APPENDIX A
Air Quality Technical Study

AIR QUALITY, GREENHOUSE GAS AND ENERGY IMPACT ANALYSIS REPORT

PERRIS REGIONAL COPMASSIONATE CENTER PERRIS, CALIFORNIA (APN 330-040-062)

Prepared for:

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TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

The purpose of this air quality and global climate change impact analysis is to provide an assessment of the impacts resulting from development of the proposed project and to identify measures that may be necessary to reduce potentially significant impacts.

CONSTRUCTION-SOURCE EMISSIONS

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the South Coast Air Quality Management District (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 trips 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.

GREENHOUSE GASES

Project-related GHG emissions do not exceed the SCAQMD industrial threshold of 10,000 MTCO2e per year and GHG emissions are considered to be less than significant. Furthermore, the project would not conflict with the goals of SB-32 and the City of Perris Climate Action Plan; therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

ENERGY

For new development such as that proposed by the 24 Malbert Street project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CalGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or

exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other light industrial cultivation uses of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the project would not cause or result in the need for additional energy producing facilities or energy delivery systems.

1. INTRODUCTION

This section describes the purpose of this air quality and global climate change impact analysis, project location, proposed development, and study area. Figure 1 shows the regional vicinity and site location, Figure 2 shows the site location, and Figure 3 illustrates the project site plan.

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts, global climate change impacts, from project related air emissions and energy-related impacts. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- discussion of the project's energy use and impacts
- recommendations for mitigation measures

The City of Perris is the lead agency for this air quality and greenhouse gas analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

PROJECT LOCATION

The project is located at 24 Malbert Street in the City of Perris. The site is located in an area characterized by industrial and commercials developments, which bound the property to the north, east and west; while Malbert Road and vacant land beyond border the property to the south. The relatively flat project site is approximately 113,692 gross square feet (2.61 acres).

The Project Site has a General Plan land use designation of General Industrial. A map showing the project's regional site and vicinity location is provided on Figure 1.

PROJECT DESCRIPTION

The project would involve the construction and operation of approximately 33,006 SF of light industrial uses that will provide a facility for the indoor cultivation of medical marijuana. The site includes 0.44 acres of landscaping a retention basin, with the balance of the 2.61 acre site composed of parking area and asphalt surfaces.

The Project's landscape plan would include a variety of trees, shrubs, and ground cover. There will be approximately 28 new trees planted on-site. Figure 2 illustrates the site location and Figure 3 illustrates the proposed site plan.

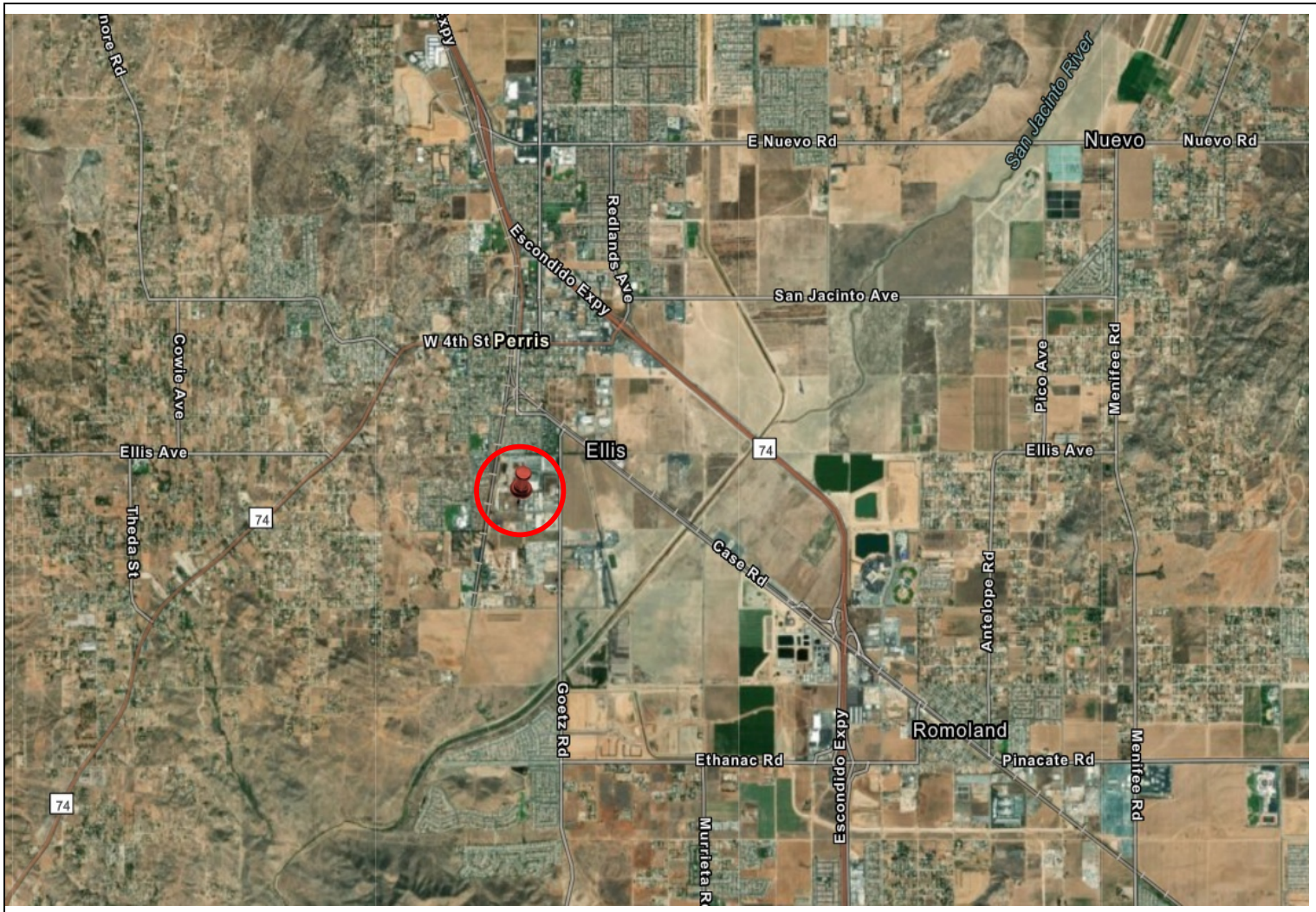
PHASING AND TIMING

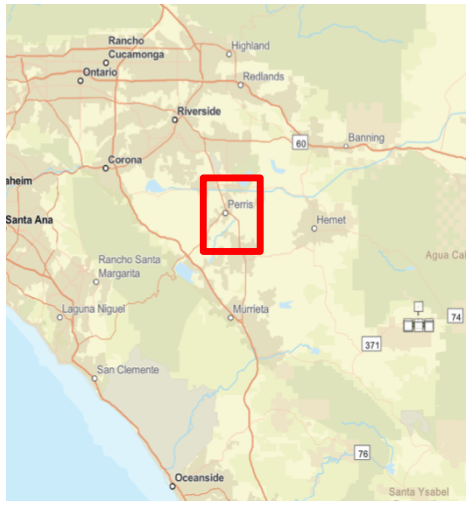
The proposed project is anticipated to be built in one phase, over 6 months, and be operational in 2020. Construction activities are anticipated to start no sooner than March/April of 2020 and include: grading, building, paving and architectural coating.

SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site include the residential uses located approximately 970 feet (295 meters) west of the project boundary. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.





Legend

Project Vicinity
(APN: 330-040-062)

Project Location

0ft 1.25mi

N

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Pathway to Regulatory Approvals

SOURCE: ArcGIS Online 2019

Figure 1
Regional Vicinity and Site Location
Malbert St. Perris, CA 92570

Perris Regional Compassionate Center

Legend

0ft 350ft

Project Boundary
(APN: 330-040-062)

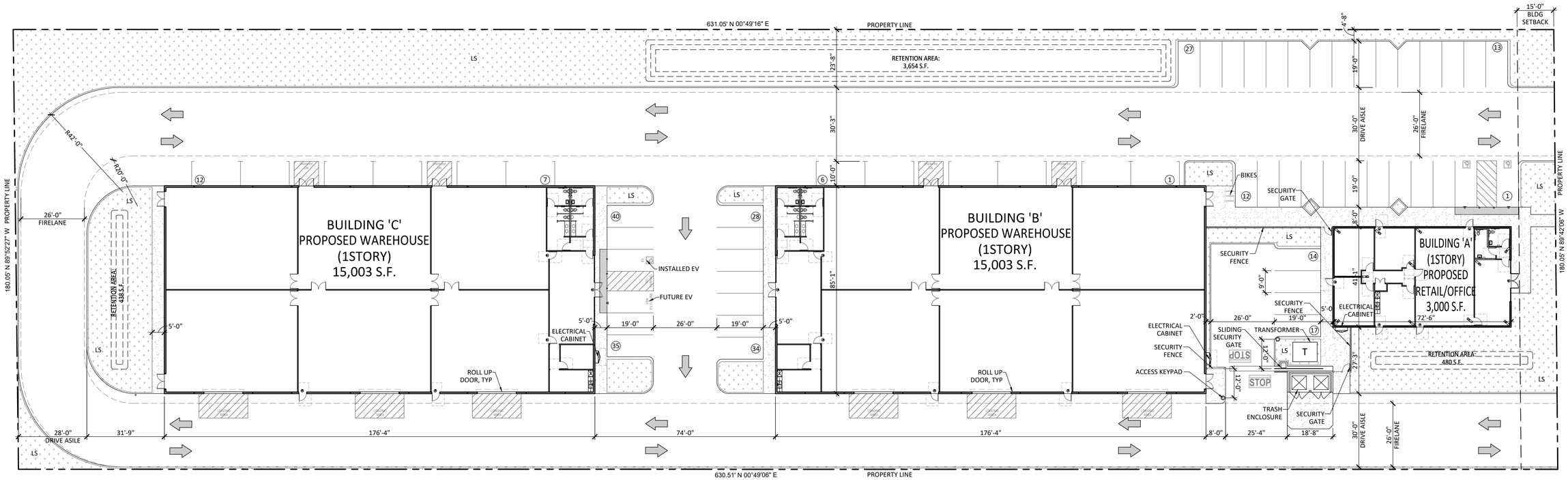
N

SOURCE: GoogleEarth2019

Figure 2
Site Location
Malbert St. Perris, CA 92570

GEPermit
Pathway to Regulatory Approvals

Perris Regional Compassionate Center



MALBERT STREET

SITE AREA:	113,692 S.F.
LANDSCAPE 10%:	11,358 S.F.
PROVIDED:	14,6611 S.F.
RETENTION AREA 4%:	4,543 S.F.
PROVIDED:	4,572 S.F.

NORTH

EPIC MANAGEMENT GROUP

APN# 330040062
24 MALBERT STREET | PERRIS, CA

CONCEPTUAL SITE PLAN - SCHEME A
08.26.19

0 10' 20' 40'
scale: 1" = 20'-0"

SHEET 2

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2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project site is located within the City of Perris, in western Riverside County, which is part of the South Coast Air Basin (SCAB) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas where the project site is located. The majority of the annual rainfall in the basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunderstorms in the coastal regions and slightly heavier showers in the eastern portion of the basin along the coastal side of the mountains. Year-to-year patterns in rainfall are unpredictable because of fluctuations in the weather.

Temperature inversions limit the vertical depth through which pollution can be mixed. Among the most common temperature inversions in the basin are radiation inversions, which form on clear winter nights when cold air off mountains sink to the valley floor while the air aloft over the valley remains warm. These inversions, in conjunction with calm winds, trap pollutants near the source. Other types of temperature inversions that affect the basin include marine, subsidence, and high-pressure inversions.

Summers are often periods of hazy visibility and occasionally unhealthful air. Strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution “hot spots” in heavily developed coastal areas of the basin, there is not enough traffic to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Perris are shown below in Table 1. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably. 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 1. Perris Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	68.5	68.1	68.3	74.2	79.6	85.3	96.7	96.9	90.8	82.5	72.0	64.5
Avg. Min. Temperature	34.7	37.5	38.9	41.6	47.5	51.7	57.4	58.7	53.2	47.1	40.5	34.9
Avg. Total Precipitation (in.)	1.63	1.93	1.29	1.04	0.16	0.06	0.33	0.06	0.35	0.14	1.97	1.45

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6816

Data from the Perris, CA station (046816).

Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory

infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in

Riverside County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 2.

The EPA and the California Air Resource Board (CARB) 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 PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), suspended particulate matter (PM-2.5), and nitrogen dioxide (NO_2).

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Table 2. State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer- visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

Table 3. South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Attainment/Unclassified
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Attainment (Maintenance)
PM2.5	Nonattainment	Nonattainment (Moderate)

Source (Federal and State Status): California Air Resources Board, October 2018.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO2, NO2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 μg/m3 and established an annual average standard for PM2.5 of 12 μg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projected attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and

encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they also have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

AB 617 Nonvehicular air pollution: criteria air pollutants and toxic air contaminants

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

Regional

South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

Air Quality Management Plan

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources.

The SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. The 2012 AQMP incorporates scientific and technological information and planning assumptions, including regional growth projections to achieve federal standards for air quality in the Air Basin. It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Additionally, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.

The SCAQMD released the Draft 2016 AQMP on June 30, 2016 for public review and comment. A revised Draft 2016 AQMP was released in October 2016 and the SCAQMD Governing Board adopted the 2016 AQMP on March 3, 2017.[1] CARB approved the 2016 AQMP on March 23, 2017. Key elements of the 2016 AQMP include

[1] South Coast Air Quality Management District, 2016 Air Quality Management Plan, https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-managementplans/

implementing fair-share emissions reductions strategies at the federal, state, and local levels; establishing partnerships, funding, and incentives to accelerate deployment of zero and near-zero-emissions technologies; and taking credit from co-benefits from greenhouse gas, energy, transportation and other planning efforts.[2] The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants ozone and PM2.5.[3] Similar to the 2012 AQMP, the 2016 AQMP relies on "…aggressive mobile source control strategy supplemented with focused and strategic stationary source control measures." The 2016 AQMP also recognizes the reduction in traditional air pollutants which occur as a "co-benefit" with the reduction in climate change-related pollutants achieved through greenhouse gas (GHG) emission reduction programs and policies, and commercial building energy efficiency measures. This analysis considers the 2016 AQMP as the most recent SCAQMD adopted plan.

SCAQMD Rules and Regulations

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project will be required to comply with:

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, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may 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 inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.

2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15.
Accessed December 2018.

[2] South Coast Air Quality Management District, 2016 Air Quality Management Plan.

[3] South Coast Air Quality Management District, NAAQS/CAAQS and Attainment Status for South Coast Air Basin, 2016, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-qualitymanagement-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed December 2018.

- Reduce traffic speeds on all unpaved roads to 15 miles per hour (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. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

SCAQMD Rule 445

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.
(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

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 the project must comply with SCAQMD Rule 1113.

SCAQMD Rule 1143

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

SCAQMD Rule 1403

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

The following are general rules that may indirectly be applicable to the proposed project:

SCAQMD Rule 1186

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 2202

On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

Air Quality Guidance Documents

SCAQMD CEQA Handbook

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared,

supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[4]. The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

Southern California Association of Governments

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, 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 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

<u>Local – City of Perris</u>

Local jurisdictions, such as the City of Perris, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is 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 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.

[4] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

The City 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.

The Healthy Community Element as well as the Conservation Element of the Perris General Plan summarize 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.

Applicable goals and policies from the Healthy Community Element include:

Goal HC-6 Healthy Environment – Support efforts of local businesses and regional agencies to improve the health of our region's environment.

Policy HC-6.1 Support regional efforts to improve air quality through energy efficient technology, use of alternative fuels, and land use and transportation planning.

Policy HC-6.3 Promote measures that will be effective in reducing emissions during construction activities

- Perris will ensure that construction activities follow existing South Coast Air Quality Management District (SCAQMD) rules and regulations
- All construction equipment for public and private projects will also comply with California Air Resources Board's vehicle standards. For projects that may exceed daily construction emissions established by the SCAQMD, Best Available Control Measures will be incorporated to reduce construction emissions to below daily emission standards established by the SCAQMD.
- Project proponents will be required to prepare and implement a Construction Management Plan which will include Best Available Control Measures among others. Appropriate control measures will be determined on a project by project basis, and should be specific to the pollutant for which the daily threshold is exceeded.

Applicable goals and policies from the Conservation Element include:

Goal X Encourage improved energy performance standards above and beyond the California Title 24 requirements.

Policy X.B Encourage the use of trees within project design to lessen energy needs, reduce the urban heat Island effect, and improve air quality throughout the region.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 Air Quality Management Plan prepared by SCAQMD (March 2017) indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

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 PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the Perris Valley Air Monitoring Area (Source Receptor Area [SRA] 24). These SRAs are designated to provide a general representation of the local meteorological, terrain, and air quality conditions within the particular geographical area. SCAQMD operates an air monitoring station at 237 1/2 N. D St., Perris, approximately 1.3 miles north of the project site. Data was also obtained from the Lake Elsinore Station, located at 506 W Flint St, Lake Elsinore; approximately 8.5 miles southwest of the site. Table 4 presents the monitored pollutant levels from the Perris and Lake Elsinore stations. 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 summarizes 2016 through 2018 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone and Particulate Matter (PM10 and PM2.5) standards.

Ozone

During the 2016 to 2018 monitoring period, the State 1-hour concentration standard for ozone was exceeded between 23 and 33 days each year at the Perris Station. The Federal/State 8-hour ozone standard has been exceeded between 55 and 80 days each year over the past three years at the Perris 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. The Perris Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

The Perris Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standards for PM10 have been estimated to have been exceeded between two and 11 days each year over the past three years at the Perris Station. Over the past three years, the Perris Station did not record an exceedance of the Federal 24-hour standards for PM10.

There was insufficient data to determine whether the Federal 24 hour standard for PM2.5 has been exceeded between over the past three years at the Perris Station. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

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.

Table 4. Air Quality Monitoring Summary

Pollutant (Standard)[1]		Year		
		2016	2017	2018
Ozone:	Maximum 1-Hour Concentration (ppm)	0.131	0.120	0.117
	Days > CAAQS (0.09 ppm)	**23**	**33**	**31**
	Maximum 8-Hour Concentration (ppm)	0.098	0.105	0.103
	Days > CAAQS/NAAQS (0.070 ppm)	**55**	**80**	**67**
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[2]	Maximum 1-Hour Concentration (ppm)	0.051	0.049	0.041
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	76.0	75.4	64.4
	Days > NAAQS (150 µg/m3)	0	0	0
	Days > CAAQS (50 µg/m3)	**5**	**11**	**2**
	Annual Average (µg/m3)	32.2	32.6	30.2
Ultra-Fine Particulates (PM2.5):[2]	Maximum 24-Hour Concentration (µg/m3)	31.5	27.2	31.2
	Days > NAAQS (35 µg/m3)	*	*	*
	Annual Average (µg/m3)	9.7	11.3	6.7

Notes:
Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Perris 237 1/2 N. D Street Monitoring Station, unless otherwise noted.

(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

(2) Data obtained from Lake Elsinore-W Flint Street Station

* Means there was insufficient data available to determine value.

AIR QUALITY STANDARDS

Significance Thresholds

Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 5.

Local Air Quality

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 South Coast 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 NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 5 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

Toxic Air Contaminants

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[5] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[6] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 6 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a

[5] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[6] South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

Table 5. SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminants, Odor and GHG Thresholds		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2e for industrial projects	
Ambient Air Quality Standards		
Pollutant	SCAQMD Standards	
NO2 -1-hour average	0.18 ppm (338 µg/m^3)	
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3	
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3	
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm	
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)	
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3	

Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

Operation

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal

of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year).

The project proposes the construction and operation of warehouse facilities for the indoor cultivation of medical marijuana. Therefore, as the project itself is not a source of TAC pollutants and is not located within proximity any of the aforementioned TAC sources, existing and proposed sensitive receptors would not be exposed to toxic sources of air pollution and no further analysis is required.

Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge 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 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. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The proposed project is a medical marijuana cultivation facility and will be required, per Section 5.58.100 of the City's marijuana ordinance (Ordinance No. 16-1330), to have an air treatment system (e.g., a recycled air system) that ensures off-site odors shall not result from its activities. This requirement at a minimum means that the commercial marijuana operation shall be designed to provide sufficient odor absorbing ventilation and exhaust systems so that any odor generated inside the location of the commercial marijuana operation is not detected outside the building, on adjacent properties or public rights-of-way, or within any other unit located within the same building as the commercial marijuana operation, if the use only occupies a portion of a building.

Additionally, I f the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: grading of approximately 2.61 acres, construction of 33,006 SF of light industrial uses (warehousing/retail office), 0.44 ac of landscaping and retention basins, paving of approximately 1.41 acres of parking/asphalted surfaces, and application of architectural coatings. See Appendix B for more details.
The site is anticipated to balance; therefore, there will be no export/import of dirt during the grading phase. The proposed project is anticipated to start the grading phase no sooner than March/April 2020 and be completed within approximately six months. The project will be operational in 2020.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2016.3.2) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.[7]

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the western portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2014 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. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

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 2.61 acres) 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 has been include in the CalEEMod modeling for the proposed project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied to buildings after January 1, 2014 will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

[7] South Coast Air Quality Management District, California Emissions Estimator Model, http://www.aqmd.gov/ caleemod/.

The phases of the construction activities which have been analyzed below for each phase are: (1) grading, (2) building construction, (3) paving, and (4) application of architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related 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 South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

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 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 CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 7, the maximum number of acres disturbed in a day would be 2 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 calculated based on the Perris Valley source receptor area (SRA) 24 and a disturbance value of two acres per day. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. However, the nearest sensitive receptors to the project site include the residential uses located approximately 970 feet (295 meters) west of the project boundary; therefore, the SCAQMD Look-up Tables for 200 meters was used. Table 8 shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds.

The data provided in Table 8 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 6. Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Grading	On-Site[1]	1.92	21.34	9.94	0.02	3.55	2.22
	Off-Site[2]	0.05	0.03	0.40	0.00	0.11	0.03
	Subtotal	1.97	21.37	10.34	0.02	3.66	2.25
Building Construction	On-Site[1]	3.10	24.76	22.38	0.04	1.41	1.35
	Off-Site[2]	0.30	2.10	2.29	0.01	0.67	0.19
	Subtotal	3.39	26.86	24.67	0.05	2.09	1.54
Paving	On-Site[1]	1.52	11.59	11.81	0.02	0.66	0.61
	Off-Site[2]	0.08	0.05	0.60	0.00	0.17	0.05
	Subtotal	1.60	11.63	12.41	0.02	0.83	0.65
Architectural Coating	On-Site[1]	17.25	1.68	1.83	0.00	0.11	0.11
	Off-Site[2]	0.05	0.03	0.40	0.00	0.11	0.03
	Subtotal	17.30	1.71	2.23	0.00	0.22	0.14
Total for overlapping phases[3]		22.29	40.21	39.32	0.07	3.13	2.34
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2

(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site grading PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.

(2) Off-site emissions from equipment operated on public roads.

(3) Construction, painting and paving phases may overlap.

Table 7. Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors[1]	2	0.5	1
Total for phase		-	-	**2**

Notes:
Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, 2011b.

(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per SCAQMD staff.

Table 8. Local Construction Emissions at the Nearest Receptors

Activity	NOx	CO	PM10	PM2.5
Grading	21.34	9.94	3.55	2.22
Building Construction	24.76	22.38	1.41	1.35
Paving	11.59	11.81	0.66	0.61
Architectural Coating	1.68	1.83	0.11	0.11
SCAQMD Thresholds[1]	**379**	**5,136**	**75**	**23**
Exceeds Threshold?	No	No	No	No

Notes:
Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres at a distance of 200 m in SRA 24 Perris Valley.

(1) The nearest sensitive receptors to the project include the residential uses located approximately 970 feet (295 meters) west of the project boundary; therefore, the 200 meter threshold was used.
Note: The project will disturb up to a maximum of 2 acres a day during grading (see Table 7).

Construction-Related Toxic Air Contaminant Impacts

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. According to the Office of Environmental Health Hazard Assessment (OEHHA)[8] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[9] health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 6 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SCAQMD Rule 1403 if asbestos is found during the renovation and construction activities. Therefore, impacts from TACs during construction would be less than significant.

Construction-Related Odor Impacts

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 to cease upon the drying or hardening of the odor producing materials. 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. 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.

[8] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[9] South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

Long-Term Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The City of Perris did not require any type of traffic analysis for this project; therefore, the project was analyzed using CalEEMod defaults for General Light Industry Land Use and the opening year 2020. The CalEEMod default trip generation rate for the light industrial use is 6.97 trips per thousand square feet (TSF) weekdays, 1.32 trips/TSF on Saturdays and 0.68 trips/TSF on Sundays. As cultivation facilities do not generate many project-related traffic trips, it is likely that CalEEMod has over-estimated the number of project related trips and consequently the project's mobile source emissions. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

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 on the CalEEMod default trip generation rates given for a General Light Industry Land Use. The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, 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. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 9. The results show that none of the SCAQMD regional thresholds would be exceeded. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Operations-Related Local Air Quality Impacts

Project-related 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 South Coast Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

Local CO Emission Impacts from Project-Generated Vehicular Trips

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 above in Section 2.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section 2, 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.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset

Table 9. Regional Operational Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]		0.73	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]		0.03	0.29	0.24	0.00	0.02	0.02
Mobile Sources[3]		0.55	4.16	7.60	0.03	2.20	0.61
Total Emissions		**1.32**	**4.45**	**7.85**	**0.03**	**2.22**	**0.63**
SCAQMD Thresholds		**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?		No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2; the higher of either summer or winter emissions.

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
(3) Mobile sources consist of emissions from vehicles and road dust.

Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

As stated previously, the number of project-related daily trips are so low that the City of Perris did not require any kind of traffic analysis for the project. 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. Therefore, the proposed project's highest traffic volumes would be anticipated to fall short of 100,000 vehicles, 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.

Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site 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 Air Basin. The nearest sensitive receptors to the project site include the residential uses located approximately 970 feet (295 meters) west of the project boundary.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project is a light industrial use focused on the cultivation of medical marijuana and will only be intermittently subject to cargo vans or small box truck-type delivery vehicles that would not idle on-site . Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. The proposed project is a medical marijuana cultivation facility and will be required, per Section 5.58.100 of the City's marijuana ordinance (Ordinance No. 16-1330), to have an air treatment system (e.g., a recycled air system) that ensures off-site odors shall not result from its activities. This requirement at a minimum means that the commercial marijuana operation shall be designed to provide sufficient odor absorbing ventilation and exhaust systems so that any odor generated inside the location of the commercial marijuana operation is not detected outside the building, on adjacent properties or public rights-of-way, or within any other unit located within the same building as the commercial marijuana operation, if the use only occupies a portion of a building.

Due to the distance of the nearest receptors from the project site, through compliance with the City's rules governing commercial marijuana facilities, and compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed project.

CUMULATIVE AIR QUALITY IMPACTS

Project Specific Impacts

The project area is out of attainment for ozone and in 2018 was out of attainment for PM10. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes 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. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant.

The emissions from construction of the project are not predicted to exceed any applicable SCAQMD regional or local impact threshold and therefore, are not expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, the project would not result in a cumulatively considerable net increase for non-attainment pollutants or ozone precursors and would result in a less than significant cumulative impact for construction emissions.

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project; based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, the project would result in a less than significant cumulative impact for operational emissions.

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.

Criteria 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.

Criteria 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 Perris Land Use Plan defines the assumptions that are represented in the AQMP.

The Project Site has a General Plan land use designation of General Industrial. As the project proposes to construct and operate a medical marijuana cultivation facility, which is a light industrial land use, the project would be consistent with the City's land use designation. Therefore, the proposed project would not 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.

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

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 (NOx) 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. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

Methane (CH_4)

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 10. As shown in Table 10, the global warming potential of GHGs ranges from 1 to 22,800.

Table 10. Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential[1] (100 Year Horizon)
Carbon Dioxide (CO_2)	—[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:
Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

(1) Compared to the same quantity of CO_2 emissions.

(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

GREENHOUSE GAS STANDARDS AND REGULATIONS

International

Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the

Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

The Paris Agreement

The Paris Agreement entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake take ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. The Trump administration has recently indicated the United States federal government will no longer participate in the Paris agreement. However, the U.S. cannot technically withdraw from the Agreement until 2020.

Federal

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[10]

Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified

[10] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[11] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[12] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

In August 2018, the USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, 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. The proposal, if adopted, would also exclude CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[13]

State of California

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-3-05

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

[11] The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.
[12] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/ Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.
[13] 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.

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: 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.

Assembly Bill 32

In 2006, the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective.

On December 6, 2007 CARB released the calculated Year 1990 GHG emissions of 427 million metric tons of CO_2e ($MMTCO_2e$). The 2020 target of 427 $MMTCO_2e$ requires the reduction of 169 $MMTCO_2e$, or approximately 30 percent from the State's projected 2020 business as usual emissions of 596 $MMTCO_2e$ and the reduction of 42 $MMTCO_2e$, or almost 10 percent from the 2002-2004 average GHG emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources that became enforceable on or before January 1, 2010.

On December 11, 2008 the CARB Board approved a Scoping Plan, with final adoption May 11, 2009 that proposed a variety of measures including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, a market-based cap-and-trade system, and a fee regulation to fund the program. Association of Irritated Residents v. California Air Resources Board, a California State trial court found that the analysis of the alternatives identified in the AB 32 Scoping Plan Functional Equivalent Document (FED) was not sufficient for informed decision-making and public review under CEQA. In response, CARB has appealed the decision. In addition, CARB prepared the *Supplement to the AB 32 Scoping Plan Functional Equivalent Document* (June 13, 2011). On August 24, 2011 CARB recertified the complete AB 32 Scoping Plan Functional Equivalent Environmental Document revised by the Final Supplement. In December, 2011 the Final Supplement was accepted as sufficient to fulfill the trial court's March order.

While local government operations were not accounted for in achieving the 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 metric tons of CO_2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2010 levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target).

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This

report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

On January 20, 2017, CARB announced its release of a proposed plan to reduce greenhouse gas emissions by 40 percent below 1990 levels by 2030 – the most ambitious target in North America. The plan builds on the state's successful efforts to reduce emissions and outlines the most effective ways to reach the 2030 goal, including continuing California's Cap-and-Trade Program. The Final 2017 Scoping Plan Update was approved by CARB on December 14, 2017. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

SB 32, Pavley. California Global Warming Solutions Act of 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.
(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September, 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007.

These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by California Public Utilities Commission (CPUC) and California Energy Commission (CEC).

Executive Order S-1-07

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. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. 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 during 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.

Senate Bill 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 Natural Resources 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 Natural 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 were provided and no specific mitigation measures were 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.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) 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) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed 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.

Senate Bill 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.

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 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. 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.

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. CalEEMod modeling defaults to 2008 standards. 2013 Standards have been approved and are effective July 1, 2014.

California Code of Regulations (CCR) Title 24, Part 11

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 Standards have been approved and were effective July 1, 2014. 2016 Standards were adopted January 1, 2017.

All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 standards. The 2016 standards are estimated to be approximately 28 percent more efficient than the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

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 on January 1, 2011.

2016 CALGreen Code: During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle. HCD adopted three new definitions related to electric vehicle charging regulations. These definitions provided clarity to the code user as to the differences between an electric vehicle charging space and an electric vehicle charging station. HCD replaced the term "electric vehicle charging stations" with "electric vehicle charging spaces" since the term "electric vehicle charging space" better describes a space available for future installation of electric vehicle supply equipment, but with no electric vehicle charger installed.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

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 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16

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

SBX1 2

Signed into law in April 2011, SBX1 2, requires one-third of the state's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

California Greenhouse Gas Reduction Targets

Executive Order S-3-05

Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3- 05, the following GHG emission reduction targets:

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

In accordance with Executive Order S-3-05, the Secretary of CalEPA is required to coordinate efforts of various agencies, which comprise the California Climate Action Team (CAT), in order to collectively and efficiently reduce GHGs. These agencies include CARB, the Secretary of the Business, Transportation and Housing Agency, Department of Food and Agriculture, the Resources Agency, the California Energy Commission, and the Public Utilities Commission. The CAT provides periodic reports to the Governor and Legislature on the state of GHG reductions in the state as well as strategies for mitigating and adapting to climate change. The first CAT Report to the Governor and the Legislature, in 2006, contained recommendations and strategies to help meet the targets in Executive Order S-3-05. The 2010 CAT Report, finalized in December 2010, expands on the policies in the 2006 assessment.[14] The new information detailed in the CAT Report includes development of revised climate and sea-level projections using new information and tools that became available and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution

[14] California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, 2010, http://www.energy.ca.gov/2010publications/CAT-1000-2010- 005/CAT-1000-2010-005.PDF.

reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO2e using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO2e (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO2e.

First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO2e.

2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[15] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030.

[15] California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[16]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."17 As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2016 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2017.

<u>Regional – South Coast Air Quality Management District</u>

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

SCAQMD Regulation XXVII, Climate Change

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.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

[16] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf
[17] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

SCAQMD Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

SCAQMD 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.

SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. 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 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 with all projects within its jurisdiction. 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 type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
  - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 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.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, 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 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

Local – City of Perris

City of Perris Climate Action Plan

The City of Perris Climate Action Plan (CAP) was adopted by the City Council (Resolution Number 4966) on February 23, 2016. The CAP was developed to address global climate change through the reduction of harmful GHG emissions at the community level, and as part of California's mandated statewide GHG emissions reduction goals under AB 32. Perris's CAP, including the GHG inventories and forecasts contained within, is based on WRCOG's Subregional CAP. The Perris CAP utilized WRCOG's analysis of existing GHG reduction programs and policies that have already been implemented in the subregion and applicable best practices from other regions to assist in meeting the 2020 subregional reduction target. The CAP reduction measures chosen for the City's CAP were based on their GHG reduction potential, cost-benefit characteristics, funding availability, and feasibility of implementation in the City of

Perris. The CAP used an inventory base year of 2010 and included emissions from the following sectors: residential energy, commercial/industrial energy, transportation, waste, and wastewater. The CAP's 2020 reduction target is 15% below 2010 levels, and the 2035 reduction target is 47.5% below 2010 levels. The City of Perris is expected to meet these reduction targets through implementation of statewide and local measures. Beyond 2020, Executive Order S-03-05 calls for a reduction of GHG emissions to a level 80% below 1990 levels by 2050.

SIGNIFICANCE THRESHOLDS

Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- Threshold 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Threshold 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

A numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin (Basin) has not been established by the South Coast Air Quality Management District (SCAQMD) for Projects where it is not the lead agency. As an interim threshold based on guidance provided in the CAPCOA CEQA and Climate Change handbook, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90 percent of emissions from future development. The latest threshold developed by SCAQMD using this method is 10,000 metric tons carbon dioxide equivalent (MTCO2E) per year for industrial projects. As such, this numeric threshold is used to determine impacts with respect to Threshold 1.

Section 3 identifies the Project's consistency with the 2008 Scoping Plan, 2017 Scoping Plan, and City of Perris CAP. As such, this section is used to determine impacts with respect to Threshold 2.

The project's GHG emissions for both construction and operation have been quantified and an analysis of the project's compliance with all applicable regulations and plans in regards to GHG emissions has been included below.

METHODOLOGY

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

CalEEMod Version 2016.3.2 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Output for year 2020 is available in Appendix C. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed based on the CalEEMod default trip generation rate for General Light Industry Land Use. See Section 2 for details. Emissions of GHGs associated with mobile sources from operation of the Project are based on the average daily trip rate, trip distance, the GHG emission factors for the mobile sources, and the GWP values for the GHGs emitted. The types of vehicles that would visit the Site include all vehicle types including automobiles, light-duty trucks, delivery trucks, and waste haul trucks. Modeling for the Project was conducted using the vehicle fleet mix for the Riverside County portion of the South Coast Air Basin as provided in EMFAC2014 and CalEEMod. Annual mobile source GHG emissions in units of MTCO2e are generally calculated as follows:

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. AB 341 requires that 75 percent of waste be diverted from landfills by 2020. No other changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to the default water usage parameters.

Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod and detailed above in Section 2.

Sequestration

The analysis includes reduction of GHG emissions from the planting of 28 new trees. The California Air Pollution Control Officers Association (CAPCOA) states that trees sequester carbon dioxide over 20 years of their life, after that, sequestration is nominal and outweighed by tree maintenance-related emissions. The total sequestration value given in the Annual CalEEMod output (Appendix C) was divided by 20 years to yield an annual value, which was then subtracted from the project's emissions.

PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results are shown below in Table 11 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 11 shows that the total for the proposed project’s emissions would be 600.69 MTCO2e per year which would not exceed the SCAQMD 10,000 MTCO2e/year threshold for industrial projects as described above for Threshold 1. Impacts are considered to be less than significant.

Table 11. Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	Non Bio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.00	170.82	170.82	0.01	0.00	171.56
Mobile Sources[3]	0.00	358.13	358.13	0.02	0.00	358.55
Waste[5]	8.31	0.00	8.31	0.49	0.00	20.58
Water[6]	2.42	31.67	34.09	0.25	0.01	42.17
Construction[7]	0.00	8.78	8.78	0.00	0.00	8.81
Sequestration[8]						-0.99
Total Emissions	10.73	569.39	580.12	0.77	0.01	**600.69**

Notes:
Source: CalEEMod Version 2016.3.2 for Opening Year 2020.

(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

(2) Energy usage consist of GHG emissions from electricity and natural gas usage.

(3) Mobile sources consist of GHG emissions from vehicles.

(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

(6) Construction GHG emissions CO2e based on a 30 year amortization rate.

(7) Sequestration from the planting of 28 trees on-site (19.8240 MTCO2e/ 20 year lifetime per SCAQMD guidance).

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

Consistency with AB32 Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of greenhouse gases in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, the CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

In November 2017, the CARB released the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. In addition, Chapter 4 provides a broader description of the many actions and proposals being explored across the sectors, including the natural resources sector, to achieve the State's mid and long-term climate goals.

Guided by legislative direction, the actions identified in the 2017 Scoping Plan reduce overall GHG emissions in California and deliver policy signals that will continue to drive investment and certainty in a low carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and Trade Program, which constrains and reduces emissions at covered sources.

As the latest 2017 Scoping Plan builds upon previous versions, project consistency with applicable strategies of both the 2008 and 2017 Plan are assessed in Table 12. As shown in Table 12, the project is consistent with the applicable strategies within the Scoping Plan.

Consistency with the City of Perris Climate Action Plan

The City of Perris adopted its CAP in February 2016. The measures identified in the CAP represent the City's actions to achieve the GHG reduction targets of AB 32 for target year 2020. Local measures included in the CAP include:

- An energy measure that directs the City to create an energy action plan to reduce energy consumption citywide.
- Land use and transportation measures that encourage alternative modes of transportation (walking, biking, and transit), reduce motor vehicle use by allowing a reduction in parking supply, voluntary transportation demand management to reduce vehicle miles traveled, and land use strategies that improve jobs-housing balance (increased density and mixed-use).
- Solid waste measures that reduce landfilled solid waste in the City.

The proposed project would not conflict with these local strategies. Additionally, the proposed project is consistent with state and regional strategies, listed in the CAP. Further, the proposed project is subject to California Building Code requirements. New buildings must achieve the 2016 Building and Energy Efficiency Standards and the 2016 California Green Building Standards requirements, which include water conservation measures. Overall, the proposed project overall would not conflict with the City of Perris CAP and impacts would be less than significant. No mitigation measures are necessary.

Table 12. Project Consistency with the CARB Scoping Plan Measures

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Consistent. These are CARB enforced standards; vehicles that access the proposed project is required to comply with the standards will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	Consistent. The proposed project is required to follow California Green Building Code and 2016 Title 24 Building Energy Efficiency Standards or better.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	Consistent. These are CARB enforced standards; vehicles that access the proposed project that are required to comply with the standards will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the proposed project that are required to comply with the standards will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the proposed project that are required to comply with the standards will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2016 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The proposed project will be subject to these mandatory standards.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	Consistent. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the proposed project that are required to comply with the measures will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The proposed project and the Increased Commercial Flexibility Option will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 75 percent reduction required by 2020 per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The proposed project will comply with all applicable City ordinances and CAL Green requirements. Further, per City requirements, the proposed project includes the design feature of water-efficient irrigation systems/drought-tolerant landscaping.

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[18] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

[18] Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

4. MITIGATION MEASURES

CONSTRUCTION MEASURES

Adherence to SCAQMD Rules 403 is required.

No construction mitigation required.

OPERATIONAL MEASURES

No operational mitigation required.

5. ENERGY ANALYSIS

EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

Overview

California's estimated annual energy use as of 2018 included:

- Approximately 194,842 gigawatt hours of electricity;[19]
- Approximately 2,110,829 million cubic feet of natural gas per year[20]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015)[21].

As of 2016, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.8 percent transportation;
- Approximately 23.7 percent industrial;
- Approximately 17.7 percent residential; and
- Approximately 18.9 percent commercial.[22]

California's electricity in-state generation system generates approximately 194,842 gigawatt-hours each year. In 2018, California produced approximately 68 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 14 percent) and the U.S. Southwest (approximately 18 percent). Natural gas is the main source for electricity generation at approximately 46.54 percent of the total in-state electric generation system power as shown in Table 13.

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- Excluding federal offshore areas, California was the fourth-largest producer of crude oil among the 50 states in 2017, after Texas, North Dakota, and Alaska, and, as of January 2018, third in oil refining capacity after Texas and Louisiana.
- In 2016, California accounted for one-fifth of the nation's jet fuel consumption.
- California's total energy consumption is the second-highest in the nation, but, in 2016, the State's per capita energy consumption ranked 48th, due in part to its mild climate and its energy efficiency programs.
- In 2017, California ranked second in the nation in conventional hydroelectric generation and first as a producer of electricity from solar, geothermal, and biomass resources.
- In 2017, solar PV and solar thermal installations provided about 16 percent of California's net electricity generation[23].

[19] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] June 24, 2019. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html.
[20] Natural Gas Consumption by End Use . U.S. Energy Information Administration. [Online] March 29, 2019. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.
[21] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/
[22] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] November 15, 2018 https://www.eia.gov/state/?sid=CA#tabs-2
[23] State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: November 15, 2018.] http://www.eia.gov/state/?sid=CA#tabs2.

Table 13. Total Electricity System Power (California 2018)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	California Power Mix (GWh)	Percent California Power Mix
Coal	294	0.15%	399	8,740	9,433	3.30%
Large Hydro	22,096	11.34%	7,418	985	30,499	10.68%
Natural Gas	90,691	46.54%	49	8,904	99,644	34.91%
Nuclear	18,268	9.38%	0	7,573	25,841	9.05%
Oil	35	0.02%	0	0	35	0.01%
Other (Petroleum Coke/Waste Heat)	430	0.22%	0	9	439	0.15%
Renewables	63,028	32.35%	14,074	12,400	89,502	31.36%
Biomass	5,909	3.03%	772	26	6,707	2.35%
Geothermal	11,528	5.92%	171	1269	12,968	4.54%
Small Hydro	4,248	2.18%	334	1	4,583	1.61%
Solar	27,265	13.99%	174	5,094	32,533	11.40%
Wind	14,078	7.23%	12,623	6,010	32,711	11.46%
Unspecified Sources of Power	N/A	N/A	17,576	12,519	30,095	10.54%
Total	194,842	100.00%	39,517	51,130	285,488	100.00%

Notes:
(1) Source: California Energy Commission. Total System electric Generation, June 24, 2019. https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, a medical marijuana cultivation facility, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for shelter uses, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons, within a service area encompassing approximately 50,000 square miles.[24] SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers.[25]

Table 13 identifies SCE's specific proportional shares of electricity sources in 2017. As shown in Table 14, the 2017 SCE Power Mix has renewable energy at 29 percent of the overall energy resources, of which biomass and waste is at 2 percent, geothermal is at 4 percent, small hydroelectric is at 3 percent, solar energy is at 10 percent, and wind

[24] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory
[25] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

power is at 10 percent; other energy sources include coal at 4 percent, large hydroelectric at 15 percent, natural gas at 34 percent, nuclear at 9 percent and unspecified sources at 9 percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers, who accounted for approximately 32 percent of the natural gas delivered by California utilities in 2012. Large consumers, like electric generators and industrial customers, referred to as "noncore" customers, accounted for approximately 68 percent of the natural gas delivered by California utilities in 2012.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2012, California customers received 35 percent of their natural gas supply from basins located in the Southwest, 16 percent from Canada, 40 percent from the Rocky Mountains, and 9 percent from basins located within California. California gas utilities may soon also begin receiving biogas into their pipeline systems."[26]

Table 14. SCE 2017 Power Content Mix

Energy Resources	2017 SCE Power Mix
Eligible Renewable	29%
Biomass & Waste	2%
Geothermal	4%
Small Hydroelectric	3%
Solar	10%
Wind	10%
Coal	4%
Large Hydroelectric	15%
Natural Gas	34%
Nuclear	9%
Other	<1%
Unspecified Sources of power*	9%
Total	100%

Notes:
(1) https://www.sce.com/sites/default/files/inline-files/2017PCL_0.pdf

* Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

[26] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available (2016) shows the transportation sector emits 41 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[27,28] Petroleum comprises about 92 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[29]

REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[30]

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation

[27] CARB. California Greenhouse Gas Emissions Inventory – 2018 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm
[28] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA
[29] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation
[30] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The recently-approved 2017 Integrated Energy Policy Report Updated (2017 IEPR) was published in April 2018, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.[31]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 4 Air Quality Management of this report.

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2016 Title 24 standards, which became effective on January 1, 2017. The 2016 Title 24 standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers.

[31] California Energy Commission. Final 2017 Integrated Energy Policy Report. April 16, 2018. https://www.energy.ca.gov/2017_energypolicy/

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2016 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. Most mandatory measure changes, when compared to the previously applicable 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. For example, several definitions related to energy that were added or revised affect electric vehicle (EV) chargers and charging and hot water recirculation systems. For new multi-family dwelling units, the residential mandatory measures were revised to provide additional EV charging requirements, including quantity, location, size, single EV space, multiple EV spaces, and identification. For nonresidential mandatory measures, the CALGreen table (Table 5.106.5.3.3) identifying the number of required EV charging spaces has been revised in its entirety.

Senate Bill 350

As previously discussed in Section 2 Air Quality Management of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Assembly Bill 32

As discussed in Section 2 Air Quality Management of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 4 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed Section 2 Air Quality Management of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed Section 2 Air Quality Management of this report, 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. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. 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 during 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.

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[32]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NO_X) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission controlled models would use petroleum-based fuel in a more efficient manner.

[32] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 2 Air Quality Management of this report, 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) jurisdiction, 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 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2016.3.2 Daily and Annual Outputs contained in Appendix B and C, utilized for air quality and greenhouse gas analyses in Sections 2 and 3 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

The construction schedule is anticipated to occur between March 2020 and August/September 2020 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately six-month schedule is relatively short and the project site is relatively small at approximately 2.61 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by Southern California Edison. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[33], 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 33,006 SF of light industrial uses over the course of approximately six months. Based on Table 15, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $459.44.

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 6 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6 hours
- 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).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), 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 2013 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 16 shows the results of the analysis of construction equipment.

As presented in Table 16, project construction activities would consume an estimated 22,019 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

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 92,051 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) using information generated using CARB's EMFAC model. An aggregate fuel efficiency of 28.57 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 17 shows that an estimated 3,222 gallons of fuel would be consumed for construction worker trips.

[33] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

Table 15. 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)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	33.006	6	$459.44

* Note: Building size estimate obtained from site plan for all three proposed buildings.

Table 16. 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]
	6	Graders	1	8	187	0.41	613	199
	6	Rubber Tired Dozers	1	8	247	0.4	790	256
	6	Tractors/Loaders/Backhoes	2	7	97	0.37	502	163
Building Construction	124	Cranes	1	8	231	0.29	536	3,592
	124	Forklifts	4	7	89	0.2	498	3,341
	124	Generator Sets	2	8	84	0.74	995	6,666
	124	Tractors/Loaders/Backhoes	2	6	97	0.37	431	2,887
	124	Welders	3	8	46	0.45	497	3,330
Paving	10	Cement and Mortar Mixers	1	8	9	0.56	40	22
	10	Pavers	1	8	130	0.42	437	236
	10	Paving Equipment	1	8	132	0.36	380	205
	10	Rollers	2	8	80	0.38	486	263
	10	Tractors/Loaders/Backhoes	1	8	97	0.37	287	155
Architectural Coating	10	Air Compressors	1	6	78	0.48	225	121
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**22,019**

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)

Table 17. Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	10	14.7	882	28.57	31
Building Construction	124	48	14.7	87,494	28.57	3,062
Paving	10	15	14.7	2,205	28.57	77
Architectural Coating	10	10	14.7	1,470	28.57	51
Total Construction Worker Fuel Consumption						**3,222**

Notes:
(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Construction Vendor/Hauling Fuel Estimates

Tables 18 and 19 show the estimated fuel consumption for vendor and hauling during grading, building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 1,913 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

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. Therefore, 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 8.5 mpg. However, there is no hauling of materials needed from this project site. Tables 18 and 19 show that an estimated 1,913 gallons of fuel would be consumed for vendor trips only.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately six-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. 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.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints.

<u>Operational Energy Demands</u>

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).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), it is assumed that an average trip for autos and light trucks was assumed to be 14.7 miles and 3- 4-axle trucks were assumed to travel an average of 5.9 miles[34]. To present a worst-case scenario, it was assumed that vehicles would operate 365 days per year rather than the more likely 253 days (excluding weekends and up to 8 holidays). Table 20 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.

[34] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-O (home-other) or C-O (commercial-other).

Table 18. Construction Vendor Fuel Consumption Estimates (MHD Trucks)

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	0	6.9	0	8.5	0
Building Construction	124	19	6.9	16,256	8.5	1,913
Paving	10	0	6.9	0	8.5	0
Architectural Coating	10	0	6.9	0	8.5	0
Total Construction Worker Fuel Consumption						**1,913**

Notes:
(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 19. Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	0	20	0	8.5	0
Building Construction	124	0	20	0	8.5	0
Paving	10	0	20	0	8.5	0
Architectural Coating	10	0	20	0	8.5	0
Total Construction Worker Fuel Consumption						**0**

Notes:
(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

The default CalEEMod trip generation showed that the proposed project would generate approximately 230 trips per day. The vehicle fleet mix was used from the CalEEMod output. Table 20 shows that an estimated 58,559 gallons of fuel would be consumed per year for the operation of the proposed project.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Southern California Edison) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) and are provided in Table 21.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

Table 20. Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles[1]	Average Trip (miles)[2]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	130	14.7	1911	28.57	66.89	24,414
Light Truck	Automobile	10	14.7	147	14.08	10.44	3,811
Light Truck	Automobile	41	14.7	603	14.08	42.81	15,624
Medium Truck	Automobile	27	5.9	159	8.5	18.74	6,841
Light Heavy Truck	2-Axle Truck	1	5.9	6	8.5	0.69	253
Light Heavy Truck 10,000 lbs+	2-Axle Truck	1	5.9	6	8.5	0.69	253
Medium Heavy Truck	3-Axle Truck	4	5.9	24	5.85	4.03	1,472
Heavy Heavy Truck	4-Axle Truck	16	5.9	94	5.85	16.14	5,890
Total		230	--	2,950	11.74	160.43	--
Total Annual Fuel Consumption							**58,559**

Notes:
(1) Based on CalEEMod fleet mix.
(2) Based on CalEEMod fleet mix. The size of the site and relative location, trips were assumed to be local rather than regional.

Table 21. Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year
General Light Industry	1,072,360
Total	1,072,360

Electricity Demand	kWh/year
General Light Industry	356,508
Total	356,508

Notes:
(1) Taken from the CalEEMod 2016.3.2 annual output (Appendix C of this report).

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

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

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.

As shown in Section 3 above, the proposed project is consistent with the applicable strategies of the City of Perris Climate Action Plan.

CONCLUSIONS

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. Further, the energy demands of the project can be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. Notwithstanding, the project proposes residential uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

6. REFERENCES

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 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.
Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

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.

2017 California's 2017 Climate Change Scoping Plan. November.

2019 Historical Air Quality, Top 4 Summary

City of Perris

2005 City of Perris General Plan Conservation Element. July 12.

2015 City of Perris General Plan Healthy Community Element. June 9.

2016 City of Perris Climate Action Plan

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC).

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

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

2012 Final 2012 Air Quality Management Plan

2016 2016 Air Quality Management Plan

Southern California Association of Governments

2016 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials
(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A Glossary of Terms

Appendix B CalEEMod Model Daily Emissions Printouts

Appendix C CalEEMod Model Annual Emissions Printouts

APPENDIX A

GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
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
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
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
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL DAILY EMISSIONS PRINTOUTS

Malbert St Warehouse, Perris

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	33.01	1000sqft	0.76	33,006.00	0
Other Non-Asphalt Surfaces	0.44	Acre	0.44	19,166.40	0
Parking Lot	1.41	Acre	1.41	61,419.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Malbert St Warehouse, Perris - Riverside-South Coast County, Summer

Project Characteristics -

Land Use - Site area is 113,692 SF (2.61 ac). Proposed: 33,006 SF of light industrial uses (warehousing/retail office). 0.44 ac of landscaping and rention basin area. Balance of the site is parking and asphalted surfaces.

Construction Phase - No demo or site prep. Warehouses will be tilt-up. Construction to begin no earlier than March/April of 2020 and last approximately 6 months.

Off-road Equipment - Due to accelerated construction time, the number of forklifts, generator sets and tractor/loader/backhoes was doubled; however tilt-up warehouse construction takes less equipment to construct.

Off-road Equipment -

Grading - Site will balance. No import/export

Architectural Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Vehicle Trips - No traffic analysis provided/required; therefore, default trip generation used.

Area Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Sequestration - ~28 new trees to be planted on-site

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation - 20% reduction in indoor water use per CalGreen

Waste Mitigation - AB 341 requires a 75% diversion in waste

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	4,835.00	3,685.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_Parking	4835	3685
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	124.00
tblLandUse	LandUseSquareFeet	33,010.00	33,006.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblSequestration	NumberOfNewTrees	0.00	28.00

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					
2020	20.6926	38.4935	37.0834	0.0664	6.6641	2.0853	7.6550	3.3971	1.9723	4.3087	0.0000	6,323.0179	6,323.0179	1.2551	0.0000	6,354.3956
Maximum	**20.6926**	**38.4935**	**37.0834**	**0.0664**	**6.6641**	**2.0853**	**7.6550**	**3.3971**	**1.9723**	**4.3087**	**0.0000**	**6,323.0179**	**6,323.0179**	**1.2551**	**0.0000**	**6,354.3956**

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					
2020	20.6926	38.4935	37.0834	0.0664	2.6672	2.0853	3.6580	1.3430	1.9723	2.2545	0.0000	6,323.0179	6,323.0179	1.2551	0.0000	6,354.3955
Maximum	**20.6926**	**38.4935**	**37.0834**	**0.0664**	**2.6672**	**2.0853**	**3.6580**	**1.3430**	**1.9723**	**2.2545**	**0.0000**	**6,323.0179**	**6,323.0179**	**1.2551**	**0.0000**	**6,354.3955**

	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**	**59.98**	**0.00**	**52.21**	**60.47**	**0.00**	**47.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Energy	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Mobile	0.5544	4.1185	7.6024	0.0299	2.1731	0.0268	2.1999	0.5815	0.0253	0.6068		3,043.2579	3,043.2579	0.1374		3,046.6929
Total	**1.3151**	**4.4066**	**7.8479**	**0.0316**	**2.1731**	**0.0487**	**2.2218**	**0.5815**	**0.0472**	**0.6287**		**3,388.9110**	**3,388.9110**	**0.1440**	**6.3400e-003**	**3,394.4005**

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Energy	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Mobile	0.5544	4.1185	7.6024	0.0299	2.1731	0.0268	2.1999	0.5815	0.0253	0.6068		3,043.2579	3,043.2579	0.1374		3,046.6929
Total	**1.3151**	**4.4066**	**7.8479**	**0.0316**	**2.1731**	**0.0487**	**2.2218**	**0.5815**	**0.0472**	**0.6287**		**3,388.9110**	**3,388.9110**	**0.1440**	**6.3400e-003**	**3,394.4005**

	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	3/1/2020	3/9/2020	5	6	
2	Building Construction	Building Construction	3/10/2020	8/30/2020	5	124	
3	Paving	Paving	8/1/2020	8/14/2020	5	10	
4	Architectural Coating	Architectural Coating	8/15/2020	8/28/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.85

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 49,509; Non-Residential Outdoor: 16,503; Striped Parking Area: 3,685 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	48.00	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

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2020

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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
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
Worker	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

3.2 Grading - 2020

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					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**2.5554**	**0.9902**	**3.5456**	**1.3133**	**0.9110**	**2.2243**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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
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
Worker	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

3.3 Building Construction - 2020

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	3.0961	24.7617	22.3780	0.0366		1.4134	1.4134		1.3526	1.3526		3,396.5526	3,396.5526	0.6564		3,412.9618
Total	**3.0961**	**24.7617**	**22.3780**	**0.0366**		**1.4134**	**1.4134**		**1.3526**	**1.3526**		**3,396.5526**	**3,396.5526**	**0.6564**		**3,412.9618**

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
Vendor	0.0530	1.9549	0.3576	4.9600e-003	0.1217	0.0111	0.1328	0.0350	0.0106	0.0457		523.2428	523.2428	0.0393		524.2239
Worker	0.2443	0.1445	1.9354	5.3100e-003	0.5365	3.2500e-003	0.5398	0.1423	2.9900e-003	0.1453		528.7654	528.7654	0.0136		529.1042
Total	**0.2972**	**2.0994**	**2.2931**	**0.0103**	**0.6582**	**0.0144**	**0.6726**	**0.1773**	**0.0136**	**0.1910**		**1,052.0081**	**1,052.0081**	**0.0528**		**1,053.3281**

3.3 Building Construction - 2020

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	3.0961	24.7617	22.3780	0.0366		1.4134	1.4134		1.3526	1.3526	0.0000	3,396.5526	3,396.5526	0.6564		3,412.9618
Total	**3.0961**	**24.7617**	**22.3780**	**0.0366**		**1.4134**	**1.4134**		**1.3526**	**1.3526**	**0.0000**	**3,396.5526**	**3,396.5526**	**0.6564**		**3,412.9618**

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
Vendor	0.0530	1.9549	0.3576	4.9600e-003	0.1217	0.0111	0.1328	0.0350	0.0106	0.0457		523.2428	523.2428	0.0393		524.2239
Worker	0.2443	0.1445	1.9354	5.3100e-003	0.5365	3.2500e-003	0.5398	0.1423	2.9900e-003	0.1453		528.7654	528.7654	0.0136		529.1042
Total	**0.2972**	**2.0994**	**2.2931**	**0.0103**	**0.6582**	**0.0144**	**0.6726**	**0.1773**	**0.0136**	**0.1910**		**1,052.0081**	**1,052.0081**	**0.0528**		**1,053.3281**

3.4 Paving - 2020

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5241**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

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
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
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

3.4 Paving - 2020

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5241**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

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
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
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

3.5 Architectural Coating - 2020

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	17.0063					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**17.2485**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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
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
Worker	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

3.5 Architectural Coating - 2020

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	17.0063					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**17.2485**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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
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
Worker	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

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	0.5544	4.1185	7.6024	0.0299	2.1731	0.0268	2.1999	0.5815	0.0253	0.6068		3,043.2579	3,043.2579	0.1374		3,046.6929
Unmitigated	0.5544	4.1185	7.6024	0.0299	2.1731	0.0268	2.1999	0.5815	0.0253	0.6068		3,043.2579	3,043.2579	0.1374		3,046.6929

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	230.08	43.57	22.45	769,520	769,520
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	230.08	43.57	22.45	769,520	769,520

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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Parking Lot	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

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	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
NaturalGas Unmitigated	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994

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					
General Light Industry	2937.99	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Other Non-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
Parking Lot	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
Total		**0.0317**	**0.2880**	**0.2420**	**1.7300e-003**		**0.0219**	**0.0219**		**0.0219**	**0.0219**		**345.6454**	**345.6454**	**6.6200e-003**	**6.3400e-003**	**347.6994**

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					
General Light Industry	2.93799	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Other Non-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
Parking Lot	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
Total		**0.0317**	**0.2880**	**0.2420**	**1.7300e-003**		**0.0219**	**0.0219**		**0.0219**	**0.0219**		**345.6454**	**345.6454**	**6.6200e-003**	**6.3400e-003**	**347.6994**

6.0 Area Detail

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Unmitigated	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003

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	0.0466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6821					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.4000e-004	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Total	**0.7290**	**3.0000e-005**	**3.5800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.6300e-003**	**7.6300e-003**	**2.0000e-005**		**8.1400e-003**

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	0.0466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6821					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.4000e-004	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Total	**0.7290**	**3.0000e-005**	**3.5800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.6300e-003**	**7.6300e-003**	**2.0000e-005**		**8.1400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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

Malbert St Warehouse, Perris

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	33.01	1000sqft	0.76	33,006.00	0
Other Non-Asphalt Surfaces	0.44	Acre	0.44	19,166.40	0
Parking Lot	1.41	Acre	1.41	61,419.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site area is 113,692 SF (2.61 ac). Proposed: 33,006 SF of light industrial uses (warehousing/retail office). 0.44 ac of landscaping and rention basin area. Balance of the site is parking and asphalted surfaces.

Construction Phase - No demo or site prep. Warehouses will be tilt-up. Construction to begin no earlier than March/April of 2020 and last approximately 6 months.

Off-road Equipment - Due to accelerated construction time, the number of forklifts, generator sets and tractor/loader/backhoes was doubled; however tilt-up warehouse construction takes less equipment to construct.

Off-road Equipment -

Grading - Site will balance. No import/export

Architectural Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Vehicle Trips - No traffic analysis provided/required; therefore, default trip generation used.

Area Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Sequestration - ~28 new trees to be planted on-site

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation - 20% reduction in indoor water use per CalGreen

Waste Mitigation - AB 341 requires a 75% diversion in waste

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	4,835.00	3,685.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_Parking	4835	3685
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	124.00
tblLandUse	LandUseSquareFeet	33,010.00	33,006.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblSequestration	NumberOfNewTrees	0.00	28.00

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					
2020	20.6894	38.4898	36.6592	0.0655	6.6641	2.0855	7.6550	3.3971	1.9724	4.3087	0.0000	6,231.9404	6,231.9404	1.2572	0.0000	6,263.3706
Maximum	**20.6894**	**38.4898**	**36.6592**	**0.0655**	**6.6641**	**2.0855**	**7.6550**	**3.3971**	**1.9724**	**4.3087**	**0.0000**	**6,231.9404**	**6,231.9404**	**1.2572**	**0.0000**	**6,263.3706**

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					
2020	20.6894	38.4898	36.6592	0.0655	2.6672	2.0855	3.6580	1.3430	1.9724	2.2545	0.0000	6,231.9404	6,231.9404	1.2572	0.0000	6,263.3705
Maximum	**20.6894**	**38.4898**	**36.6592**	**0.0655**	**2.6672**	**2.0855**	**3.6580**	**1.3430**	**1.9724**	**2.2545**	**0.0000**	**6,231.9404**	**6,231.9404**	**1.2572**	**0.0000**	**6,263.3705**

	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**	**59.98**	**0.00**	**52.21**	**60.47**	**0.00**	**47.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Energy	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Mobile	0.4760	4.1585	6.4780	0.0276	2.1731	0.0270	2.2001	0.5815	0.0255	0.6070		2,812.3236	2,812.3236	0.1392		2,815.8036
Total	**1.2366**	**4.4466**	**6.7236**	**0.0293**	**2.1731**	**0.0489**	**2.2220**	**0.5815**	**0.0474**	**0.6289**		**3,157.9767**	**3,157.9767**	**0.1458**	**6.3400e-003**	**3,163.5112**

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Energy	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Mobile	0.4760	4.1585	6.4780	0.0276	2.1731	0.0270	2.2001	0.5815	0.0255	0.6070		2,812.3236	2,812.3236	0.1392		2,815.8036
Total	**1.2366**	**4.4466**	**6.7236**	**0.0293**	**2.1731**	**0.0489**	**2.2220**	**0.5815**	**0.0474**	**0.6289**		**3,157.9767**	**3,157.9767**	**0.1458**	**6.3400e-003**	**3,163.5112**

	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	3/1/2020	3/9/2020	5	6	
2	Building Construction	Building Construction	3/10/2020	8/30/2020	5	124	
3	Paving	Paving	8/1/2020	8/14/2020	5	10	
4	Architectural Coating	Architectural Coating	8/15/2020	8/28/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.85

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 49,509; Non-Residential Outdoor: 16,503; Striped Parking Area: 3,685 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	48.00	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

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2020

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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
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
Worker	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

3.2 Grading - 2020

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					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**2.5554**	**0.9902**	**3.5456**	**1.3133**	**0.9110**	**2.2243**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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
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
Worker	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

3.3 Building Construction - 2020

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	3.0961	24.7617	22.3780	0.0366		1.4134	1.4134		1.3526	1.3526		3,396.5526	3,396.5526	0.6564		3,412.9618
Total	**3.0961**	**24.7617**	**22.3780**	**0.0366**		**1.4134**	**1.4134**		**1.3526**	**1.3526**		**3,396.5526**	**3,396.5526**	**0.6564**		**3,412.9618**

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
Vendor	0.0559	1.9447	0.4188	4.7800e-003	0.1217	0.0113	0.1329	0.0350	0.0108	0.0458		503.5813	503.5813	0.0437		504.6730
Worker	0.2392	0.1494	1.5656	4.7600e-003	0.5365	3.2500e-003	0.5398	0.1423	2.9900e-003	0.1453		474.3532	474.3532	0.0118		474.6477
Total	**0.2951**	**2.0941**	**1.9844**	**9.5400e-003**	**0.6582**	**0.0145**	**0.6727**	**0.1773**	**0.0138**	**0.1911**		**977.9344**	**977.9344**	**0.0555**		**979.3208**

3.3 Building Construction - 2020

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	3.0961	24.7617	22.3780	0.0366		1.4134	1.4134		1.3526	1.3526	0.0000	3,396.5526	3,396.5526	0.6564		3,412.9618
Total	**3.0961**	**24.7617**	**22.3780**	**0.0366**		**1.4134**	**1.4134**		**1.3526**	**1.3526**	**0.0000**	**3,396.5526**	**3,396.5526**	**0.6564**		**3,412.9618**

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
Vendor	0.0559	1.9447	0.4188	4.7800e-003	0.1217	0.0113	0.1329	0.0350	0.0108	0.0458		503.5813	503.5813	0.0437		504.6730
Worker	0.2392	0.1494	1.5656	4.7600e-003	0.5365	3.2500e-003	0.5398	0.1423	2.9900e-003	0.1453		474.3532	474.3532	0.0118		474.6477
Total	**0.2951**	**2.0941**	**1.9844**	**9.5400e-003**	**0.6582**	**0.0145**	**0.6727**	**0.1773**	**0.0138**	**0.1911**		**977.9344**	**977.9344**	**0.0555**		**979.3208**

3.4 Paving - 2020

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5241**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

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
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
Worker	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

3.4 Paving - 2020

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5241**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

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
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
Worker	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

3.5 Architectural Coating - 2020

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	17.0063					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**17.2485**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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
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
Worker	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

3.5 Architectural Coating - 2020

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	17.0063					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**17.2485**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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
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
Worker	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

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	0.4760	4.1585	6.4780	0.0276	2.1731	0.0270	2.2001	0.5815	0.0255	0.6070		2,812.3236	2,812.3236	0.1392		2,815.8036
Unmitigated	0.4760	4.1585	6.4780	0.0276	2.1731	0.0270	2.2001	0.5815	0.0255	0.6070		2,812.3236	2,812.3236	0.1392		2,815.8036

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	230.08	43.57	22.45	769,520	769,520
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	230.08	43.57	22.45	769,520	769,520

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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Parking Lot	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

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	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
NaturalGas Unmitigated	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994

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					
General Light Industry	2937.99	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Other Non-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
Parking Lot	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
Total		**0.0317**	**0.2880**	**0.2420**	**1.7300e-003**		**0.0219**	**0.0219**		**0.0219**	**0.0219**		**345.6454**	**345.6454**	**6.6200e-003**	**6.3400e-003**	**347.6994**

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					
General Light Industry	2.93799	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219		345.6454	345.6454	6.6200e-003	6.3400e-003	347.6994
Other Non-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
Parking Lot	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
Total		**0.0317**	**0.2880**	**0.2420**	**1.7300e-003**		**0.0219**	**0.0219**		**0.0219**	**0.0219**		**345.6454**	**345.6454**	**6.6200e-003**	**6.3400e-003**	**347.6994**

6.0 Area Detail

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	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Unmitigated	0.7290	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003

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	0.0466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6821					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.4000e-004	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Total	**0.7290**	**3.0000e-005**	**3.5800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.6300e-003**	**7.6300e-003**	**2.0000e-005**		**8.1400e-003**

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	0.0466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6821					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.4000e-004	3.0000e-005	3.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.6300e-003	7.6300e-003	2.0000e-005		8.1400e-003
Total	**0.7290**	**3.0000e-005**	**3.5800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.6300e-003**	**7.6300e-003**	**2.0000e-005**		**8.1400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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 C

CALEEMOD MODEL ANNUAL EMISSIONS PRINTOUTS

Malbert St Warehouse, Perris

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	33.01	1000sqft	0.76	33,006.00	0
Other Non-Asphalt Surfaces	0.44	Acre	0.44	19,166.40	0
Parking Lot	1.41	Acre	1.41	61,419.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site area is 113,692 SF (2.61 ac). Proposed: 33,006 SF of light industrial uses (warehousing/retail office). 0.44 ac of landscaping and rention basin area. Balance of the site is parking and asphalted surfaces.

Construction Phase - No demo or site prep. Warehouses will be tilt-up. Construction to begin no earlier than March/April of 2020 and last approximately 6 months.

Off-road Equipment - Due to accelerated construction time, the number of forklifts, generator sets and tractor/loader/backhoes was doubled; however tilt-up warehouse construction takes less equipment to construct.

Off-road Equipment -

Grading - Site will balance. No import/export

Architectural Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Vehicle Trips - No traffic analysis provided/required; therefore, default trip generation used.

Area Coating - SCAQMD Rule 1113: Paints limited to 50g/L VOC content applied to buildings. Approximately 3,685 SF of pparking area to be painted/striped.

Sequestration - ~28 new trees to be planted on-site

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation - 20% reduction in indoor water use per CalGreen

Waste Mitigation - AB 341 requires a 75% diversion in waste

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	4,835.00	3,685.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_Parking	4835	3685
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	124.00
tblLandUse	LandUseSquareFeet	33,010.00	33,006.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblSequestration	NumberOfNewTrees	0.00	28.00

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					
2020	0.3093	1.7982	1.6171	3.0600e-003	0.0615	0.0953	0.1569	0.0214	0.0910	0.1124	0.0000	263.2615	263.2615	0.0443	0.0000	264.3682
Maximum	**0.3093**	**1.7982**	**1.6171**	**3.0600e-003**	**0.0615**	**0.0953**	**0.1569**	**0.0214**	**0.0910**	**0.1124**	**0.0000**	**263.2615**	**263.2615**	**0.0443**	**0.0000**	**264.3682**

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					
2020	0.3093	1.7982	1.6171	3.0600e-003	0.0495	0.0953	0.1449	0.0152	0.0910	0.1063	0.0000	263.2612	263.2612	0.0443	0.0000	264.3679
Maximum	**0.3093**	**1.7982**	**1.6171**	**3.0600e-003**	**0.0495**	**0.0953**	**0.1449**	**0.0152**	**0.0910**	**0.1063**	**0.0000**	**263.2612**	**263.2612**	**0.0443**	**0.0000**	**264.3679**

	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**	**19.49**	**0.00**	**7.64**	**28.85**	**0.00**	**5.48**	**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	3-1-2020	5-31-2020	0.9718	0.9718
2	6-1-2020	8-31-2020	1.1445	1.1445
		Highest	1.1445	1.1445

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	0.1330	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004
Energy	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	170.8165	170.8165	5.7900e-003	2.0200e-003	171.5629
Mobile	0.0656	0.5812	0.9221	3.8700e-003	0.2938	3.6900e-003	0.2975	0.0787	3.4800e-003	0.0822	0.0000	358.1275	358.1275	0.0170	0.0000	358.5521
Waste						0.0000	0.0000		0.0000	0.0000	8.3084	0.0000	8.3084	0.4910	0.0000	20.5838
Water						0.0000	0.0000		0.0000	0.0000	2.4218	31.6699	34.0917	0.2501	6.1400e-003	42.1737
Total	**0.2044**	**0.6337**	**0.9667**	**4.1900e-003**	**0.2938**	**7.6900e-003**	**0.3015**	**0.0787**	**7.4800e-003**	**0.0862**	**10.7302**	**560.6147**	**571.3449**	**0.7638**	**8.1600e-003**	**592.8734**

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	0.1330	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004
Energy	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	170.8165	170.8165	5.7900e-003	2.0200e-003	171.5629
Mobile	0.0656	0.5812	0.9221	3.8700e-003	0.2938	3.6900e-003	0.2975	0.0787	3.4800e-003	0.0822	0.0000	358.1275	358.1275	0.0170	0.0000	358.5521
Waste						0.0000	0.0000		0.0000	0.0000	2.0771	0.0000	2.0771	0.1228	0.0000	5.1459
Water						0.0000	0.0000		0.0000	0.0000	1.9374	25.3359	27.2733	0.2000	4.9200e-003	33.7390
Total	**0.2044**	**0.6337**	**0.9667**	**4.1900e-003**	**0.2938**	**7.6900e-003**	**0.3015**	**0.0787**	**7.4800e-003**	**0.0862**	**4.0145**	**554.2807**	**558.2953**	**0.3456**	**6.9400e-003**	**569.0009**

	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**	**62.59**	**1.13**	**2.28**	**54.76**	**14.95**	**4.03**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	19.8240
Total	**19.8240**

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	3/1/2020	3/9/2020	5	6	
2	Building Construction	Building Construction	3/10/2020	8/30/2020	5	124	
3	Paving	Paving	8/1/2020	8/14/2020	5	10	
4	Architectural Coating	Architectural Coating	8/15/2020	8/28/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.85

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 49,509; Non-Residential Outdoor: 16,503; Striped Parking Area: 3,685 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	48.00	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

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2020

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

3.2 Grading - 2020

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2759**	**0.2759**	**1.0000e-005**	**0.0000**	**0.2761**

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					7.6700e-003	0.0000	7.6700e-003	3.9400e-003	0.0000	3.9400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**7.6700e-003**	**2.9700e-003**	**0.0106**	**3.9400e-003**	**2.7300e-003**	**6.6700e-003**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

3.2 Grading - 2020

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2759**	**0.2759**	**1.0000e-005**	**0.0000**	**0.2761**

3.3 Building Construction - 2020

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	0.1920	1.5352	1.3874	2.2700e-003		0.0876	0.0876		0.0839	0.0839	0.0000	191.0406	191.0406	0.0369	0.0000	191.9636
Total	**0.1920**	**1.5352**	**1.3874**	**2.2700e-003**		**0.0876**	**0.0876**		**0.0839**	**0.0839**	**0.0000**	**191.0406**	**191.0406**	**0.0369**	**0.0000**	**191.9636**

3.3 Building Construction - 2020

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	3.3500e-003	0.1225	0.0240	3.0000e-004	7.4400e-003	6.9000e-004	8.1300e-003	2.1500e-003	6.6000e-004	2.8100e-003	0.0000	28.9656	28.9656	2.3200e-003	0.0000	29.0235
Worker	0.0137	9.5800e-003	0.1023	3.0000e-004	0.0327	2.0000e-004	0.0329	8.6900e-003	1.9000e-004	8.8700e-003	0.0000	27.3671	27.3671	6.9000e-004	0.0000	27.3842
Total	**0.0170**	**0.1321**	**0.1263**	**6.0000e-004**	**0.0402**	**8.9000e-004**	**0.0410**	**0.0108**	**8.5000e-004**	**0.0117**	**0.0000**	**56.3326**	**56.3326**	**3.0100e-003**	**0.0000**	**56.4077**

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	0.1920	1.5352	1.3874	2.2700e-003		0.0876	0.0876		0.0839	0.0839	0.0000	191.0404	191.0404	0.0369	0.0000	191.9634
Total	**0.1920**	**1.5352**	**1.3874**	**2.2700e-003**		**0.0876**	**0.0876**		**0.0839**	**0.0839**	**0.0000**	**191.0404**	**191.0404**	**0.0369**	**0.0000**	**191.9634**

3.3 Building Construction - 2020

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	3.3500e-003	0.1225	0.0240	3.0000e-004	7.4400e-003	6.9000e-004	8.1300e-003	2.1500e-003	6.6000e-004	2.8100e-003	0.0000	28.9656	28.9656	2.3200e-003	0.0000	29.0235
Worker	0.0137	9.5800e-003	0.1023	3.0000e-004	0.0327	2.0000e-004	0.0329	8.6900e-003	1.9000e-004	8.8700e-003	0.0000	27.3671	27.3671	6.9000e-004	0.0000	27.3842
Total	**0.0170**	**0.1321**	**0.1263**	**6.0000e-004**	**0.0402**	**8.9000e-004**	**0.0410**	**0.0108**	**8.5000e-004**	**0.0117**	**0.0000**	**56.3326**	**56.3326**	**3.0100e-003**	**0.0000**	**56.4077**

3.4 Paving - 2020

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.6200e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.4 Paving - 2020

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	3.4000e-004	2.4000e-004	2.5800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6897	0.6897	2.0000e-005	0.0000	0.6901
Total	**3.4000e-004**	**2.4000e-004**	**2.5800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6897**	**0.6897**	**2.0000e-005**	**0.0000**	**0.6901**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.6200e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.4 Paving - 2020

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	3.4000e-004	2.4000e-004	2.5800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6897	0.6897	2.0000e-005	0.0000	0.6901
Total	**3.4000e-004**	**2.4000e-004**	**2.5800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6897**	**0.6897**	**2.0000e-005**	**0.0000**	**0.6901**

3.5 Architectural Coating - 2020

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	0.0850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0862**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.5 Architectural Coating - 2020

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	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601
Total	**2.3000e-004**	**1.6000e-004**	**1.7200e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4598**	**0.4598**	**1.0000e-005**	**0.0000**	**0.4601**

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	0.0850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0862**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.5 Architectural Coating - 2020

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	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601
Total	**2.3000e-004**	**1.6000e-004**	**1.7200e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4598**	**0.4598**	**1.0000e-005**	**0.0000**	**0.4601**

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	tons/yr										MT/yr					
Mitigated	0.0656	0.5812	0.9221	3.8700e-003	0.2938	3.6900e-003	0.2975	0.0787	3.4800e-003	0.0822	0.0000	358.1275	358.1275	0.0170	0.0000	358.5521
Unmitigated	0.0656	0.5812	0.9221	3.8700e-003	0.2938	3.6900e-003	0.2975	0.0787	3.4800e-003	0.0822	0.0000	358.1275	358.1275	0.0170	0.0000	358.5521

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	230.08	43.57	22.45	769,520	769,520
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	230.08	43.57	22.45	769,520	769,520

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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Parking Lot	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	113.5910	113.5910	4.6900e-003	9.7000e-004	113.9974
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	113.5910	113.5910	4.6900e-003	9.7000e-004	113.9974
NaturalGas Mitigated	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	57.2255	57.2255	1.1000e-003	1.0500e-003	57.5655
NaturalGas Unmitigated	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	57.2255	57.2255	1.1000e-003	1.0500e-003	57.5655

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					
General Light Industry	1.07236e+006	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	57.2255	57.2255	1.1000e-003	1.0500e-003	57.5655
Other Non-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
Parking Lot	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
Total		**5.7800e-003**	**0.0526**	**0.0442**	**3.2000e-004**		**4.0000e-003**	**4.0000e-003**		**4.0000e-003**	**4.0000e-003**	**0.0000**	**57.2255**	**57.2255**	**1.1000e-003**	**1.0500e-003**	**57.5655**

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					
General Light Industry	1.07236e+006	5.7800e-003	0.0526	0.0442	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	57.2255	57.2255	1.1000e-003	1.0500e-003	57.5655
Other Non-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
Parking Lot	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
Total		**5.7800e-003**	**0.0526**	**0.0442**	**3.2000e-004**		**4.0000e-003**	**4.0000e-003**		**4.0000e-003**	**4.0000e-003**	**0.0000**	**57.2255**	**57.2255**	**1.1000e-003**	**1.0500e-003**	**57.5655**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	335011	106.7417	4.4100e-003	9.1000e-004	107.1235
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21496.9	6.8494	2.8000e-004	6.0000e-005	6.8739
Total		**113.5910**	**4.6900e-003**	**9.7000e-004**	**113.9974**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	335011	106.7417	4.4100e-003	9.1000e-004	107.1235
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21496.9	6.8494	2.8000e-004	6.0000e-005	6.8739
Total		**113.5910**	**4.6900e-003**	**9.7000e-004**	**113.9974**

6.0 Area Detail

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	0.1330	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004
Unmitigated	0.1330	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004

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	8.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1245					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004
Total	**0.1330**	**0.0000**	**4.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**0.0000**	**9.2000e-004**

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	8.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1245					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.7000e-004	8.7000e-004	0.0000	0.0000	9.2000e-004
Total	**0.1330**	**0.0000**	**4.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**0.0000**	**9.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.2733	0.2000	4.9200e-003	33.7390
Unmitigated	34.0917	0.2501	6.1400e-003	42.1737

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	7.63356 / 0	34.0917	0.2501	6.1400e-003	42.1737
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**34.0917**	**0.2501**	**6.1400e-003**	**42.1737**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	6.10685 / 0	27.2733	0.2000	4.9200e-003	33.7390
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.2733**	**0.2000**	**4.9200e-003**	**33.7390**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.0771	0.1228	0.0000	5.1459
Unmitigated	8.3084	0.4910	0.0000	20.5838

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	40.93	8.3084	0.4910	0.0000	20.5838
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.3084**	**0.4910**	**0.0000**	**20.5838**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.2325	2.0771	0.1228	0.0000	5.1459
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.0771**	**0.1228**	**0.0000**	**5.1459**

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

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	19.8240	0.0000	0.0000	19.8240

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	28	19.8240	0.0000	0.0000	19.8240
Total		**19.8240**	**0.0000**	**0.0000**	**19.8240**

APPENDIX B
Biological Constraints and Burrowing Owl Survey

LOHSTROH BIOLOGICAL CONSULTING
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August 23, 2019

Ms. Gulsum Rustemoglu
7220 Trade St. Suite 207B
San Diego, CA 92121

Subject: **Biological Constraints Assessment and Burrowing Owl Survey Results for 24 Malbert Street in Perris, California (APN 330-040-062)**

Dear Ms. Rustemoglu:

Lohstroh Biological Consulting (LBC) conducted a biological constraints assessment and focused burrowing owl (*Athene cunicularia*, BUOW) survey of a 2.58-acre parcel at 24 Malbert Street in Perris, California (APN 330-040-062) in July 2019. The parcel is located approximately one mile south of the Perris city center and 0.7 miles west of the Perris Valley Airport in Western Riverside County (Figure 1). The proposed project includes development of a 33,000 square foot office building and warehouse, including a medical marijuana dispensary. The entire parcel would be developed as part of the proposed project, including installation of paved driveways, parking, and ornamental plantings.

METHODS

Field Assessment Methods

The purpose of the field assessment was to determine the key biological constraints associated with the site for development planning purposes. This assessment was not an exhaustive biological survey of the site and took place during July 2019 after many plant species are in senescence. The key biological constraints observed at the site are summarized in this report.

Prior to conducting the field assessment, a literature search of the site was performed, including review of the California Natural Diversity Database (CNDDB), the National Wetlands Inventory (NWI), U.S. Geological Survey topographic maps, and recent Google satellite imagery. In addition, LBC queried the Western Riverside County Regional Conservation Authority Information App to determine the requirements of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). The report resulting from this query is provided in Appendix A. The MSHCP summary report revealed that the parcel is within a BUOW survey area (MSHCP 2019b).

LBC Principal Biologist Brian Lohstroh conducted the biological constraints assessment of the site. The project site and areas immediately adjacent to the site were surveyed on foot, and plant and wildlife species observed at the site were documented. Habitat for special status species, determined to be potentially present based on the literature search, was assessed in addition to potential riparian/riverine resources. Aside from the burrowing owl surveys, no other focused species surveys were conducted as part of the field assessment.

Burrowing Owl Survey Methods

The BUOW surveys were conducted by Brian Lohstroh, with assistance from environmental intern Delaney Coyle, and followed the survey instructions for the MSHCP area (RCA 2005). A site assessment for BUOW was conducted on July 19, 2019 followed by surveys on July 19, 22, 25 and 26, 2019. Surveys were completed in the morning within two hours after sunrise by walking 10-meter transects within the parcel and 30-meter transects within the 150-meter buffer zone around the site (excluding developed areas). Prior to initiating transects, the site and buffer zone were scanned with a spotting scope and binoculars. Burrows detected with the potential to support BUOW were mapped with a handheld GPS unit accurate to 3 meters and examined for BUOW sign.

RESULTS AND EXISTING CONDITIONS

Field Assessment Results

Review of satellite photos indicate the site has undergone a form of mechanical disturbance, with furrows and vehicle tracks present throughout the area. The site may have been used for agricultural purposes in the past, based on review of historical satellite photos and given the evidence of agricultural land use on some of the adjacent parcels. The soil type present onsite is Exeter sandy loam, deep, 0 to 2 percent slopes (NRCS 2019), a well-drained constituent of alluvial fans derived from granite parent material. The primary vegetation community present on the site is disturbed habitat, dominated by ruderal species such as stinknet (*Oncosiphon piluliferum*), vinegarweed (*Trichostema lanceolatum*), common fiddleneck (*Amsinckia intermedia*), prickly lettuce (*Lactuca serriola*), Russian thistle (*Salsola tragus*), short-pod mustard (*Hirschfeldia incana*), paniculate tarplant (*Deinandra paniculata*) and turkey mullein (*Croton setiger*).

Small areas of ornamental plantings are present within the parcel in the northwest and southeast corners, encroaching from the adjacent parcels. Runoff from the adjacent parcel to the east accumulates on the site and has resulted in the establishment of a small area of southern willow scrub dominated by black willows (*Salix gooddingii*), with subdominant arrow weed (*Pluchea sericea*), and tamarisk (*Tamarix ramosissima*) individuals in a depression near the central portion of the parcel. Dead cattails (*Typha* sp.) were also present in this area during the field assessment. Review of historical satellite photos indicate this area appears to be an artificially created, runoff-fed habitat because there is a clear trail of green vegetation that initiates from the adjacent developed site (see Photo 1). It also appears to be recently created, with the area first visible on satellite imagery in February 2018 and given the age of the vegetation onsite. A map of the vegetation communities onsite and within a 100-foot buffer is provided in Figure 2, and acreage of each vegetation community present within the parcel is provided in Table 1.

Table 1. Vegetation Community Acreages

Vegetation Community	Acres
Disturbed Habitat	2.55
Disturbed Southern Willow Scrub (Artificially Created)	0.02
Ornamental	0.01
Total Acres Onsite	**2.58**

No special status plants were observed on the site and a list of species observed is provided in Attachment B. Given the time of the year the assessment was conducted, most plant species present within the site were in senescence and many would not be readily identifiable, including most rare plants. The results of the CNDDB search is provided as Figure 3, with no rare species found in the immediate site vicinity. No special status plant species are expected to occur on the site due to its disturbed condition.

Wildlife species commonly observed on the site during the surveys included harvester ants (*Pogonomyrmex* sp.), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), Eurasian collared dove (*Streptopelia decaocto*), American kestrel (*Falco sparverius*), and California ground squirrel (*Otospermophilus beecheyi*). No special status wildlife species were observed on the site and a list of species observed is provided in Attachment C. The results of the CNDDB search (2019) is provided as Figure 3, with no rare species found in the immediate site vicinity. Aside from being potential habitat for BUOW, no special status wildlife species are expected to occur on the site due to its disturbed condition.

Burrowing Owl Survey Results

No BUOW or BUOW sign was detected during the focused surveys. Numerous California ground squirrel burrows were observed on the site and within the 150-meter buffer zone (Figure 2). Observations included individual burrows, burrow complexes and debris piles supporting numerous burrows. Some of these locations were actively occupied by the ground squirrels. Site photographs, including photographs of some representative burrows, are provided in Attachment D. Survey conditions are provided in Table 2.

Table 2. Burrowing Owl Survey Dates and Conditions

Date	Time Onsite		Temp (ºF)	Sky Cover (%)	Wind (MPH)	Personnel
19-Jul-2019	Start	0620	59	10	0-1	B. Lohstroh
	End	0745	61	10	0-1	
22-Jul-2019	Start	0645	66	30	0-1	B. Lohstroh
	End	0750	72	40	0-1	
25-Jul-2019	Start	0645	77	95	0-1	B. Lohstroh, D. Coyle
	End	0750	77	90	0-1	
26-Jul-2019	Start	0645	72	0	0-1	B. Lohstroh
	End	0750	76	0	0-1	

Given the numerous burrows present on and adjacent to the site, debris piles and other suitable perching locations, as well as the relatively low-growing, herbaceous species-dominated habitat, the site has the potential to support BUOW. The area received approximately 16.2 inches of rainfall during the 2018-2019 wet season to date, or 133% of the 30-year average rainfall for the area (NWS 2019). This indicates that there should be an abundance of BUOW prey in the area.

Riparian/Riverine Resource Assessment Results

As part of the field assessment, the site was evaluated for the potential presence of jurisdictional waters. As determined by review of the NWI, National Hydrogeography Database, and topographic maps there are no known wetlands, jurisdictional features, or blue lines mapped within the site vicinity. The nearest known feature is the San Jacinto River, which exists within approximately one mile of the site at its closest approach, on the far side of the Perris Valley Airport.

During the field assessment, it was observed that some young black willows and other hydrophytes have become established in a minor depression near the central portion of the site. As mentioned above, these species have become artificially established due to runoff accumulation from the adjacent developed parcel to the east of the site. Based on review of recent historical satellite photos, this also appears to be a recent condition, with the vegetation change initially visible in February 2018. There are no clear indications that runoff from this area is conveyed offsite through an existing drainage or storm drain. For this reason, the feature is not considered a federal Waters of the United States subject to the jurisdiction of the Army Corps of Engineers. However, given that potential riparian habitat is establishing, this area may be considered a Waters of the State of California, as regulated by the California Department of Fish and Wildlife (CDFW).

It should be noted that artificially created wetlands are not subject to MSHCP requirements and this appears to be the case for this feature. The patch of willows does not function as traditional riparian habitat because no riparian-associated wildlife species were observed in the vicinity. The habitat is not considered suitable for special status species such as least Bell's vireo (*Vireo bellii pusillus*).

One additional significant feature was noted during the field assessment of the area surrounding the project site. A depression is present on the vacant parcel to the west that supports plant species indicative of vernal pools. The feature is approximately 3,700 square feet (0.085 acres) in size, and is approximately 35 feet from the western boundary of the project parcel. Woolly marbles (*Psilocarphus brevissimus*), and hairy water clover (*Marsilea vestita* ssp. *vestita*) are both prevalent within the boundaries of the depression and the feature is potential habitat for fairy shrimp, including federally listed species. This feature is considered disturbed because of the evidence of discing throughout the area. In addition, it appears that the feature receives water from runoff that flows from the developed site to the west.

MSHCP CONSISTENCY

The MSHCP is a comprehensive, multi-jurisdictional effort that includes portions of Western Riverside County and fourteen cities to conserve listed and sensitive species and their habitats. The approved MSHCP was designed to contribute to the economic viability of the region by providing landowners, developers and those who build public infrastructure with certainty, a streamlined regulatory process and identified project mitigation.

The project does not exist within any criteria area cells and is not subject to special requirements associated with those areas. As determined by the report generator, the site is within a Burrowing Owl Survey Area, with no other species survey requirements (Attachment A). The nearest criteria cells to the project site are associated with the San Jacinto River, with cell 3377 approximately 0.33 miles to the southeast. The site is not adjacent to any MSHCP conservation areas and therefore is not subject to the

urban/wildlands interface guidelines. However, efforts should be made to avoid impacts to the disturbed vernal pool feature near the western boundary of the site.

The project would trigger MSHCP 'Local Development Mitigation Fees.' Based on the current schedule for commercial development, fees are $7,382/acre (MSHCP 2019a).

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on the field assessment and records search associated with this project.

- The site supports suitable BUOW habitat and BUOW surveys yielded negative results. Pre-construction BUOW clearance surveys will be required within 30 days prior to ground disturbance at the site.

- The disturbed willow scrub habitat onsite appears artificially created and should not be subject to MSHCP requirements. However, further investigation, including a formal wetland delineation, may be required.

- Under the Federal Migratory Bird Treaty Act and the California Fish and Game Code (§3503), it is unlawful for the parcel development to have any direct impacts to raptors and/or any native/migratory birds. Removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (January 31 to September 15), or the parcel must have a pre-construction nesting bird survey performed by a qualified biologist prior to ground disturbing activities. Any active nests discovered would require a construction avoidance buffer and would be left intact until the young have fledged or the nest is confirmed to be no longer active.

- The project would require payment of MSHCP 'Local Development Mitigation Fees.' Based on the current schedule for commercial development, fees are $7,382/acre.

Please contact me at (858) 750-9300 if you have any questions.

Sincerely,

Brian Lohstroh
Principal Biologist
Lohstroh Biological Consulting
brian@lohstrohbio.com

Attachments: A: MSHCP Report for APN 330-040-062
B: Plant Species Detected
C: Wildlife Species Detected
D: Site Photographs

Citations

Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., Rosatti, T.J. (eds). 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley, California. 1400 pp.

CDFW. 2019. California Department of Fish and Wildlife Natural Diversity Data Base (CNDDB) Special Animals List – Electronic Format.

MSHCP. 2019a. Local Development Mitigation Fee Schedule for Fiscal Year 2020. http://www.wrc-rca.org/wp-content/uploads/FY2020-MSHCP-Fees.pdf

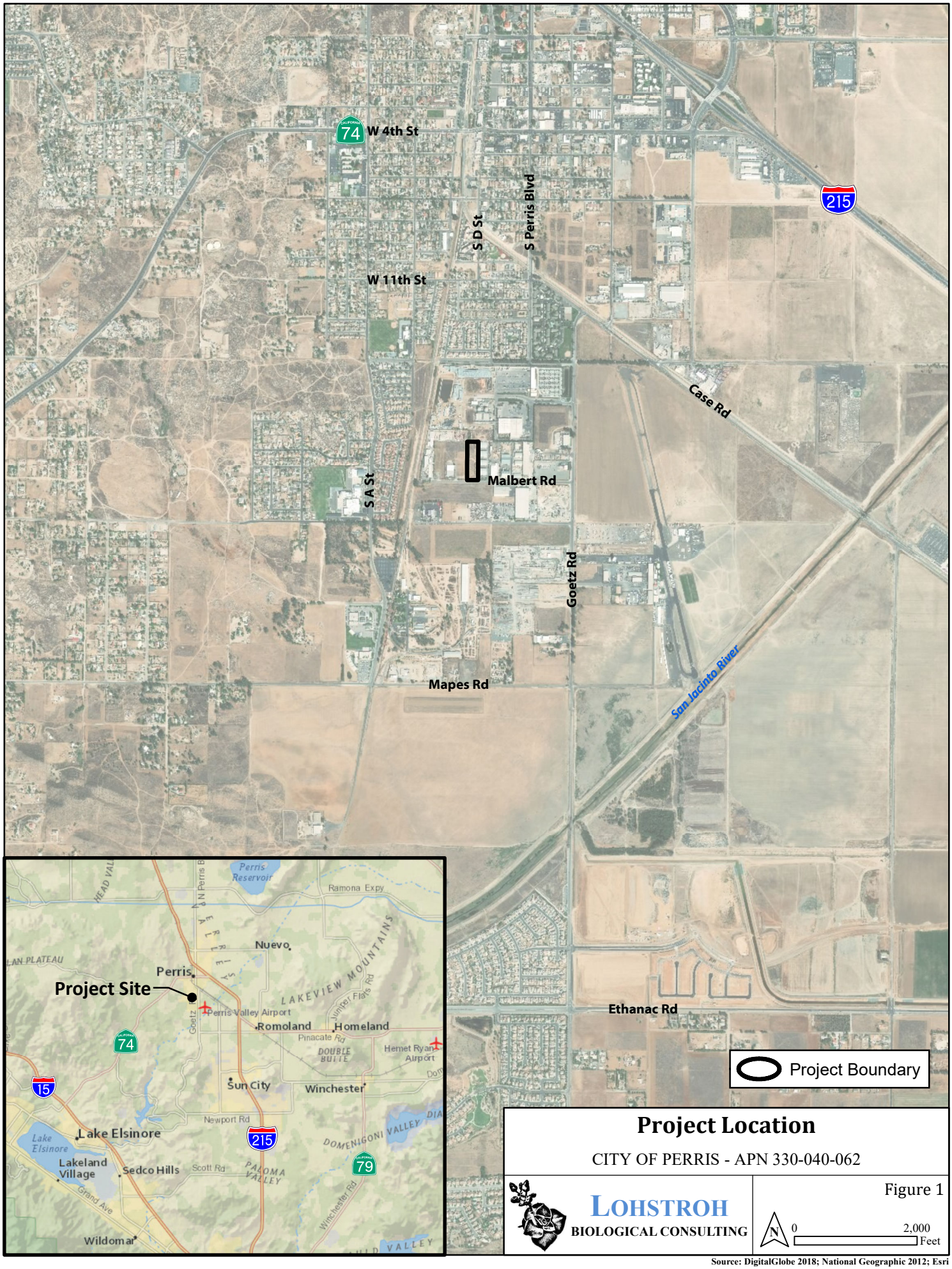
MSHCP. 2019b. RCA MSHCP Information App. https://www.wrc-rca.org/. Accessed 5/21/19.

National Weather Service (NWS). 2019. Monthly Precipitation Summary Water Year 2019. Elsinore. https://www.cnrfc.noaa.gov/monthly_precip.php

National Wetlands Inventory (NWI). 2019. USFWS. Wetlands Mapper online tool. https://www.fws.gov/wetlands/data/Mapper.html

Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey for 24 Malbert Street, Perris CA. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed 8/22/19.

Regional Conservation Authority (RCA). 2005. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Area. Staff Report. Agenda Item 7.2. November 7.



Project Location

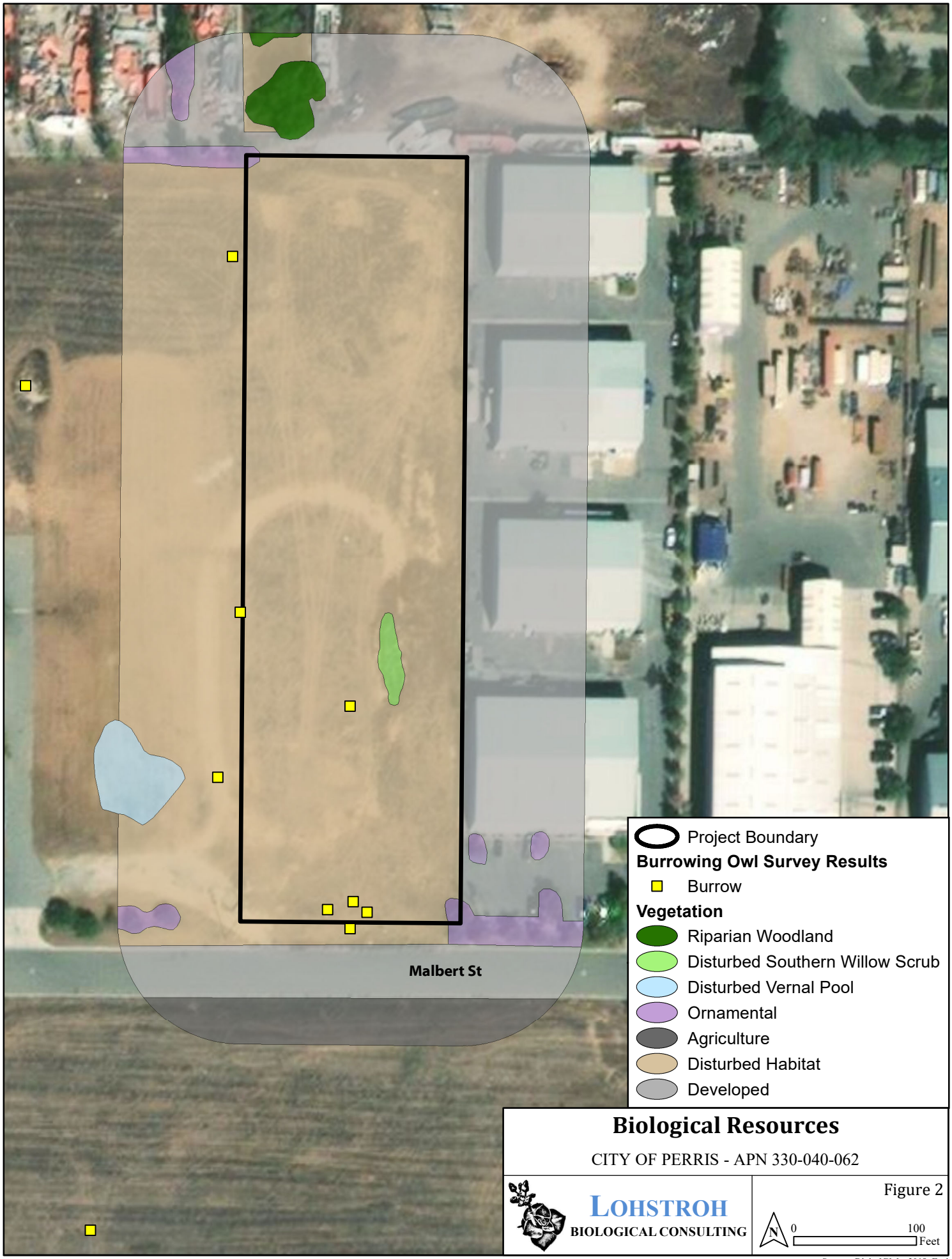
CITY OF PERRIS - APN 330-040-062

LOHSTROH
BIOLOGICAL CONSULTING

Figure 1

N 0 2,000 Feet

Source: DigitalGlobe 2018; National Geographic 2012; Esri



Biological Resources

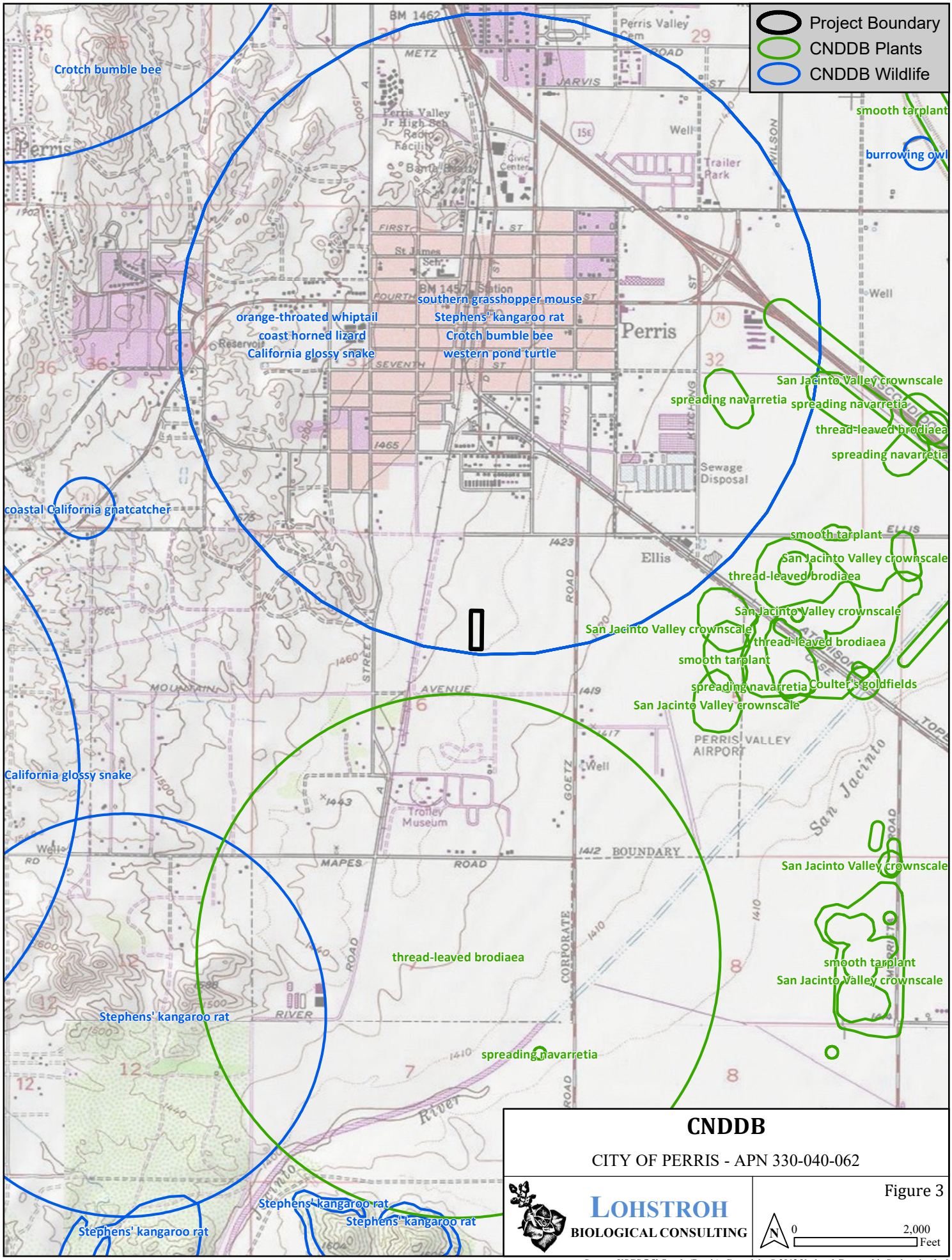
CITY OF PERRIS - APN 330-040-062

LOHSTROH BIOLOGICAL CONSULTING

Figure 2

N 0 100 Feet

Source: DigitalGlobe 2018, Esri



Source: USGS 7.5' Quads (Perris); Copyright:© 2013 National Geographic Society, i-cubed

Attachment A
MSHCP Report
24 Malbert St. Perris, CA

Multiple Species Habitat Conservation Plan (MSHCP) Report

Area of Interest (AOI) Information

May 21 2019 14:22:35 Pacific Daylight Time

Summary

Name	Count	Area(acres)	Length(mi)
MSHCP Information	1	N/A	N/A

MSHCP Information

#	APN	Address Number	Street Name	City	Zip Code
1	330040062	0	*No Data*	*No Data*	0

#	Acre	Rough Step Number	Habitat Management Unit	Area Plan	Area Plan Subunit
1	2.6099999	7	SAN JACINTO	*No Data*	*No Data*

#	Criteria Cell Group	Criteria Cell Number	Amphibian Survey Area	Burrowing Owl Survey Area	Mammal Survey Area
1	*No Data*	*No Data*	Not in an amphibian survey area	Burrowing Owl	Not in a mammal survey area

#	Narrow Endemic Plant Survey Area 1	Narrow Endemic Plant Survey Area 2 (if any)	Criteria Species Survey Area 1	Criteria Species Survey Area 2 (if any)	Area(acres)
1	Not in a narrow endemic plant survey area	*No Data*	Not in a criteria area species survey area	*No Data*	N/A

Attachment B
Plant Species Detected
24 Malbert St. Perris, CA
July 2019

Scientific name	**Common Name**
Dicots	
Amaranthaceae - Amarath Family	
Amaranthus albus	White Tumbleweed
Asteraceae- Sunflower Family	
Deinandra paniculata	Paniculate Tarplant
Dimorphotheca sp.	African Daisy
Dittrichia graveolens	Stinkwort
Erigeron canadensis	Horseweed
Lactuca serriola	Prickly Lettuce
Oncosiphon piluliferum	Stinknet
Sonchus asper subsp. asper	Prickly Sow-Thistle
Stephanomeria diegensis	San Diego Wreath-Plant
Pluchea sericea	Arrow Weed
Boraginaceae - Borage Family	
Amsinckia intermedia	Common Fiddleneck
Cryptantha intermedia	Nievitas Cryptantha
Brassicaceae - Mustard Family	
Brassica tournefortii	Sahara Mustard
Hirschfeldia incana	Short-Pod Mustard
Chenopodiaceae - Goosefoot Family	
Chenopodium murale	Nettle-Leaf Goosefoot
Salsola tragus	Russian-Thistle
Euphorbiaceae - Spurge Family	
Croton setiger	Turkey Mullien
Fabaceae - Legume Family	
Lupinus sp.	Lupine
Lamiaceae- Mint Family	
Trichostema lanceolatum	Vinegarweed
Salicaceae - Willow Family	
Salix gooddingii	Black Willow
Solanaceae - Nightshade Family	
Nicotiana glauca	Tree Tobacco
Tamaricaceae - Tamarisk Family	
Tamarix ramosissima	Tamarisk
Zygophyllaceae - Caltrop Family	
Tribulus terrestris	Puncture Vine
Monocots	
Cyperaceae - Sedge Family	
Cyperus eragrostis	Tall Flatsedge
Poaceae - Grass Family	
Avena sp.	Wild Oat
Bromus rubens	Red Brome
Typhaceae Cattail Family	
Typha sp.	Cattail

Nomencalture: Baldwin et. al. 2012

Attachment C
Wildlife Species Detected
24 Malbert St. Perris, CA
July 2019

Common Name	***Scientific Name***
Insects and Spiders	
Harvester Ant	*Pogonomyrmex* sp.
Common White	*Pontia protodice*
Marine Blue	*Leptotes marina*
White Checkered Skipper	*Pyrgus albescens*
Black Widow	*Latrodectus hesperus*
Birds	
Rock Pigeon	*Columba livia*
Eurasian Collared-Dove*	*Streptopelia decaocto*
Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Killdeer	*Charadrius vociferus*
American Kestrel	*Falco sparverius*
Black Phoebe	*Sayornis nigricans*
Cassin's Kingbird	*Tyrannus vociferans*
American Crow	*Corvus brachyrhynchos*
Northern Mockingbird	*Mimus polyglottos*
House Sparrow*	*Passer domesticus*
House Finch	*Haemorhous mexicanus*
California Towhee	*Melozone crissalis*
Hooded Oriole	*Icterus cucullatus*
Mammals	
California Ground Squirrel	*Otospermophilus beecheyi*
Desert Cottontail	*Sylvilagus audubonii*

*Introduced Species

Attachment D
Site Photographs
24 Malbert St. Perris, CA
July 2019

Photo 1: Google Satellite image of site on 2/19/18, showing southern willow scrub vegetation fed by runoff from adjacent site to the east. Evidence of disturbance is also visible throughout the parcel. Similar runoff patches are visible at left.

Photo 2: View facing southwest of the disturbed southern willow scrub onsite. Young black willows and tamarisk are visible at center.

Attachment D
Site Photographs
24 Malbert St. Perris, CA
July 2019

Photo 3: View facing east showing the southern portion of the disturbed southern willow scrub with black willow and dead cattails visible at center. Buildings from the adjacent parcel are visible in the background.

Photo 4: Site overview facing north from near southern boundary of site. Disturbed vegetation dominated by stinknet, prickly lettuce, vinegarweed and paniculate tarplant is visible in the foreground.

Attachment D
Site Photographs
24 Malbert St. Perris, CA
July 2019

Photo 5: Rodent burrow complex present on the site, with no evidence of BUOW sign. Stinknet and Russian thistle are also visible in photo.

Photo 6: View facing northeast of California ground squirrel burrow complex found within 150-meter buffer zone. Ground squirrels were observed actively using these burrows. This site is also highly disturbed, with evidence of discing.

Attachment D
Site Photographs
24 Malbert St. Perris, CA
July 2019

Photo 7: View facing north of California ground squirrels inhabiting a debris pile adjacent to the project site. No BUOW sign was observed in this area.

Photo 8: View facing north of disturbed vernal pool that exists near the site boundary. Woolly marbles are visible throughout the surface of the dry pool.

APPENDIX C
Cultural Resources Assessment Report

CULTURAL RESOURCES PHASE I LETTER REPORT

PERRIS REGIONAL COMPASSIONATE CENTER PERRIS, CALIFORNIA (APN 330-040-062)

Prepared for:

City of Perris
Development Services Department
Planning Division
135 North D Street
Perris, California 92570-2200

Prepared by:

GEPermit

Sandra Pentney, MA, RPA, ENV SP

16885 W. Bernardo Dr. Suite 105
San Diego, CA 92127
P 858-649-6077 F 858-300-5241

October 2019

Introduction

This study was undertaken as part of a California environmental Quality Act (CEQA) review for a proposed development. GEPermit was contacted by Colorado West Construction, Inc. to provide CEQA compliance studies as requested by the City of Perris Development Services Department, Planning Division (City). The 2.61-acre development would consist of construction of three (3) warehouse and office buildings totaling 33,000 square feet on one parcel (APN 330-040-062). This project is subject to PRC Sections 21000-21189.3 and CEQA Guidelines Title 14 CCR Section 15000, which requires evaluation of the potential for environmental impacts, including effects to historical resources.

Project Location

The proposed project is on Malbert Street, Perris, California in the southwest ¼ of northeast ¼ of Section 6, township 5 South, Range 3 West (San Bernardino baseline and meridian) on the Perris, California 7.5-minute United States Geological Survey Topographic map. It is south of the main center of the City and on the north side of Malbert Street.

Setting

The proposed project is located within the Perris Valley in between the Lakeview Mountains and the Temescal Mountains. The Project is located within the southern portion of the San Jacinto Valley section of the Peninsular Range physiographic province of southern California, which encompasses all western Riverside County. It is situated on the southeastern slopes of the east-dipping Perris Plain or "Perris Erosional Surface" (Rogers, 1965). The Perris Plain is north of the northwestern-trending Elsinore Fault Zone and southwest of the San Jacinto Fault Zone. Murrieta and Paloma Valley are west of the base of the San Jacinto Mountains and west of French Valley along the eastern edge of the Elsinore Fault Zone (Kennedy, 1977).

The valley areas of what is now Riverside County are rich in Native American Prehistory. The Mediterranean climate combined with the valley floor abutting many different mountainous features provides an ecosystem rich in resources for food and shelter to humans during the Prehistoric (Morrato, 1984). The area is home to the current-day Luiseño tribes of southern California.

The general area was mainly used as pasture land until the 1880's when the City of Perris was founded to serve the incoming Southern California Railroad. The City was incorporated in 1911, and was named after Fred T. Perris, who was the surveyor for the railroad.

Ethnographically, the project is in the Luiseño territory. Neighboring groups are the Kumeyaay to the south, Cahuilla to the east, Serrano to the northeast, and Gabrieleno/Tongva to the northwest. The southern boundary of Luiseño territory extends from Agua Hedionda Creek to

the southern slope of Palomar Mountain above the valley of San Jose. The northern boundary extends from Aliso Creek to Santiago Peak and the eastern side of the Elsinore Fault Valley. The eastern boundary extends from the southern slope above the valley of San Jose to the eastern side of Palomar Mountain to the eastern side of the Elsinore Fault Valley (Kroeber, 1976).

Bean and Shipek (1978) state that village groupings were located in valley bottoms, along streams or coastal strands near mountain ranges. The village areas specifically were located in diverse ecological zones near good water supplies in defensive locations.

Two main settlement patterns for the Luiseño have been discussed over the years. One settlement pattern theory states that the Luiseño lived in a single locus year-round, year after year (White, 1963). These village sites were the focal point of economic and social interactions. Individuals or small groups would change locations periodically for short periods of time; however, they always returned to their home village to store food, for religious ceremonies, and for social requirements (Oxendine, 1983). The second settlement pattern states that the Luiseño were bi-modal, with an approximate six-month span of time spent at the village site, and the other six months spent in other specific areas to gather food such as acorns or sometimes for hunting or coastal fishing (Dubois, 1908; Sparkman, 1908; True et al., 1974; Shipek, 1977; and Bean and Shipek, 1978). The habit of a longer-term residence base (six months or more of residence in one locale) supported by numerous ephemeral satellite sites, such as short-term encampments dedicated to specialized subsistence tasks, has been documented throughout southern California (Byrd and Raab, 2007).

A typical territory would extend from lower to higher elevations and would encompass stream valleys, chaparral-covered slopes, upper reaches with flats and saddles, and would include a stable source of water often located in a sheltered valley (White, 1963).

Study Methods

In order to ascertain the proximity of existing cultural resources to the APE and project area a record search was undertaken at the California Historical Resources Information System's Eastern Information Center (EIC) at California State University, Riverside on August 26, 2019. The record search included a one-mile search radius around the proposed project's APE. This records search was completed to determine the general character of the cultural resources within the project area as well as to gauge the potential effects of the proposed construction activities. A search of the Sacred Lands Files stored at the State of California Native American Heritage Commission. The phase I field survey was conducted on August 28, 2019.

Results of Study

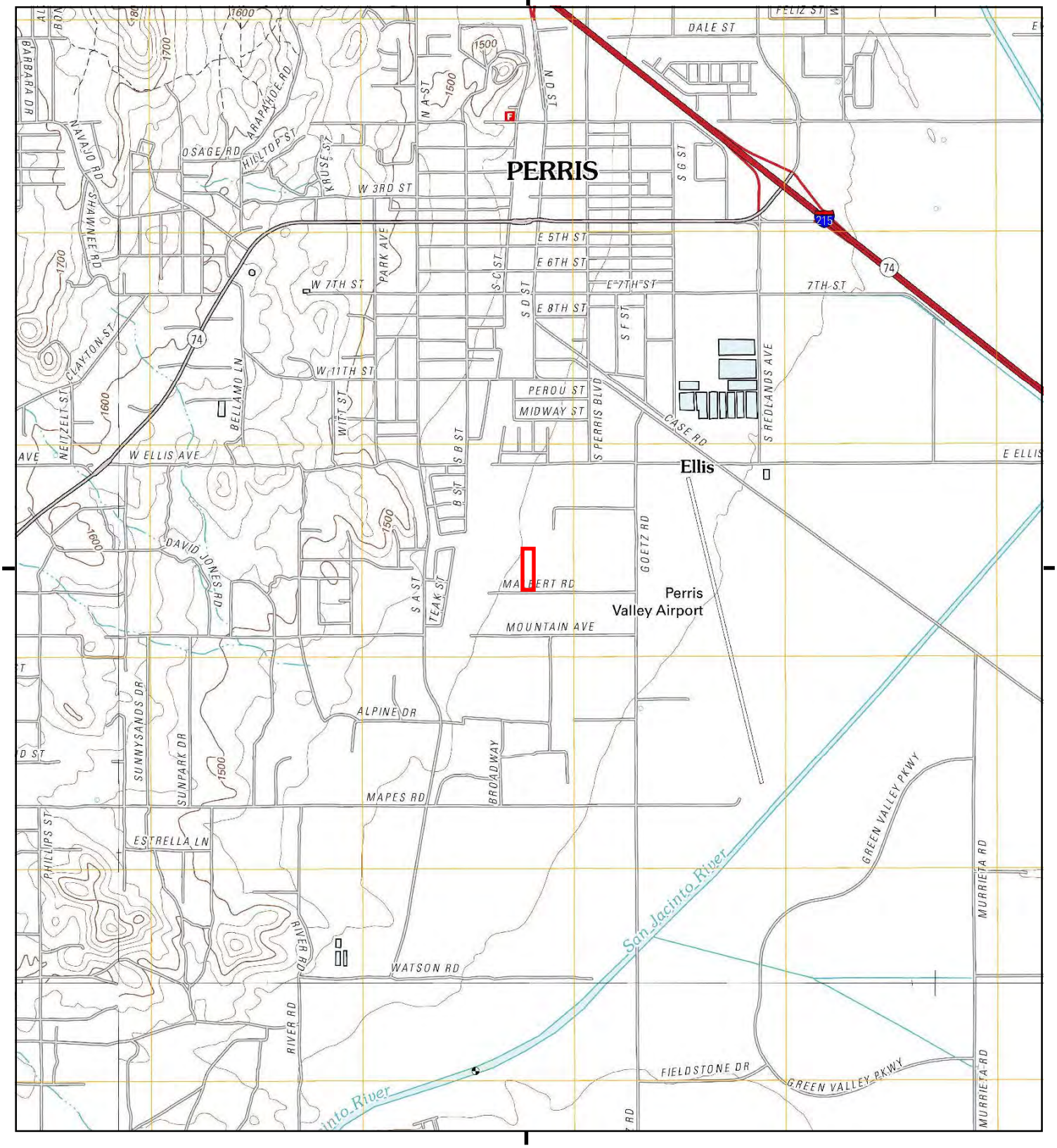
The results of the records search indicated that while the project site has never been surveyed for historic resources, the City of Perris general area has been the subject of many previous studies. Within the one-mile radius of the project site a total of 35 historic resources studies have been conducted between 1979 and 2015 (Table 1). These studies resulted in the recordation of 80 historic and prehistoric sites within a mile of the project site (Table 2). Five of these sites are prehistoric archaeological sites and the rest are historic era resources. Many of these sites are buildings within and around the City of Perris.

FIGURE 1 - PROPERTY LOCATION & TOPOGRAPHIC MAP

EDR

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Perris, 2012, 7.5-minute
SE, Romoland, 2012, 7.5-minute
SW, Lake Elsinore, 2012, 7.5-minute
NW, Steele Peak, 2012, 7.5-minute

SITE NAME: Undeveloped Lot
ADDRESS: 240 Malbert Street
Perris, CA 92570
CLIENT: Coast 2 Coast Env.

N

Table 1: Historic Resources Studies

Report Number	Authors	Year	Title
RI-00527	James P. Barker	1979	Environmental Impact Evaluation: An Archaeological Assessment of Tentative Parcel 13405, South of Perris, Riverside County, California.
RI-02245	Bowey, Paul	1987	Letter Report: Archaeological Reconnaissance – Perris, California.
RI-02777	Phillip de Barros	1988	Archival Records Search and Cultural Resources Survey of Perris Property Partners Property, Riverside County, California.
RI-03834	Strum, Bradley	1994	Historic Property Survey Report for the Evans Avenue/Ellis Road/I-215 Interchange in Perris, CA.
RI-04348	Love, Brue and Michael Hogan	2000	Historical/Archaeological Resources Survey Report: Community Day School Expansion, APN 310-160-056, City of Perris, Riverside County, California.
RI-04403	Romani, John	1993	Archaeological Survey Report for the Proposed Widening of Route 74 From Seventh Street to the I-15 Freeway, Riverside County, CA.
RI-04404	Jones and Stokes Associates, Inc.	2000	Final Cultural Resources Inventory Report for the Williams Communications, Inc., Fiber Optic Cable System Installation Project, Riverside to San Diego, California Vol I-IV.
RI-04421	LSA Associates, Inc.	1990	Appendix B-Cultural Resources. In: Measure A Program Project Alternatives Analysis-Environmental Component, Technical Appendix Volume I.
RI-04775	Schmidt, James J.	2004	Appendix B-Cultural Resources. In: Measure A Program Project Alternatives Analysis-Environmental Component, Technical Appendix Volume I.
RI-04974	Hoover, Anna M and William R. Gillean.	2005	A Phase IA Archaeological Survey Report for the Phase II Perris Desalter Transmission Pipeline Project, Near Perris, Riverside County, California.
RI-05059	McKenna et Al.	2001	Results of a Paleontological Monitoring Program at the Murrieta Highlands Project Area in the Paloma Valley of Riverside County, California.
RI-05361	Mason, Roger D.	2004	Cultural Resources Survey Report for the Perris 50 Project Riverside County, California.
RI-06018	Bai Tang, Michael Hogan, Mariam Dahdul, and Daniel Ballester	2003	Historical/Archaeological Resources Survey Report: Menifee Valley North Drainage Facilities Project, In and Near the

			Communities of Romoland and Homeland, Riverside County, California.
RI-06744	Riordan Goodwin and Jodi L. Dalton	2006	Cultural Resources Assessment: Goetz Road Project, City of Perris, Riverside County, California.
RI-06888	Lerch, Michael K. and Gray, Marlesa A.	2006	Cultural Resources Assessment: Goetz Road Project, City of Perris, Riverside County, California.
RI-06978	Alexandrowicz, John Stephen	2007	An Historical Resources Identification Investigation, of the Retail Building Project, 345 East Fourth Street, City of Perris, Riverside County, California.
RI-06997	Glenn, Brian K.	2006	Archaeological Survey Report for the State, Route 74/Interstate 215 Interchange Project, City of Perris, Riverside County, California.
RI-07002	White, Robert S. and White, Laura S.	2006	A Cultural Resources Assessment of 12.55-Acres as Shown on VTTM 32549 Located North of Arrowhead Circle and West of River Road, City of Perris, Riverside County.
RI-07131	Jordan, Stacey C.	2007	Archaeological Survey Report for Southern California Edison Company: Removal of Two Poles (#1667999E and #1668000E) on Idle Facility Project on the Deacon 12kV Circuit, Riverside County, California (WO#6077-6900, AI#P7988).
RI-07338	Tang, Bai "Tom" and Michael Hogan	2007	Historical/Archaeological Resources Survey Report: Assessor's Parcel No. 330-070-007.
RI-07492	Tsunoda, Koji and Michael M. DeGiovine	2007	Archaeological Survey Report for Southern California Edison Company O&M - Global Plastics Project on the Deacon 12 kV Circuit, Riverside County, California.
RI-07689	Clifford, James and Brian F. Smith	2005	A Cultural Resources Survey for the Galvez-El Sur Townhomes Project.
RI-08101	McCormick, Steven and Sherri Gust	2006	Archaeological and Paleontological Resources Assessment Report for The Green Valley Project, Perris, California.
RI-08364	Michelle Campbell, Rebecca McCorkle Apple, Christopher L. Shaver, and Cheryl Bowden-Renna	2010	Archaeological Survey Report for the Interstate 215/Scott Road Interchange Improvement Project near Murrieta, Riverside County, California.
RI-08527	James J. Schmidt	2010	Letter Report: Lake Elsinore & Perris Vicinity Deteriorated Pole Replacement Project (WO 6077-4800; 1-4806, 1-4807, 1-4808, 1-4809, 1-4810) Riverside County, California.
RI-08639	Evelyn N. Chandler and Cary D. Cotterman	2009	Cultural Resources Inventory of Two Proposed Pole Replacement ins in Perris and Homeland Riverside County, California (W.O. 6077-4800, E4832, E4833).
RI-08742	Bai Tom Tang, Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	2012	Historical/Archaeological Resources Survey Report: Assessor's Parcel No. 313-143-009, City of Perris, Riverside County, California.

RI-08864	Bai "Tom" Tang, Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	2012	Historical/Archaeological Resources Survey Report Assessor's Parcel No. 313-143-009 City of Perris, Riverside County, California.
RI-08927	Bai "Tom" Tang	2013	Archaeological Monitoring Program, Dollar General Project on Fourth Street near Park Avenue, APN 313-143-009; DPR 12-07-0011; GPA 12-07-0010, City of Perris, Riverside County, California.
RI-08980	Scott C. Justus, Matthew M. DeCarlo, and William T. Eckhardt	2010	Final: Cultural Resources Inventory of The Proposed DPV2 Construction Yards Riverside County California.
RI-09005	Riordan Goodwin	2013	Results of Archaeological Monitoring Program for the Mercado Park Project in the City of Perris (LSA Project No. PIS1201).
RI-09529	David K. Grabski and Brian F. Smith	2015	A Class III Cultural Resource Study for the Habitat for Humanity Project.
RI-09791	Brian F. Smith and Elena C. Goralogia	2016	A Phase I Cultural Resources Survey for the Biogas Service Pipeline Project, Perris, California.
RI-10461	William T. Eckhardt, Matthew M. DeCarlo, Doug Mengers, Sherri Andrews, Don Laylander, and Tony Quach	2015	Archaeological Investigations and Monitoring for the Construction of the Devers-Palo Verde No. 2 Transmission Line Project, Riverside County, California.
RI-10652	NA	2003	San Jacinto Branch Line Riverside County, California Determination of Eligibility and Effects Report.

Table 2: Historic and Prehistoric Sites Within One Mile of Site

Primary Number	Trinomial	Type	Era
P-33-000412	CA-RIV-000412		Unknown
P-33-000706	CA-RIV-000706		Historic
P-33-000805	CA-RIV-000805		Prehistoric
P-33-004719	CA-RIV-004719	Perris #1	Historic
P-33-007587		City of Perris, West 4th St. Historic District	Historic
P-33-007600		German ME Church	Historic
P-33-007601		Perris Depot; Santa Fe Depot	Historic
P-33-007602			Historic
P-33-007603			Historic
P-33-007605			Historic
P-33-007606			Historic
P-33-007607			Historic
P-33-007607			Historic
P-33-007610			Historic
P-33-007611			Historic
P-33-007612		First Perris Depot	Historic
P-33-007613			Historic
P-33-007614			Historic
P-33-007616		Bank of Perris	Historic
P-33-007651			Historic
P-33-007654			Historic
P-33-007655			Historic
P-33-007656			Historic
P-33-007657			Historic
P-33-007661		Trolley Museum	Historic
P-33-007662			Historic
P-33-007665			Historic
P-33-007666		Globe Grain & Milling Co.	Historic
P-33-007667			Historic
P-33-007668			Historic
P-33-007669		Hook's Grain Yard	Historic
P-33-009776	CA-RIV-005667H	Other - AT & SF/ BNSF Railroad	Historic
P-33-013496		Poinsettia Hotel	Historic
P-33-013500			Historic
P-33-014773	CA-RIV-007863		Historic
P-33-014774	CA-RIV-007864		Historic
P-33-014775			Historic
P-33-015345	CA-RIV-008101		Prehistoric
P-33-015375	CA-RIV-008122		Prehistoric

P-33-015377	CA-RIV-008124		Prehistoric, Historic
P-33-015379	CA-RIV-008126		Historic
P-33-015380	CA-RIV-008127		Historic
P-33-015384			Historic
P-33-015385			Historic
P-33-015386			Historic
P-33-015387			Historic
P-33-015388			Historic
P-33-015743	CA-RIV-008196	BNSF Railroad; San Jacinto Valley Railway; Santa Fe Valley Railroad; Burlington Northern Santa Fe Railroad;	Historic
P-33-020451	CA-RIV-010352		Historic
P-33-020467	CA-RIV-010368		Historic
P-33-024871	CA-RIV-012329	Alpine Meadows-1	Prehistoric
P-33-026644		120 East 3rd Street	Historic
P-33-028756		214 W. 6TH St.	Historic
P-33-028764		16 C St.	Historic
P-33-028765		30 C St.	Historic
P-33-028766		104 S. C St;	Historic
P-33-028767		124 S. C St.	Historic
P-33-028768		222 S C St.	Historic
P-33-028769		290 S. C St.	Historic
P-33-028770		422 S. C St.	Historic
P-33-028771		430 S. C St.	Historic
P-33-028773		40 S D St.	Historic
P-33-028774		Home Oil Company	Historic
P-33-028775		Perris Valley Ice & Cold Storage	Historic
P-33-028776		George & Violet Farmer	Historic
P-33-028777		Perris Vocational School	Historic
P-33-028778		304 D St.	Historic
P-33-028779		J & H Kirkpatrick	Historic
P-33-028780		418 S. D St.	Historic
P-33-028788		422 S. D St	Historic
P-33-028792		Stewart Building	Historic
P-33-028793		610 S. C St.	Historic
P-33-028794		424 S. D St.	Historic
P-33-028795		426 S. D St.	Historic
P-33-028796		Creative Printing	Historic
P-33-028797		Free Indeed Christian Fellowship	Historic

P-33-028799		619 S. C St.	Historic
P-33-028800		620 S. C St.	Historic
P-33-028803		628 S. C St.	Historic
P-33-028813		8 C St.	Historic

An intensive-level cultural resources pedestrian survey was conducted on August 28, 2019 by Sandra Pentney, M.A., RPA, and accompanied by Delaney Coyle, both of GEPermit. The project site has been subjected to disturbances including push-piles of dirt, garbage disposal and road use. A wetland is located on the east side of the property – possibly the result of water runoff from the paved surface of the neighboring property. Vegetation was thick and obscured ground visibility. Transects were walked in approximate 10-meter wide transects. Variations to this were allowed to avoid push-piles and impassable vegetation. The estimated ground surface visibility is 75%.

Figure 2: View to the west of Project Site. ISO-01 is visible in the foreground.

Despite the lack of visibility of the project site one isolated prehistoric artifact was observed and recorded. ISO-1 is a retouched flake made from basalt. The isolate was recorded on California Department of Parks and Recreation forms and will be filed with the EIC.

Figure 3: ISO-01 view of the working edge.

Conclusions

The proposed project has been subjected to various disturbances throughout the years; however, the disturbance appears to be restricted to the surface. The presence of an isolated artifact on the project site, combined with the known sensitivity of the general area increases the likelihood of finding subsurface artifact deposits. GEPermit recommends that a qualified archaeologist be onsite for all initial ground disturbance associated with construction of the project. The frequency and level of monitoring can be adjusted in the field at the discretion of the archaeologist to reflect subsurface conditions.

REFERENCES

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Sparkman, Philip Stedman. 1908. The Culture of the Luiseno Indians. Berkeley: The University Press.

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APPENDIX A: DPR Form

State of California ♿ The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI #
PRIMARY RECORD
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) ISO-01
P1. Other Identifier:

*__P2. Location:__ X **Not for Publication** ☐ **Unrestricted**
- ***a. County** Riverside **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
- ***b. USGS 7.5' Quad** Perris **Date** 1967 **T** 5S; **R** 3W ; NE ☐ **of** ☐ **of Sec** 6; **B.M.**
- c. Address 24 Malbert Street City Perris Zip
- d. UTM: (Give more than one for large and/or linear resources) Zone 11, 3736338 mE/ 478769 mN
- e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Isolated basalt retouched flake. Proximal and distal ends are both missing from the flake. Retouch is evident along both lateral edges on the dorsal side of the flake.

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

***P3b. Resource Attributes:** (List attributes and codes)
***P4.Resources Present:** ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other (Isolates, etc.)
P5b. Description of Photo: (view, date, accession #) Dorsal surface showing retouched lateral edges 08/28/2019
***P6. Date Constructed/Age and Source:** ☐ Historic x☐ Prehistoric ☐ Both
***P7. Owner and Address:**
***P8. Recorded by:** (Name, affiliation, and address) Sandra Pentney, GEPermit

***P9. Date Recorded:** 8/28/19
***P10. Survey Type:** (Describe): Phase I

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Cultural Resources Phase I Letter Report, Malbert Street Project Perris, California (APN 330-040-062)

***Attachments:** ☐NONE X Location Map ☐Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

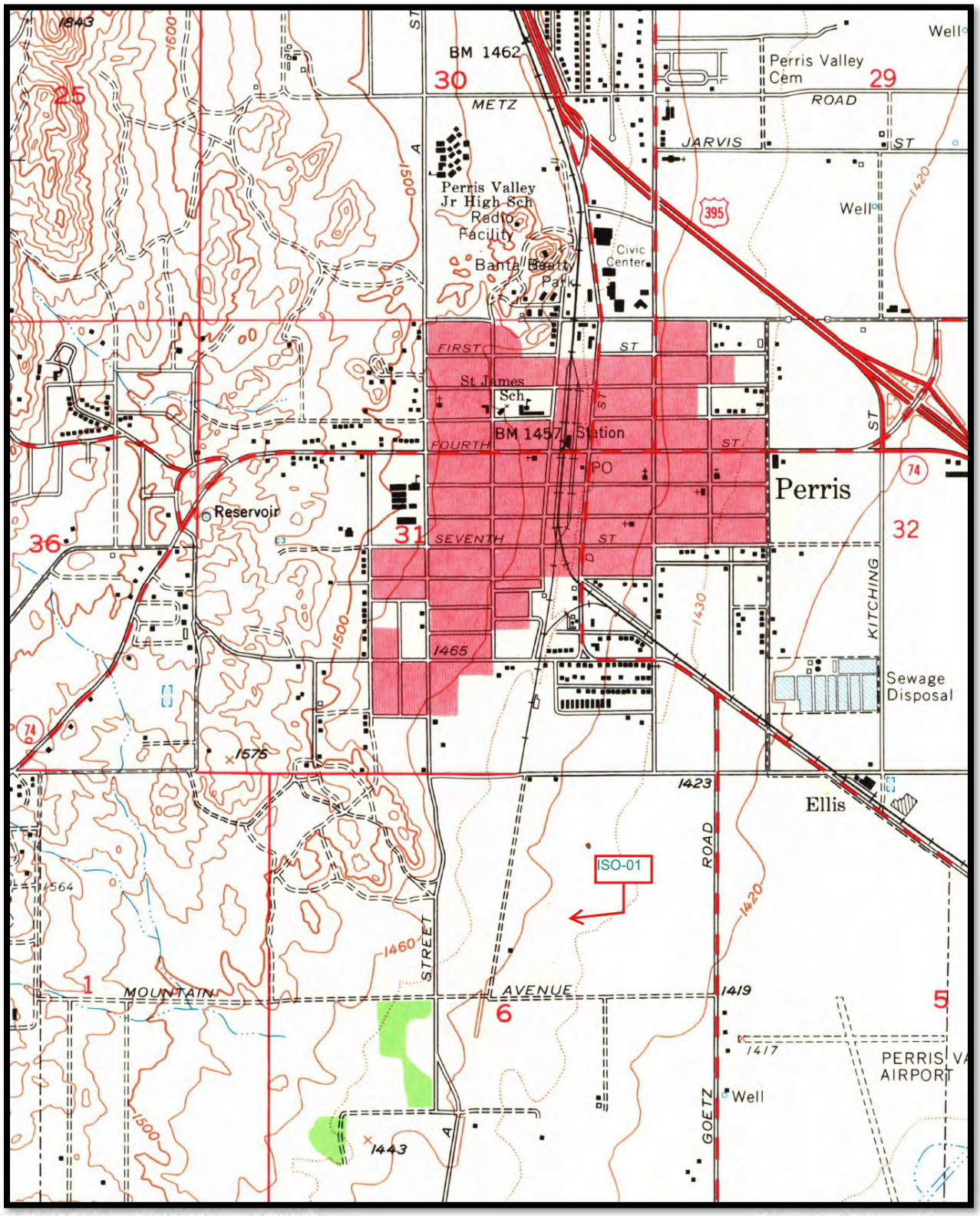
State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 2 ***Resource Name or #** (Assigned by recorder) ISO-01

***Map Name:** Perris, CA ***Scale:** 1:24,000 ***Date of map:** 1967



APPENDIX B: Sacred Lands File Search Results

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

September 19, 2019

Sandra Pentney
GE Permit

VIA Email to: spentney@gepermit.com

RE: Malbert Street Development Project, Riverside County

Dear Ms. Pentney:

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 the NAHC. 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: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
9/19/2019

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

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

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
Shane 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
Denisa Torres, Cultural Resources Manager
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Luiseno Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-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 Malbert Street Development Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
9/19/2019

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

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

Santa Rosa Band of Cahuilla Indians
Mercedes Estrada,
P. O. Box 391820 Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
mercedes.estrada@santarosacahuilla-nsn.gov

Santa Rosa Band of Cahuilla Indians
Steven Estrada, Chairperson
P.O. Box 391820 Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
mflaxbeard@santarosacahuilla-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

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92583 Luiseno
Phone: (951) 654 - 2765
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

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 Malbert Street Development Project, Riverside County.

APPENDIX C : Resume of Principal Investigator

Sandra Pentney, MA, RPA, ENV SP

As-Needed Principal Investigator

EDUCATION

B.A., Anthropology, Lakehead University

M.A., Archaeology, University of Saskatchewan

PROFESSIONAL AFFILIATIONS AND CERTIFICATIONS

Register of Professional Archeaologists, 2006-Present

San Diego County Approved Archaeologist, 2013- Present

Orange County Certified Archaeologist, 2006-Present

General Member of Society for American Archaeology, 1996-Present

Sub-Committee Co-Chair for the Society for California Archaeology, 2005-Present

Professional Experience

Ms.Pentney is a results-driven CEQA/NEPA and Cultural Resources professional with broad-based experience in project management, business development, and agency consultation. She is an accomplished professional who has negotiated multi-agency procedures, fostered communications between project stakeholders, and a collaborative team leader who can motivate and coordinate a large project team to outstanding performance. She is an active communicator with excellent interpersonal and relationship-building skills. Expertise includes project management, team leadership, Section 106, CEQA, NEPA, California cultural resources regulations and procedures, Native American consultation, project impact analysis, and resiliency planning.

Project Experience

NWB Environmental (October 2018-Present) Serving as the Principal Investigator for a small SBE, MBE, DVBE environmental firm. Responsibilities include reviewing all work products and instructing and mentoring senior archaeologists and field staff.

Atkins Global Senior Scientist III/Environmental Team Lead (November 2013-May 2019) Sandra was the Principal Investigator for cultural resources projects in California, Washington, Oregon, Nevada, Idaho, Utah, and Wyoming. She started as the only archaeologist in the office and grew a team of over 15 archaeologists. She also managed the San Diego office Environmental Team and, in this capacity, worked on developing peer mentorship, collaboration, CEQA and NEPA training modules for staff, and served as Project Manager for a variety of types of projects from water resources engineering, CEQA, cultural resources, biological resources, and wetland delineation assessments.

EL Camino Real Widening Cultural Resources Support Sandra served as the Project Manager for Phase II and Phase III cultural resources studies for the City of Carlsbad, CA. While constructing the El Camino Real Widening project construction crews unearthed prehistoric artifacts, and human remains mixed in with modern refuse. Atkins was hired to work with the San Luis Rey Band of Mission Indians to develop and execute a data recovery plan. The project lasted two years and employed eight archaeologists working full time.

Murrieta Springs Specifc Plan Amendment: Cultural Resources Investigations Sandra served as Project Manager/Principal Investigator overseeing cultural resources studies for this project that involves environmental review and EIR preparation for an urban land development project and Specific Plan amendment. She oversaw the records search, tribal consultation, a comprehensive review of previous studies on the project site, intensive level field survey of nearly 1,000 acres, and preparation of a report and cultural resources testing plan. The survey resulted in recordation of several newly discovered archaeological sites including petroglyphs, fertility symbols, and extensive lithic scatters. Sandra continued to lead the cultural resources effort with Phase II Evaluation studies to determine the significance of the sites. Her work on this project included extensive Native American consultation with the Pechanga Band of Luiseno Indians and tasks such as Traditional Cultural Property evaluations are on-going. While the contract was for CEQA support, all cultural resources deliverables were prepared to meet both CEQA and Section 106 requirements since 404 permits would be needed for the project.

City of San Diego As-Needed Environmental Services Contract Sandra served as the primary Project Manager for this contract, managing 29 of the 37 separate task orders awarded under the contract. The task orders included various tasks such as cultural resources and biological resources investigations, civil engineering, landscape restoration, and CEQA/NEPA permitting.

Ecology and Environment, Inc. Principal Investigator, Deputy Project Manager, Project Manager (April 2007-November 2013) Sandra served as Principal Investigator for Ecology & Environment from 2007 until 2013. During this time, she also served as Deputy Project Manager and Project Manager on select projects. She worked as both archaeologist and CEQA/NEPA generalist on projects throughout California, and across the US. Projects that she worked on included utility-scale solar, wind, and geothermal projects, large-scale oil and gas projects, DOD work through NAVFAC Southwest, and projects for the California Public Utilities Commission.

NAS Fallon Environmental Assessment, Nevada For Naval Facilities and Engineering Command, Southwest Region, and in coordination with over five different Navy departments, Sandra served as deputy project manager for this multi-faceted project to modify and enhance the existing Training Range, Bravo-16. She oversaw all aspects of the project from inception to completion; she provided client liaison, prepared work plans, and schedules, managed the preparation of the EA and prepared monthly progress reports. The project proposed closure of public land widely used for recreational activities, as the

addition of a C-130 landing strip and expansion of a surface danger zone, would put the public and military personnel in too close proximity to gunfire. Sandra assisted the Navy in conducting targeted public meetings that presented the proposed closure and alternatives.

California Valley Solar Ranch EA Sandra served as Principal Investigator to support the NEPA EA required for a loan guarantee from Department of Energy (DOE). CVSR included a proposed 250-MW solar photovoltaic (PV) power plant to be located on an approximately 4,700-acre site and reconductoring of a 35-mile segment of the Morro Bay-Midway transmission line of Pacific Gas and Electric (PG&E), which crosses both San Luis Obispo and Kern Counties. She conducted limited field studies pertaining to the inadvertent discovery of a National Register of Historic Places (NRHP) eligible resource, prepared cultural resources reports, and oversaw the work of a cultural resource sub-consultant. Ms. Pentney also prepared the cultural resource section for the EA, prepared and presented data to Native American Tribal contacts for the project, provided guidance on appropriate Tribal outreach, interacted with the California State Historic Preservation Office (SHPO) to ensure proper compliance for the EA process, and facilitated Native American Consultation. This project was given high accolades from the DOE project managers, with her comments focussing on the tribal consultation processes and outcomes.

Eldorado to Ivanpah Transmission Project (EITP), Nevada to California For the California Public Utilities Commission (CPUC) and BLM, Sandra was the cultural resources team leader for the award-winning, joint third-party EIR/EIS. E & E prepared this document for this 35-mile transmission line and substation project of Southern California Edison (SCE). She wrote the cultural resources section of the EIR/EIS and reviewed technical reports prepared by the applicant. She also coordinated with BLM archaeologists and the State Historic Preservation Offices of both California and Nevada to ensure that impacts on cultural resources were adequately assessed for both states, and that appropriate mitigation measures were delineated. A Historic Architecture and Engineering Report (HAER) was required as part of project mitigation because the EITP required the destruction of a historic transmission line. Sandra reviewed the report to verify that it provided adequate documentation to mitigate this loss of this resource. She also supported BLM in its Native American notification and consultation process, to help ensure that the EIR/EIS adequately addressed potential effects on the Native American community. This project was awarded the 2010 APA Planning Award for Environmental Planning Excellence.

SANTEC Project Archaeologist (January 2005-March 2007) Sandra served as Project Archaeologist for two years. During this time, she was responsible for all

aspects of Phase I, II, and III investigations in California. Sandra trained and mentored a team of 12 archaeologists in cultural resources survey, test and evaluation, and data recovery excavations. She took the lead on all report preparations, Native American Consultation, any archaeological fieldwork in the Orange and Los Angeles County regions. While at Stantec Sandra oversaw a large-scale data recovery excavation at the Tomato Springs Ethnohistoric site near Irvine, CA, and managed a long-term archaeological monitoring program for an urban land development project. This project resulted in documenting and excavating numerous deeply buried archaeological sites, illustrating a much more rapid rate of sedimentary deposition on the Tustin Plain than was previously believed.

APPENDIX D
Paleontological Resource Assessment Report

PALEOSERVICES
SAN DIEGO NATURAL HISTORY MUSEUM

Paleontological Technical Report

Perris Regional Compassionate Center
City of Perris
Riverside County, California

October 17, 2019

Prepared for:
GEPermit
7220 Trade St. Suite 207B
San Diego, CA 92121

Prepared by:
Department of PaleoServices
San Diego Natural History Museum
1788 El Prado
San Diego, California 92101

Katie M. McComas, M.S., Paleontological Report Writer
Thomas A. Deméré, Ph.D., Principal Paleontologist

thenat | SAN DIEGO NATURAL HISTORY MUSEUM

Executive Summary

This technical report provides an assessment of paleontological resources at the proposed Perris Regional Compassionate Center (Project) site in the City of Perris, Riverside County, California. The purpose of this report is to identify and summarize paleontological resources that occur within the vicinity of the Project site, identify Project elements (if any) that may negatively impact paleontological resources, and provide recommendations to reduce any potential negative impacts to less than significant levels, if necessary. The report includes the results of institutional records searches conducted at the Western Science Center (WSC) and San Diego Natural History Museum (SDNHM).

The approximately 2.6 acre Project site is located in the southern portion of the City of Perris, and is bordered to the east, north, and west by industrial and commercial developments, and to the south by Malbert Street. Ground disturbance at the proposed Project site will be associated with construction of a facility for the indoor cultivation and distribution of medical and non-medical adult use marijuana. The proposed cultivation facility consists of three buildings with an estimated 3,000 square foot dispensary retail/office space, and two estimated 15,003 square foot climate controlled indoor cultivation areas.

Published geologic mapping for the Project site indicates the site is underlain by Quaternary very old alluvial-fan deposits (Qvof). The alluvial fan deposits are considered to be early Pleistocene in age (~2.6 million to 780,000 years old) at the surface.

No recorded fossil collection localities at WSC or SDNHM are known from within a 1-mile radius of the Project site. However, WSC reports multiple fossil localities in similar Pleistocene-age alluvial deposits located less than 10 miles east of the proposed Project site at the Diamond Valley Lake project site.

A low to high paleontological sensitivity is assigned to the Quaternary very old alluvial-fan deposits underlying the entire Project site. Based on a review of the proposed construction elements, it is suggested that impacts to paleontological resources are not likely to occur during the surficial phase of mass grading (e.g., grading for slab-on-grade building foundations, parking lots, and driveways). However, earthwork related to installation of deep utilities and construction of the storm water detention chambers that extend deeper than 5 feet below the current ground surface have the potential to directly impact paleontological resources.

Because construction of the proposed Project has the potential to impact paleontological resources during deeper phases of earthwork within Quaternary very old alluvial-fan deposits, implementation of a paleontological mitigation program centered around paleontological monitoring is recommended (outlined in Mitigation Measures 1–7). Implementation of the paleontological mitigation program will reduce any Project-related impacts to paleontological resources to a level that is less than significant.

Contents

1.0 Introduction

1.1 Project Description and Scope of Work

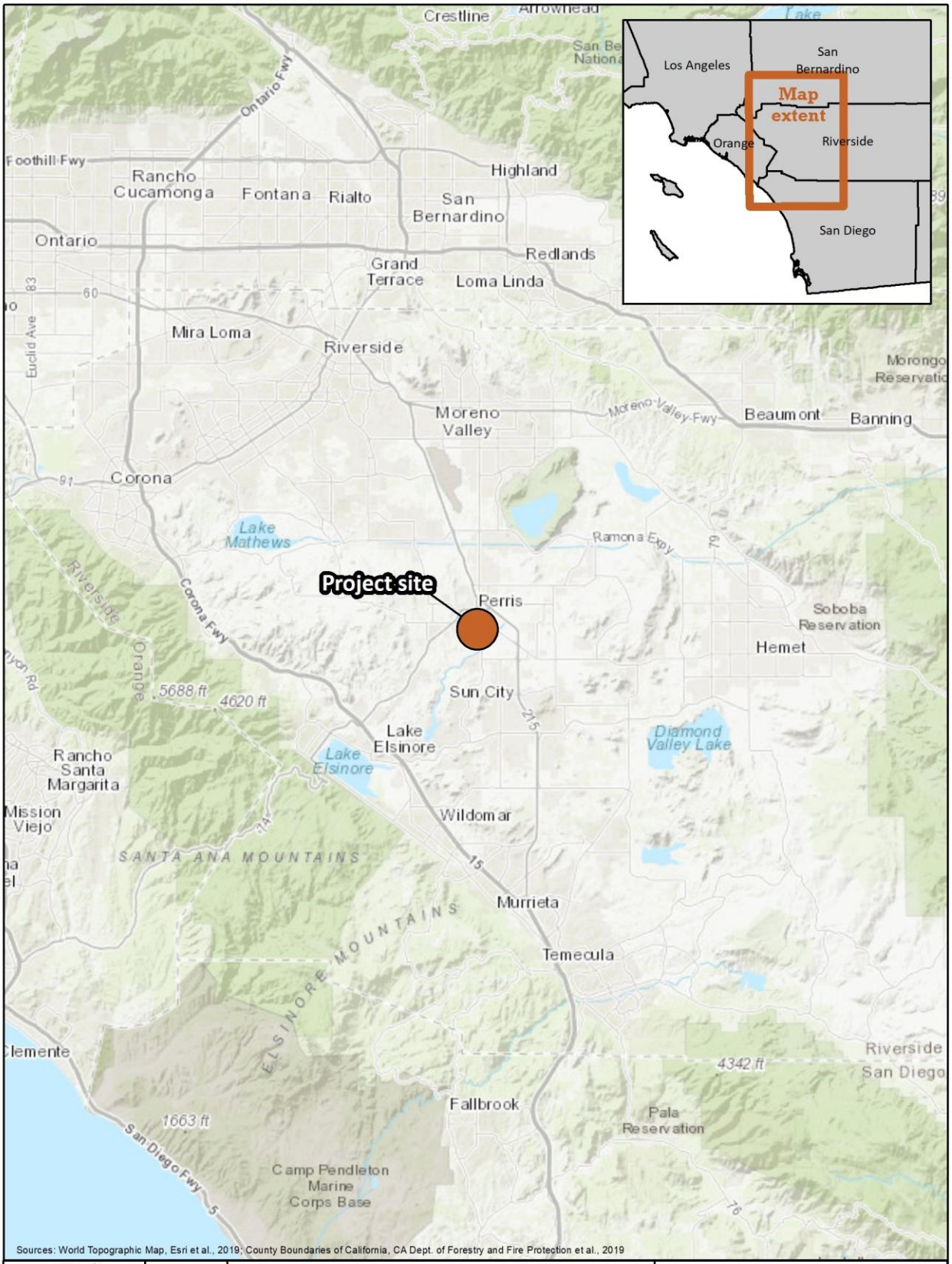
This technical report provides an assessment of paleontological resources for the proposed Perris Regional Compassionate Center (Project) site, City of Perris, Riverside County, California. The Project site is located on a 2.61-acre parcel at 24 Malbert Street, and is bordered to the east, north, and west by industrial and commercial developments, and to the south by Malbert Street (Figure 1). Ground disturbance will be associated with construction of a facility for the indoor cultivation and distribution of medical and non-medical adult use marijuana. The proposed cultivation facility will consist of three buildings, including an estimated 3,000 square foot dispensary retail/office space, and two estimated 15,003 square foot climate controlled indoor cultivation areas. Parking, driveways, and landscaped areas are also planned for the site.

This report is intended to satisfy requirements of the City of Perris regarding potential impacts to paleontological resources that may occur during construction of the proposed Project by summarizing existing paleontological resource data at the Project site, discussing the significance of these resources, examining project related impacts to paleontological resources, and, if necessary, suggesting mitigation measures to reduce impacts to paleontological resources to less than significant levels. The assessment includes the results of a literature review of relevant geological and paleontological reports and an institutional records search of the paleontological collections at the Western Science Center (WSC) and the San Diego Natural History Museum (SDNHM). This report was prepared by Katie M. McComas and Thomas A. Deméré of the Department of PaleoServices, SDNHM.

1.2 Definition of Paleontological Resources

As defined here, paleontological resources (i.e., fossils) are the buried remains and/or traces of prehistoric organisms (i.e., animals, plants, and microbes). Body fossils such as bones, teeth, shells, leaves, and wood, as well as trace fossils such as tracks, trails, burrows, and footprints, are found in the geologic deposits within which they were originally buried. The primary factor determining whether an object is a fossil or not isn't how the organic remain or trace is preserved (e.g., "petrified"), but rather the age of the organic remain or trace. Although typically it is assumed that fossils must be older than ~10,000 years (i.e., the generally accepted end of the last glacial period of the Pleistocene Epoch), organic remains of early Holocene age can also be considered to represent fossils because they are part of the record of past life.

Fossils are considered important scientific and educational resources because they serve as direct and indirect evidence of prehistoric life and are used to understand the history of life on Earth, the nature of past environments and climates, the membership and structure of ancient ecosystems, and the pattern and process of organic evolution and extinction. In addition, fossils are considered to be non-renewable resources because typically the organisms they represent no longer exist. Thus, once destroyed, a particular fossil can never be replaced. And finally, for the purposes of this report, paleontological resources can be thought of as including not only the actual fossil remains and traces, but also the fossil collecting localities and the geologic units containing those localities.


Project site
Map extent
Los Angeles
San Bernardino
Orange
Riverside
San Diego
Crestline
Rancho Cucamonga
Fontana
Rialto
Highland
San Bernardino
Ontario
Redlands
Grand Terrace
Loma Linda
Mira Loma
Riverside
Moreno Valley
Beaumont
Banning
Corona
Lake Mathews
Perris
Soboba Reservation
Hemet
Sun City
Lake Elsinore
Diamond Valley Lake
Rancho Santa Margarita
Mission Viejo
Wildomar
SANTA ANA MOUNTAINS
Murrieta
Temecula
ELSINORE MOUNTAINS
Fallbrook
Pala Reservation
Camp Pendleton Marine Corps Base
5688 ft
4620 ft
4342 ft
1663 ft
Sources: World Topographic Map, Esri et al., 2019; County Boundaries of California, CA Dept. of Forestry and Fire Protection et al., 2019
PaleoServices
FIGURE 1
Index Map
Malbert Street Warehouse
City of Perris, Riverside County, California
0
7.5
scale in miles
N

1.3 Regulatory Framework

Paleontological resources are considered scientifically and educationally significant nonrenewable resources, and as such they are protected under a variety of federal (e.g., Antiquities Act of 1906; National Environmental Policy Act of 1969; Federal Land Policy Management Act of 1976; Paleontological Resources Preservation Act of 1009), state (e.g., California Environmental Quality Act [CEQA]; Public Resources Code), and local (e.g., City of Perris General Plan, County of Riverside General Plan) laws, regulations, and ordinances.

The Project site is located within the City of Perris, Riverside County; therefore, local laws, ordinances, and regulations are applicable, as outlined below.

1.3.1 Local

The General Plan 2030 of the City of Perris provides a 30 year guide for local government decisions on growth, capital investment, and physical development, and as such includes policies for the protection of the City's resources (including paleontological resources) that comply with CEQA, as well as other state and federal regulations. Within the Conservation Element of the General Plan, the City identifies the occurrence of important paleontological resources, with Implementation Measure IV.A.1 directly applicable to the conservation of these resources:

> In Area 1 and Area 2 shown on the Paleontological Sensitivity Map, paleontologic monitoring of all projects requiring subsurface excavations will be required once any excavation begins. In Areas 4 and 5, paleontologic monitoring will be required once subsurface excavations reach five feet in depth, with monitoring levels reduced if appropriate, at the discretion of a certified Project Paleontologist.

As outlined below in Section 2.2, Riverside County has developed criteria to assess the sensitivity of paleontological resources, which have been adopted by the City of Perris, and used to create a Paleontological Sensitivity Map of the City.

The County of Riverside General Plan contains extensive information, policies, guidelines, and recommendations concerning the treatment of paleontological resources (County of Riverside, 2015).

2.0 Methods

2.1 Paleontological Records Searches and Literature Review

Paleontological records searches were conducted at the WSC and SDNHM in order to determine if any documented fossil collection localities occur within the Project site or immediate surrounding area. The SDNHM records search involved examination of the SDNHM paleontological database for any records of known fossil collection localities within a 1-mile radius of the Project site. A records search of the paleontological collections at WSC was also completed (Western Science Center, 2019; Appendix).

Additionally, a review was conducted of relevant published geologic maps (e.g., Dibblee and Minch, 2003; Morton, 2003; Morton and Miller, 2006), published geological and paleontological reports (e.g., Jefferson, 1991; Reynolds and Reynolds, 1991; Springer et al., 2009, 2010), and other relevant literature (e.g., field trip guidebooks, theses and dissertations, unpublished paleontological mitigation reports). This approach was followed in recognition of the direct relationship between paleontological resources and the geologic units within which they are entombed. Knowing the geologic history of a particular area and the fossil productivity of geologic units that occur in that area, it is possible to predict where fossils may, or may not, be encountered.

2.2 Paleontological Resource Assessment Criteria

The County of Riverside has developed standards for assessing paleontological potential/sensitivity that are based, in part, on the standards set forth by the Society of Vertebrate Paleontology (SVP, 2010), and that also take into account the possibility for adverse impacts due to human influence, such as construction-related ground disturbance. The County recognizes a tripartite scale: High Potential (High A and High B subcategories), Low Potential, and Undetermined Potential.

The City of Perris has applied the Riverside County paleontological sensitivity standards to areas within their jurisdiction, relying on existing geologic mapping to determine discrete areas where High, Low, and Undetermined sensitivity geologic units occur. However, it should be noted that these areas are mapped at a relatively coarse-scale, and thus the City of Perris paleontological sensitivity map appears to be designed for use as a starting point in the planning process for determining whether proposed projects may or may not require paleontological resource investigations. Refinement of this initial assignment is completed during the paleontological resource assessment process (e.g., through consultation of large-scale geologic maps and production of paleontological record searches).

The specific evaluation criteria for determining levels of Paleontological Sensitivity are outlined below.

2.2.1 High Potential/Sensitivity

High sensitivity is assigned to geologic units known to contain paleontological localities with rare, well-preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleobiology and evolutionary history (phylogeny) of animal and plant groups. Generally speaking, highly sensitive formations produce vertebrate fossil remains or are considered to have the potential to produce such remains.

In Riverside County, High Paleontological Potential A is assigned to rock units present immediately at the surface, while High Paleontological Potential B is assigned to rock units found at a depth of 4 feet or greater below existing grade.

2.2.2 Low Potential/Sensitivity

Low sensitivity is assigned to geologic units that, based on their relative youthful age and/or high-energy depositional history, are judged unlikely to produce important fossil remains. Typically, low sensitivity formations produce invertebrate fossil remains in low abundance. Low paleontological potential is also assigned to geologic formations that are entirely igneous in origin and therefore have no potential for producing fossil remains, or to artificial fill materials which lose the stratigraphic/geologic context of any contained organic remains (e.g., fossils).

2.2.3 Undetermined Potential/Sensitivity

Undetermined sensitivity is assigned to geologic units that exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the geology and/or paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may be useful for more precisely determining the paleontological sensitivity.

2.3 Paleontological Impact Analysis

Direct impacts to paleontological resources occur when earthwork activities (e.g., mass grading, utility trenching), cut into the geologic units within which fossils are buried, and physically destroy the fossil remains. As such, only earthwork activities that will disturb potentially fossil-bearing sedimentary deposits (i.e., those rated with a high or undetermined paleontological sensitivity) have the potential to

significantly impact paleontological resources. Paleontological mitigation typically is recommended to reduce any negative impacts to paleontological resources to less than significant levels.

The purpose of the impact analysis is to determine which (if any) of the proposed Project-related earthwork activities may disturb potentially fossil-bearing geologic units, and where and at what depths this earthwork will occur. The paleontological impact analysis involved analysis of available project documents, and comparison with geological and paleontological data gathered during the records searches and literature review.

3.0 Existing Conditions: Geologic Setting

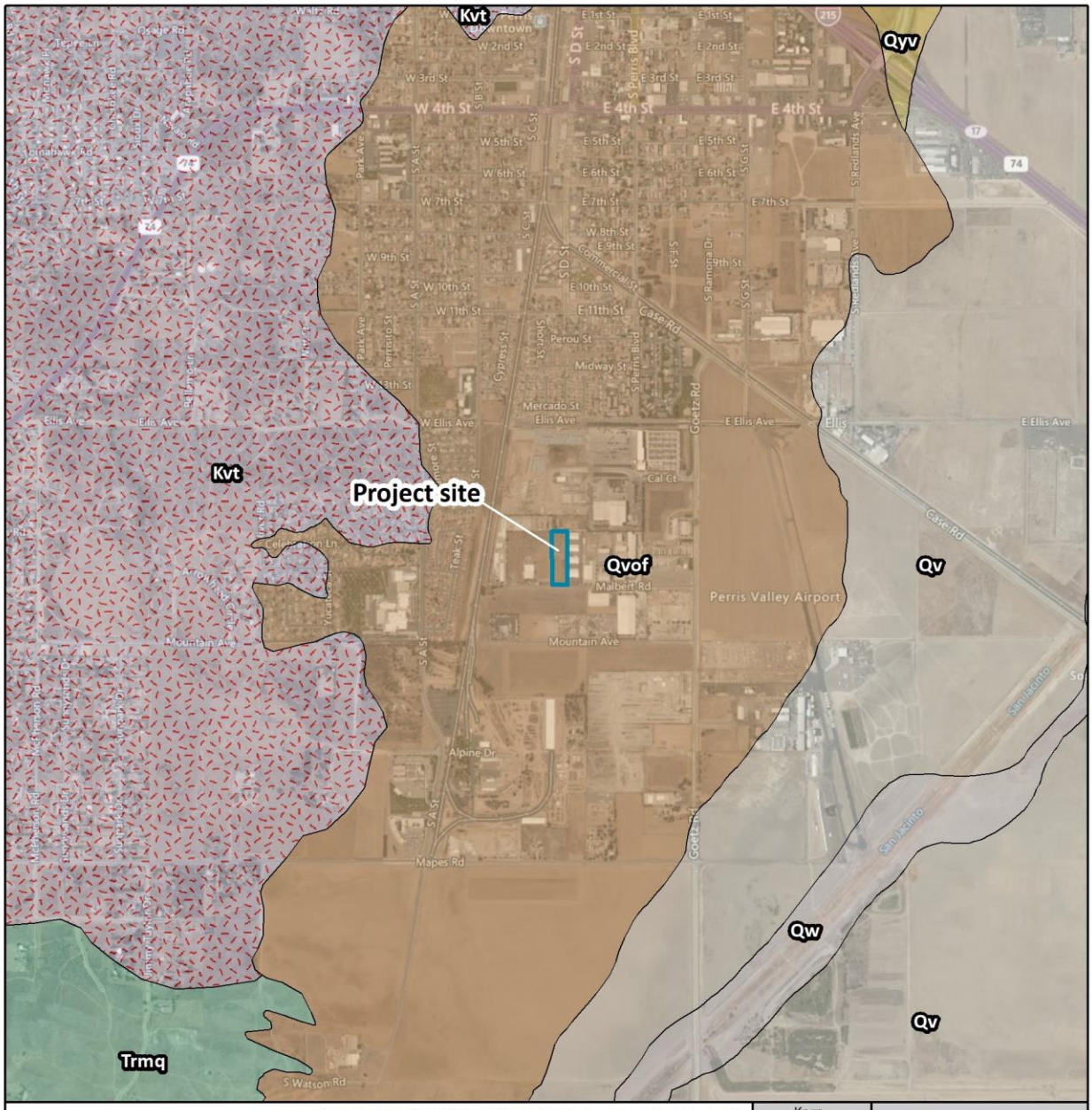
The proposed Project site is located within the Perris Block of the Peninsular Ranges Geomorphic Province (English, 1926; Norris and Webb, 1990). This structural block is surficially expressed as a relatively low relief, weathered basin punctuated by hills and small mountains and surrounded by the Sana Ana Mountains to the west and south, the San Jacinto Mountains to the east, and the San Gabriel and San Bernardino Mountains to the north. The Perris Block is a fault-controlled region, with the San Jacinto Fault to the northeast and the Elsinore Fault to the southwest. Faulting is responsible for uplifting the surrounding mountain ranges, and the down dropping of the Perris Block. As a consequence, the surrounding mountain ranges are actively being eroded and the sediments derived from this erosion are being deposited in the basin lowlands as alluvial fans and/or stream channel deposits. These surficial deposits overlie a deeply weathered mass of Cretaceous plutonic igneous rocks of the Peninsular Ranges Batholith and older metasedimentary basement rocks.

4.0 Results

4.1 Results of the Records Searches and Literature Review

4.1.1 Project Geology

The proposed Project site is situated in a lowland area underlain (at least at the surface) by deposits mapped as Quaternary alluvial sediments (Qa) by Dibblee and Minch (2003). In another study (Morton, 2003), the surficial geology of the Project site is mapped as Quaternary very old alluvial fan deposits (Qvof) of early Pleistocene age (Figure 2). These sediments were likely deposited by either the ancient San Jacinto River and/or one of its tributaries, or by local alluvial fans derived from the highlands to the west of the Project site. According to the Project geotechnical report (GeoTek, Inc., 2019), the alluvial sediments observed at the site are generally fine-grained and consist of “brown, orange, and olive, medium dense to very dense sands, with varying amounts of silt and trace amounts of clay and gravel.” The predominance of fine-grained deposits (sands) rather than coarser grained deposits (gravels) underlying the Project site is more consistent with low energy fluvial depositional conditions rather than the higher energy conditions of an alluvial fan.


Kvt
Qyv
Project site
Qvof
Qv
Perris Valley Airport
Qw
Qv
Trmq
Kvt
Geologic Map Units
Sources: Geology, Morton & Miller, 2006; Bing Maps Hybrid Imagery, Microsoft et al., 2019
Qv very young alluvial-valley deposits
Qw very young wash deposits
Qyv young alluvial-valley deposits
Qvof very old alluvial-fan deposits
Trmq rocks of Menifee Valley
Kvt Val Verde Pluton, tonalite
Project boundary
Kern
Los Angeles
San Bernardino
Orange
Riverside
map extent
San Diego
PaleoServices
FIGURE 2
Geologic Map
Malbert Street Warehouse
City of Perris, Riverside County, California
0
0.4
scale in miles
N

4.1.2 Project Paleontology

A records search request of paleontological collections data at the WSC generated a response that there are no recorded WSC fossil collection localities within a one mile radius of the proposed Project site (WSC, 2019). The same negative results were obtained from a search of the SDNHM paleontological collections records.

Despite the lack of recorded fossil collection sites from the immediate vicinity of the proposed Project, the WSC reports a large number of fossil collection localities from deposits of similar age and depositional setting discovered during construction of the Diamond Valley Lake Project less than 10 miles east of the City of Perris. Paleontological mitigation activities during mass grading for the reservoir resulted in the recovery of over 100,000 Pleistocene fossils, including skeletal remains of mastodon (*Mammut pacificus*), mammoth (*Mammuthus columbi*), saber-tooth cat (*Smilodon fatalis*), ancient horse (*Equus* sp.), and western camel (*Camelops hesternus*) (Springer et al., 2009, 2010).

4.2 Results of Paleontological Sensitivity Analysis

The City of Perris General Plan includes in its Conservation Element a discussion of paleontological resources as well as a citywide Paleontological Sensitivity Map. Based on this map, the proposed Project site is assigned Low to High Sensitivity (#5), which carries with it a low paleontological resource potential at depths from 0–5 feet below the modern ground surface and a high paleontological resource potential below the 5 foot depth threshold. The County of Riverside General Plan (County of Riverside, 2015), in contrast, assigns the deposits underlying the Project site a high sensitivity (category B), indicating that fossils are likely to be encountered at or exceeding a depth threshold of 4 feet below the modern ground surface.

4.3 Results of Paleontological Impact Analysis

The proposed Project will involve construction of three single-story buildings, which will be supported by conventional slab-on-grade shallow foundation systems. In addition, there are also plans for construction of parking lots and driveways, and installation of underground wet and dry utilities. As mentioned in the geotechnical report, there are also plans to construct underground detention chambers for storm water infiltration and water storage. Preliminary designs suggest that the storm water detention chambers will likely require excavation to depths of ~7 to 8 feet below the existing ground surface.

Based on these proposed construction elements, it is likely that mass grading for the slab-on-grade building foundations and attendant parking lots and driveways will be shallower than the 5 foot depth threshold established by the City of Perris and the 4 foot depth threshold established by the County of Riverside. This review indicates that impacts to paleontological resources are not likely to occur during the surficial phase of mass grading. However, earthwork related to installation of deep utilities and construction of the storm water detention chambers will extend below the 5 foot depth threshold, and thus have the potential to directly impact paleontological resources.


Project site
Malbert Rd
Malbert Rd
Mountain Ave
S B St
S B St
Kern
Los Angeles
San Bernardino
Orange
Riverside
map extent
San Diego
Sources: Bing Maps Hybrid Imagery, Microsoft et al., 2019
Paleontological Sensitivity Rating
low to high sensitivity (City of Perris);
high sensitivity (category B) (County of Riverside)
Project boundary
PaleoServices
FIGURE 3
Paleontological Sensitivity Map
Malbert Street Warehouse
City of Perris, Riverside County, California
0
0.05
scale in miles
N

5.0 Recommendations & Conclusions

Implementation of a paleontological mitigation program, in the form of paleontological monitoring, is recommended for deep utility and storm water detention chamber earthwork at the Project site that will directly impact Quaternary very old alluvial fan deposits. Implementation of the following mitigation measures will reduce any Project-related impacts to paleontological resources to a level that is less than significant.

5.1 Mitigation Measures

1. A qualified Project Paleontologist should attend the pre-construction meeting to consult with grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues.

   A qualified Project Paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology that is experienced with paleontological procedures and techniques, who is knowledgeable in the geology and paleontology of Riverside County, and who has worked as a paleontological mitigation project supervisor for at least 1 year.

2. A paleontological monitor should be on-site during all earthwork operations at or exceeding 5 feet below surface grade (i.e., trenching for deep utilities and excavations for the storm water detention chambers) that directly impact Quaternary very old alluvial fan deposits. The paleontological monitor should be equipped to salvage fossils as they are unearthed (including bulk matrix samples containing microvertebrate fossils) to avoid construction delays. Paleontological monitoring may be reduced (e.g., part-time monitoring or spot-checking) or eliminated, at the discretion of the Project Paleontologist and in consultation with appropriate agencies (e.g., City of Perris representatives). Changes to the paleontological monitoring schedule shall be based on the results of the mitigation program as it unfolds during site development, and current and anticipated conditions in the field.

   A paleontological monitor is defined as an individual with a college degree in paleontology or geology who has experience in the recognition and salvage of fossil materials. The paleontological monitor should work under the direction of a Project Paleontologist.

3. If fossils are discovered, the Project Paleontologist (or paleontological monitor) should make an initial assessment to determine their significance. All identifiable vertebrate fossils (large or small), uncommon invertebrate, plant, and trace fossils are considered to be significant and should be recovered (SVP, 2010). Representative samples of common invertebrate, plant, and trace fossils should also be recovered. Although fossil salvage can often be completed in a relatively short period of time, the Project Paleontologist (or paleontological monitor) should be allowed to temporarily direct, divert, or halt earthwork during the initial assessment phase. If it is determined that the fossil(s) should be recovered, all effort should be made to complete the recovery in a timely manner. It is important to keep in mind that some fossil specimens (e.g., a large mammal skeleton) may require an extended salvage period. Because of the potential for the recovery of small fossil remains (e.g., isolated teeth of small vertebrates), it may be necessary to collect bulk-matrix samples for screen washing.

4. In the event that fossils are discovered during a period when a paleontological monitor is not on site (i.e., an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt, and the Project Paleontologist contacted to evaluate the significance of the discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outlined in Mitigation Measure 3.

5. Fossil remains collected during monitoring and salvage should be cleaned, repaired, sorted, taxonomically identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing of bulk matrix samples for microfossils or other laboratory analyses (e.g., radiometric carbon dating), if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist, at an appropriate outside agency, and/or at the designated repository, and shall follow the standards of the designated repository.
6. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, should be housed in an established, accredited museum repository with permanent, retrievable paleontological storage (e.g., Western Science Center). These procedures are also essential steps in effective paleontological mitigation and CEQA compliance. The Project Paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not complete until such curation into an established, accredited museum repository has been fully completed and documented.
7. A final summary report should be completed that outlines the results of the mitigation program. The report and inventory, when submitted to the appropriate Lead Agency, along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontologic resources. A copy of the paleontological monitoring report should be submitted to the City of Perris and to the designated museum repository.

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Appendix

Records Search Results: Western Science Center

WESTERN SCIENCE CENTER

October 17, 2019

San Diego Natural History Museum
Dr. Thomas Deméré
P.O. Box 121390
San Diego, CA 92112-1390

Dear Dr. Deméré,

This letter presents the results of a record search conducted for the Perris Regional Compassionate Center Project in the city of Perris, Riverside County, California. The project site consists of roughly 2.75 acres of land south of East Ellis Avenue, north of Malbert Street, and west of Goetz Road located in Section 6, Township 4 South, and Range 3 West on the Perris USGS 7.5 minute quadrangle.

The geologic units underlying the project area are mapped entirely as very old alluvial-fan deposits dating from the early Pleistocene epoch (Morton, 1991, 1995-1996). Pleistocene alluvial units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or within a 1 mile radius, but does have numerous localities associated with the Diamond Valley Lake Project in similarly mapped sediments less than 10 miles to the east. The Diamond Valley Lake project resulted in over one hundred thousand Pleistocene fossils and hundreds of fossil localities, including those associated with mastodon (*Mammut pacificus*), mammoth (*Mammuthus columbi*), saber-tooth cat (*Smilodon fatalis*), ancient horse (*Equus sp.*), camel (*Camelops hesternus*), and many more.

Any fossil specimen recovered from the Perris Regional Compassionate Center Project would be scientifically significant. Excavation activity associated with the development of the project area would impact the paleontologically sensitive Pleistocene alluvial units and it is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils associated with the study area.

If you have any questions, or would like further information about the Diamond Valley Lake Project, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford
Collections Manager