Appendix A

Air Quality, Global Climate Change, and Energy Impact Analysis

RIOS PROJECT
AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Palm Springs

March 10, 2022

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

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Project No. 19476

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EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed RIOS 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).

Given the temporary and short-term construction schedule, the project would not result in a long-term (i.e., lifetime or 30-year) exposure to TACs 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. Therefore, impacts from TACs during construction would be less than significant.

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

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 or toxic air contaminant (TAC) impacts 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 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 would not exceed either the SCAQMD draft screening threshold of 3,000 MTCO2e per year for all land uses.

Furthermore, the project's GHG emissions would not exceed the SCAQMD screening threshold (based on EO S-3-05). The project would not conflict with the goals of AB-32, SB-32, or the City of Palm Springs Climate Action Plan; therefore, the project's GHG emissions are less than significant and would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Energy

For new development such as that proposed by the RIOS 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 residential 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. Impacts are considered to be less than significant.

1. INTRODUCTION

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

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. 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
- 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
- analysis of the project's energy use during construction and operation
- recommendations for mitigation measures

The City of Palm Springs is the lead agency for this air quality and GHG analysis, in accordance with the CEQA authorizing legislation. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to air quality and global climate change.

PROJECT LOCATION

The 2.4-acre project site is located at 575 North Palm Canyon Drive in the City of Palm Springs, California. The project site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a mixed-use development consisting of 24 condominium units and 2,214 square feet of commercial space (spa, yoga studio, gym). Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated to be operational in 2024. The project is anticipated to be built in one phase with project construction to start no sooner than the beginning of November 2022 and being completed by early May 2024. Even if construction was to occur any time after the respective dates, the analysis represents "worst-case" since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[1]

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

[1] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2020.4.0, Section 4.3.2 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

(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 existing single-family residential uses located approximately 50 feet (~15 meters) to the west (across Belardo Road), the multi-family residential uses located approximately 30 feet (~9 meters) to the north (across the utility easement adjacent to the north), and the transient lodging use located approximately 170 feet (~52 meters) to the northeast of the project site (across intersection of N Palm Canyon Drive and E Granvia Valmonte). Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

Figure 1. Project Location Map

Figure 2. Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project is located within the City of Palm Springs and is within the Salton Sea Air Basin (SSAB). The middle part of Riverside County (between San Gorgonio Pass and Joshua Tree National Monument) is included in the Salton Sea Air Basin (SSAB), along with all of Imperial County. Air quality conditions in this portion of the County, although in the SSAB, are also administered by the SCAQMD. The SCAQMD is responsible for the development of the regional Air Quality Management Plan and efforts to regulate pollutant emissions from a variety of sources.

The SSAB-portion of Riverside County is separated from the South Coast Air Basin region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains. During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

The Coachella Valley is a geographically and meteorologically unique area wholly contained within the Salton Sea Air Basin. The region is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins to the west, primarily ozone, and locally generated PM10. The mountains surrounding the region isolate the Valley from coastal influences and create a hot and dry low-lying desert (see Table 1). As the desert heats up it draws cooler coastal air through the narrow San Gorgonio Pass, generating strong and sustained winds that cross the fluvial (water caused) and aeolian (wind) erosion zones in the Valley. These strong winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat.

The City of Palm Springs, in relation to other areas in Southern California, has good air quality. In the past few decades, however, noticeable deterioration of air quality has occurred due to increased development and population growth, traffic, construction activity, and various site disturbances. It is apparent that although air pollution is emitted from various sources in the Coachella Valley, substantial degradation of air quality may be attributed primarily to sources outside of the Valley.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	70.6	74	80.6	87.7	95.6	103.4	108	107	101.5	91.1	76	69.8
Avg. Min. Temperature	45.3	48	52.3	57.5	64.4	71	77.3	77.4	71.5	62.4	50.3	44.8
Avg. Total Precipitation (in.)	1.17	1.04	0.52	0.08	0.02	0.03	0.13	0.29	0.21	0.26	0.32	0.92

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635
Data from the Palm Springs, CA station (046635).

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 O_3. Ground-level O_3 is the primary constituent of smog. Sunlight and hot weather cause ground-level O_3 to form with the greatest concentrations usually occurring downwind from urban areas. O_3 is subsequently considered a regional pollutant. Ground-level O_3 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 O_3 precursors, the health effects associated with O_3 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 [SO_2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolve 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 O_3. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants (TACs)

In addition to the above-listed criteria pollutants, TACs are another group of pollutants of concern. Sources of TACs 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 TACs. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs 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 TACs with varying degrees of toxicity. Sources of TACs 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 TACs 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 TAC 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 TAC 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 Asbestos Mountain in the San Jacinto Valley; approximately 15 miles southeast of the site. 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 (USEPA) is responsible for setting and enforcing the 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 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 (CalEPA), 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 CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The 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. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026, and apply to both passenger cars and light trucks. CARB also sets fuel specifications to further reduce vehicular emissions.

The Salton Sea Air Basin has been designated by the CARB as a nonattainment area for ozone and PM-10. Currently, the Salton Sea Air Basin is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles (PM-2.5) 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 TACs. 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.

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 TACs for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and TACs, 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 TACs 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

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Salton Sea 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.

South Coast Air Quality Management District

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. It has responded to this requirement by preparing a sequence of AQMPs. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

Air Quality Management Plan

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this AQMP is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

On June 21, 2002, the SCAQMD adopted the 2002 Coachella Valley PM10 State Implementation Plan (CVSIP). The 2002 CVSIP, which included a request for extension of the PM10 deadline and met all applicable federal Clean Air Act requirements, including a Most Stringent Measures analysis, control measures, and attainment demonstration. U.S. EPA approved the 2002 CVSIP on April 18, 2003. At the time of adoption, the AQMD committed to revising with the 2002 CVSIP with the latest approved mobile source emissions estimates, planning assumptions and fugitive dust source emission estimates, when they became available.

The 2003 CVSIP updates those elements of the 2002 CVSIP; the control strategies and control measure commitments have not been revised and remain the same as in the 2002 CVSIP. The 2003 CVSIP contains updated emissions inventories, emission budgets, and attainment modeling. It requests that U.S. EPA replace the approved transportation conformity budgets in the 2002 CVSIP with those in the 2003 CVSIP. U.S. EPA approved these budgets on March 25, 2004 with an effective date of April 9, 2004.

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

SCAQMD Rules and Regulations

During construction and operation, the project must comply with applicable rules and regulations. The following are rules that the project <u>may</u> be required to comply with, either directly, or indirectly:

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.
- 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 403.1 is supplemental to Rule 403 requirements and shall apply only to fugitive dust sources in the Coachella Valley.

(d) General Requirements of 403.1

(1) Any person who is responsible for any active operation, open storage pile, or disturbed surface area, and who seeks an exemption pursuant to Rule 403, paragraph (g)(2) shall be required to determine when wind speed conditions exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(2) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new man-made deposits of bulk material within 24 hours of making such bulk material deposits. Stabilization procedures shall include one or more of the following: (A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there is evidence of wind driven fugitive dust; or (B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least 6 months; or

(3) Installation of wind breaks of such design so as to reduce maximum wind gusts to less than 25 miles per hour in the area of the bulk material deposits. (3) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new deposits of bulk material originating from off-site undisturbed natural desert areas within 72 hours.

Stabilization procedures shall include one or more of the following: (A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there is evidence of wind driven fugitive dust; or (B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least six months.

(4) A person who conducts or authorizes the conducting of an active operation shall implement at least one of the control actions specified in Rule 403, Table 2 for the source category "Inactive Disturbed Surface Areas" to minimize wind driven fugitive dust from disturbed surface areas at such time when active operations have ceased for a period of at least 20 days.

(5) Any person involved in agricultural tilling or soil mulching activities shall cease such activities when wind speeds exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(e) Fugitive Dust Control Plan and Other Requirements for Construction Projects/Earth-Moving Activities
(1) Any person who conducts or authorizes the conducting of an active operation with a disturbed surface area of more than 5,000 square feet shall not initiate any earth-moving activities unless a fugitive dust control plan is prepared and approved by the Executive Officer in accordance with the requirements of subdivision (f) and the Rule 403.1 Implementation Handbook. These provisions shall not apply to active operations exempted by paragraph (i)(4).

(2) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall maintain a complete copy of the approved fugitive dust control plan on-site in a conspicuous place at all times and the fugitive dust control plan must be provided upon request.

(3) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall install and maintain signage with project contact information that meets the minimum standards of the Rule 403.1 Implementation Handbook prior to initiating any type of earth-moving activities.

(4) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) for a project with a disturbed surface area of 50 or more acres shall have an Dust Control Supervisor that: (A) is employed by or contracted with the property owner or developer; and (B) is on-site or is available to be on-site within 30 minutes of initial contact; and (C) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 and 403.1 requirements; and (D) has completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class.

(5) Failure to comply with any of the provisions of an approved fugitive dust control plan shall be a violation of this rule.

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 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 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).

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.

SCAQMD Rule 2305

The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program aims to reduce nitrogen oxide and diesel emissions associated with warehouses, help meet federal standards and improve public health. The WAIRE Program is an indirect source rule that regulates warehouse facilities to reduce emissions from the goods movement industry. Owners and operators of warehouses that have 100,000 square feet or more of indoor floor space in a single building must comply with the WAIRE Program. WAIRE is a menu-based point system in which warehouse operators are required to earn a specific number of points every year. The yearly number of points required is based on the number of trucks trips made to and from the warehouse each year, with larger trucks such as tractors or tractor-trailers multiplied by 2.5. Warehouse operators may be exempt from parts of the rule if they operate less than 50,000 square feet of warehousing activities, if the number of points required is less than 10, or if the WAIRE menu action chosen under performs due to circumstances beyond the operator's control, such as a manufacturer defect. SCAQMD Rule 316 establishes fees to fund Rule 2305 compliance activities.

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 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[2]. The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

Southern California Association of Governments

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.

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

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.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. It 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.

Coachella Valley Model Dust Control Ordinance (see also SCAQMD Rule 403.1)

The Coachella Valley Dust Control Ordinance was designed to establish minimum requirements for construction and demolition activities and other specified sources in order to reduce man-made fugitive dust and the corresponding PM10 emissions. The Ordinance establishes following rules associated with reducing the fugitive dust emissions associated with the project:

Section 400 Control Requirements

<u>410. Work Practices – All Fugitive Dust Sources</u>

1. No operator shall conduct any potential dust-generating activity on a site unless the operator utilizes one or more Coachella Valley Best Available Control Measures, as identified in the Coachella Valley Fugitive Dust Control Handbook for each fugitive dust source such that the applicable performance standards are met.

2. Any operator involved in any potential dust-generating activity on a site with a disturbed surface area greater than one acre shall, at a minimum, operate a water application system as identified in the Coachella Valley Fugitive Dust Control Handbook, if watering is the selected control measure.

<u>Performance Standards and Test Methods</u>

3. No person subject to the requirements contained in Section 410.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

<u>420. Construction and Demolition Activities</u>

1. Any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive

Dust Control Plan has been prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City (County).

2. A complete copy of the approved Fugitive Dust Control Plan must be kept on-site in a conspicuous place at all times and provided to the City (County) and AQMD upon request.

4. Any operator involved in earth-moving operations shall implement at least one of the following short-term stabilization methods during non-working hours:

   A. maintaining soils in a damp condition as determined by sight or touch; or
   B. establishment of a stabilized surface through watering; or
   C. application of a chemical dust suppressant in sufficient quantities and concentrations to maintain a stabilized surface.

5. Within 10 days of ceasing activity, an operator shall implement at least one of the following long-term stabilization techniques for any disturbed surface area where construction activities are not scheduled to occur for at least 30 days:

   A. revegetation that results in 75 percent ground coverage provided that an active watering system is in place at all times; or
   B. establishment of a stabilized surface through watering with physical access restriction surrounding the area; or
   C. use of chemical stabilizers to establish a stabilized surface with physical access restriction surrounding the area.

6. Any operator shall remove all bulk material track-out from any site access point onto any paved road open to through traffic:

   A. within one hour if such material extends for a cumulative distance of greater than 25 feet from any site access point; and
   B. at the conclusion of each workday.

7. Any operator of a project with a disturbed surface area of five or more acres or of any project that involves the import or export of at least 100 cubic yards of bulk material per day shall install and maintain at least one of the following control measures at the intersection of each site entrance and any paved road open to through traffic with all vehicles exiting the site routed over the selected device(s):

   A. pad consisting of minimum one-inch washed gravel maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long; or
   B. paved surface extending at least 100 feet and at least 20 feet wide; or
   C. wheel shaker / wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least three inches tall and at least six inches apart and 20 feet long.

8. Any operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall install and maintain project contact signage that meets the minimum standards of the Coachella Valley Fugitive Dust Control Handbook, including a 24-hour manned toll-free or local phone number, prior to initiating any type of earth-moving operations.

9. Any operator of a project with a disturbed surface area of 50 or more acres shall have an Environmental Observer on the site or available on-site within 30 minutes of initial contact that:

   A. is hired by the property owner or developer; and
   B. has dust control as the sole or primary responsibility; and

C. has successfully completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a Certificate of Completion for the class; and
D. is identified in the approved Fugitive Dust Control Plan as having the authority to immediately employ sufficient dust mitigation 24-hours per day, seven days a week and to ensure compliance with this ordinance, the approved Fugitive Dust Control Plan, and AQMD regulations.

Performance Standards and Test Methods

10. No operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

11. Exceedance of the visible emissions prohibition in Section 420.10 occurring due to a high-wind episode shall constitute a violation of Section 420.10, unless the operator demonstrates to City (County) all the following conditions:

A. all Fugitive Dust Control Plan measures or applicable Coachella Valley Best Available Control Measures were implemented and maintained on-site; and
B. the exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures; and
C. appropriate recordkeeping was compiled and retained in accordance with the requirements in Section 420.12 through 420.15; and
D. documentation of the high-wind episode on the day(s) in question is provided by appropriate records.

Reporting / Recordkeeping

Before Construction

12. The operator of a project with ten acres or more of earth-moving operations shall:

A. forward two copies of a Site-Specific, Stand Alone [8½ by 11 inch] Fugitive Dust Control Plan to the AQMD within ten days after approval by the City (County). [Note: A separate AQMD approval will not be issued]; and
B. notify the City (County) and the AQMD at least 24-hours prior to initiating earth-moving operations.

During Construction

13. Any operator involved in earth-moving operations shall compile, and maintain for a period of not less than three years, daily self-inspection recordkeeping forms in accordance with the guidelines contained in the Coachella Valley Fugitive Dust Control Handbook.

14. Any operator involved in earth-moving operations that utilizes chemical dust suppressants for dust control on a site shall compile records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application and shall retain such records for a period of not less than three years.

After Construction

15. Any operator subject to the provisions of Section 420.12 shall notify the City (County) and the AQMD within ten days of the establishment of the finish grade or at the conclusion of the finished grading inspection.

430. Disturbed Vacant Lands / Weed Abatement Activities

1. Owners of property with a disturbed surface area greater than 5,000 square feet shall within 30 days of receiving official notice by the City (County) prevent trespass through physical access restriction as permitted by the City (County).

2. In the event that implementation of Section 430.1 is not effective in establishing a stabilized surface within 45 days of restricting access, the owner shall implement at least one of the following long term stabilization techniques within an additional 15 days, unless the City (County) has determined that the land has been restabilized:

   A. uniformly apply and maintain surface gravel or chemical dust suppressants such that a stabilized surface is formed; or
   B. begin restoring disturbed surfaces such that the vegetative cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions. Such restoration control measure(s) must be maintained and reapplied, if necessary, such that a stabilized surface is formed within 8 months of the initial application.

3. Any operator conducting weed abatement activities on a site that results in a disturbed surface area of 5,000 or more square feet shall:

   A. apply sufficient water before and during weed abatement activities such that the applicable performance standards are met.
   B. ensure that the affected area is a stabilized surface once weed abatement activities have ceased.

<u>Performance Standards and Test Methods</u>

4. No person subject to the provisions of Sections 430.1 through 430.3 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from a source, or cross any property line, and shall either:

   A. maintain a stabilized surface; or
   B. maintain a threshold friction velocity for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or higher.

<u>Reporting / Recordkeeping</u>

5. Within 90 days of ordinance adoption, operators of property with disturbed surface area of 5,000 or more square feet shall notify the City (County) of the location of such lands and provide owner contact information.

6. Any person subject to the provisions of Sections 430.1 through 403.3 shall compile, and retain for a period of not less than three years, records indicating the name and contact person of all firms contracted with for dust mitigation, listing of dust control implements used on-site, and invoices from dust suppressant contractors/vendors.

460. Public or Private Paved Roads

1. Any owner of paved roads shall construct, or require to be constructed all new or widened paved roads in accordance with the following standards:

   A. curbing in accordance with the American Association of State Highway and Transportation Officials guidelines or as an alternative, road shoulders paved or treated with chemical dust suppressants or washed gravel in accordance with the performance standards included in Section 440.4 with the following minimum widths:

Average Daily Trips	Minimum Shoulder Width
500 - 3,000	4 feet
3,000 or greater	8 feet

Section 500 Administrative Requirements

1. Any operator preparing a Fugitive Dust Control Plan shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

2. At least one representative of each construction or demolition general contractor and subcontractor responsible for earth-movement operations shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

3. All reporting / recordkeeping required by Section 420 shall be provided to the City (County) and AQMD representatives immediately upon request.

4. All reporting / recordkeeping required by Section 430 through Section 460 shall be provided to the City (County) and AQMD representatives within 24-hours of a written request.

Local – City of Palm Springs

Local jurisdictions, such as the City of Palm Springs, 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.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The Air Quality Element of the Palm Springs 2007 General Plan includes goals and policies related to air quality that are applicable to the proposed project. The applicable goals and policies from the Air Quality Element have been included below.

Goal AQ1
Improve regional air quality to protect the health of the community.

Goal AQ2

Control suspended particulate matter emissions from human activity or from erosion of soil by wind.

Policies

AQ2.1 Require those projects meeting specialized criteria as identified in the Zoning Ordinance to submit a Fugitive Dust Control Plan prior to the issuance of grading or building permits.

AQ2.2 Encourage the use of landscaping, vegetation, and other natural materials to trap particulate matter or control other pollutants. Establish windbreaks immediately downwind of large open spaces. Tree species used for windbreaks should be drought tolerant.

AQ2.3 Reduce the transport of blowsand adjacent to paved roadways and residential areas through the use of chemically stabilizing soil surfaces or snow fence windbreaks. Chemical stabilizing measures should only be used in areas where they will not impact endangered habitats or species.

AQ2.4 Continue to remove blowsand from City streets and relocate it downwind on a regular and post event basis as part of routine street-cleaning programs.

AQ2.5 Prohibit the use of off-road vehicles in blowsand areas.

AQ2.6 Prohibit the transport of earth/soil through the City when wind gusts exceed 25 miles per hour per the City's PM10 Ordinance.

AQ2.7 Require the planting of vegetative ground covers as soon as possible on construction sites.

AQ2.8 Consider adding provisions to the City's Municipal Code to phase out the use of gas-powered lawn mowers and replace them with electric mowers and to prohibit the use of leaf blowers.

AQ2.9 Phase mass grading in a way that minimizes, to the greatest extent possible, the exposure of large expanses of graded areas to wind that causes blowing sand.

AQ2.10 Encourage that landscape plans submitted with new development take into consideration drought tolerance and pollen generation through the selection of appropriate plantings.

Goal AQ3

Protect people and land uses that are sensitive to air contaminants from sources of air pollution to the greatest extent possible.

Policies

AQ3.1 Discourage the development of land uses and the application of land use practices that contribute significantly to the degradation of air quality.

AQ3.2 Carefully consider the placement of sensitive land uses (schools, residences, daycare, medical uses, etc.) in proximity to sources of air contaminants that pose significant health risks.

Goal AQ4

Reduce vehicular emissions.

Policies

AQ4.1 Encourage the use of mass transit, carpooling, and other transportation options, including alternative-fuel vehicles and bicycles, to reduce vehicular trips.

AQ4.4 Encourage walking or bicycling for short-distance trips through the creation of pedestrian-friendly sidewalks and street crossings and efficient and safe bikeways.

AQ4.5 Integrate land use and transportation planning to the greatest extent possible.

AQ4.6 Encourage the development of mixed-use and multi-use projects.

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: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf

Table 3
Salton Sea Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Unclassified/Attainment
Nitrogen dioxide	Attainment	Unclassified/Attainment
Sulfur dioxide	Attainment	Unclassified/Attainment
PM10	Nonattainment	Nonattainment
PM2.5	Attainment	Unclassified/Attainment

Source (Federal and State Status): California Air Resources Board December 2018, October 2020.

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 AQMP 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 SCAQMD has 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project is within Source Receptor Area 30, Coachella Valley. SCAQMD operates two air monitoring stations in SRA 30, one in Indio, California, approximately 20.87 miles southeast of the project site and the other in Palm Springs, California, approximately 1.46 miles northeast of the project site. The Palm Springs monitoring station was used to collect monitoring data. Table 4 presents the monitored pollutant levels from the Palm Springs Station. However, it should be noted that due to the air monitoring stations distances 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 2018 through 2020 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 standards.

Ozone

During the 2018 to 2020 monitoring period, the State 1-hour concentration standard for ozone was exceeded between five and 11 days each year at the Palm Springs Station. The State 8-hour ozone standard has been exceeded between 39 and 58 days each year over the past three years at the Palm Springs Station. The Federal 8-hour ozone standard was exceeded between 34 and 56 days each year over the past three years at the Palm Springs Station.

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

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Palm Springs Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

The Palm Springs 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 was exceeded for only one day in 2019 over the last three years at the Palm Springs Station. The Federal 24-hour standards for PM10 were exceeded for only two days in 2018 over the last three years at the Palm Springs Station.

During the 2018 to 2020 monitoring period, the Federal 24-hour standard for PM2.5 was not exceeded at the Palm Springs Station.

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 2018	2019	2020
Ozone:	Maximum 1-Hour Concentration (ppm)	0.111	0.100	0.119
	Days > CAAQS (0.09 ppm)	**11**	**5**	**9**
	Maximum 8-Hour Concentration (ppm)	0.099	0.085	0.094
	Days > NAAQS (0.070 ppm)	**56**	**34**	**49**
	Days > CAAQS (0.070 ppm)	**58**	**39**	**53**
Carbon Monoxide:[2]	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)	0.043	0.041	0.047
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	422.3	75.6	129.8
	Days > NAAQS (150 µg/m3)	**2**	0	0
	Days > CAAQS (50 µg/m3)	0	**1**	0
	Annual Average (µg/m3)	22.9	20.7	23.2
Ultra-Fine Particulates (PM2.5):[2]	Maximum 24-Hour Concentration (µg/m3)	30.2	15.5	23.9
	Days > NAAQS (35 µg/m3)	0	0	0
	Annual Average (µg/m3)	6	6	6.4

Notes:
Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Palm Springs - Fire Station Monitoring Station, unless otherwise noted.
(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million
* 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;
- 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.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[3] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.
- Cause the emission of TACs

AIR-5: Create objectionable odors affecting a substantial number of people.

[3] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook. In the interim, supplemental guidance has been adopted by the SCAQMD. The potential air quality impacts of the project are, therefore, evaluated according to numeric indicators developed by the SCAQMD in the CEQA Air Quality Handbook and supplemental guidance from the SCAQMD.[4]

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 Significance Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significance Thresholds Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significance Thresholds Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5. Under the LST methodology, local air quality emissions from the project were analyzed using the SCAQMD's Mass Rate Localized Significance Thresholds Look-up Tables.

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 Significance 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

[4] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

[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.

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 18 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

Operation

The project proposes to develop the site with residential and commercial land uses. Therefore, the project is not anticipated be a source of toxic air contaminants and sensitive receptors would not be exposed to toxic sources of air pollution.

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.

If 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.

Table 5
SCAQMD Air Quality Significance Thresholds for Coachella Valley

Mass Daily Thresholds[1,2]		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	100
VOC	75	75
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	

Notes:
(1) Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf
(2) Construction thresholds apply to both the South Coast Air Basin and Coachella Valley. For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, TAC 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: site preparation to remove existing vegetation; grading of approximately 2.4 acres; construction of 24 multi-family residential dwelling units and 2,214 square feet of commercial use totaling 76,053 square feet (with a building footprint of 46,686 square feet) and 54,161 square feet of open space; paving of a parking lot with 16 guest parking spaces; and application of architectural coatings. The grading phase is anticipated to include approximately 638 cubic yards of import. See Appendix B of this report for more details.

Per the project applicant, the 2,214 square foot commercial space will include uses such as a spa, yoga studio, and gym. Therefore, this use was modeled in CalEEMod as a Health Club.

The proposed project is anticipated to start construction no sooner than the beginning of November 2022, taking approximately eighteen months to complete, with completion estimated early May 2024. The project is anticipated to be operational in 2024.

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 2020.4.0) 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 EMFAC2017 computer program to calculate the emission rates specific for the Salton Sea Air Basin portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2017 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. 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 Rules 403 and 403.1 establish these procedures. Compliance with these rules is

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

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 and stabilizing ground cover on finished sites. SCAQMD's Rule 403 and 403.1 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 Rules 403 and 403.1 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the proposed project.

In addition, any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City. It is anticipated that this project will obtain and prepare the required Fugitive Dust Control Plan.

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

The phases of the construction activities which have been analyzed below for each phase are: (1) site preparation, (2) grading, (3) building construction, (4) paving, and (5) 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 Salton Sea portion of 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 TACs; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. The Appendix A Calculation Details for CalEEMod prepared by CAPCOA (October 2017) provides equipment-specific grading rates. 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 site preparation and grading. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significance Thresholds 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 Coachella Valley source receptor area (SRA) 30 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. The nearest sensitive receptors to the project site are the existing single-family residential uses located approximately 50 feet (~15 meters) to the west, the multi-family residential uses located approximately 30 feet (~9 meters) to the north, and the transient lodging use located approximately 170 feet (~52 meters) to the northeast of the project site; therefore, the SCAQMD Look-up Tables for 25 meters were 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.

Construction-Related Human Health Impacts

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

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for TAC 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 18 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.

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.

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.

Table 6
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Site Preparation	On-Site[1]	1.38	15.67	10.06	0.02	1.22	0.61
	Off-Site[2]	0.03	0.02	0.25	0.00	0.07	0.02
	Subtotal	1.41	15.68	10.30	0.03	1.28	0.63
Grading	On-Site[1]	1.54	16.98	9.22	0.02	3.51	2.02
	Off-Site[2]	0.06	1.22	0.56	0.01	0.25	0.08
	Subtotal	1.60	18.20	9.78	0.03	3.76	2.10
Building Construction	On-Site[1]	1.86	14.60	14.35	0.03	0.70	0.67
	Off-Site[2]	0.16	0.54	1.50	0.01	0.43	0.12
	Subtotal	2.02	15.15	15.85	0.03	1.13	0.79
Paving	On-Site[1]	0.86	8.10	11.71	0.02	0.40	0.37
	Off-Site[2]	0.04	0.03	0.40	0.00	0.13	0.03
	Subtotal	0.90	8.13	12.11	0.02	0.52	0.40
Architectural Coating[3]	On-Site[1]	16.46	1.22	1.81	0.00	0.06	0.06
	Off-Site[2]	0.03	0.02	0.24	0.00	0.08	0.02
	Subtotal	16.49	1.23	2.05	0.00	0.14	0.08
Total for overlapping phases[4]		**19.41**	**24.51**	**30.01**	**0.05**	**1.79**	**1.27**
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2020.4.0

(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site demolition and 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) Architectural coatings include compliance with SCAQMD Rule 1113 limiting architectural coatings to 50 g/L VOC for buildings and 100 g/L VOC for parking lot striping.

(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
Site Preparation	Crawler Tractors1	1	0.5	0.5
	Graders	1	0.5	0.5
	Scrapers	1	1	1
	Phase Total	**-**	**-**	**2**
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors[1]	2	0.5	1
	Phase Total	**-**	**-**	**2**

Notes:
Source: California Air Pollution Control Officers Association (CAPCOA), Appendix A Calculation Details for CalEEMod prepared (October 2017).
(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	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Site Preparation	15.67	10.06	1.22	0.61
Grading	16.98	9.22	3.51	2.02
Building Construction	14.60	14.35	0.70	0.67
Paving	8.10	11.71	0.40	0.37
Architectural Coating	1.22	1.81	0.06	0.06
SCAQMD Thresholds[2]	191	1,299	7	5
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 25 meters in SRA 30 Coachella Valley.

(1) The nearest sensitive receptors are the existing single-family residential uses located approximately 50 feet (~15 meters) to the west, the multi-family residential uses located approximately 30 feet (~9 meters) to the north, and the transient lodging use located approximately 170 feet (~52 meters) to the northeast of the project site; therefore, the 25 meter threshold was utilized.

Note: The project will disturb up to a maximum of 2 acres a day during site preparation and grading (see Table 7).

Long-Term Operational Emissions

The 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 operating emissions were based on the year 2024, which is the anticipated opening year for the proposed project. 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. A traffic analysis was not completed for the proposed project; therefore, to be conservative, vehicle trips associated with the proposed project were estimated from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2021) (see Appendix B). The vehicle trips associated with the proposed project have been analyzed by inputting the estimated project-generated vehicular trips (trip generation rate) into the CalEEMod Model. The ITE Trip Generation Manual shows that the proposed project would create approximately 238 weekday vehicle trips per day and 185 weekend vehicle trips per day. The multi-family residential use generates trip generation rates of 6.74 trips per dwelling unit per day on weekdays and 4.55 trips per dwelling unit per day on weekends, while the commercial use generates 34.5 trips per thousand square foot per day on both weekdays and weekends. The program then applies the emission factors for each trip which is provided by the EMFAC2017 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.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above, 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 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak CO 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 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, per the ITE Trip Generation Manual 11 Edition, the project will generate a maximum of approximately 238 weekday daily vehicle trips and 185 weekend daily vehicle trips. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. Therefore, as the project will generate a maximum of 238 daily vehicle trips, ADT volumes would fall far short of 100,000 vehicles per day, 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 Salton Sea portion of the South Coast Air Basin. The nearest sensitive receptors include the existing single-family residential uses located approximately 50 feet (~15 meters) to the west, the multi-family residential uses located approximately 30 feet (~9 meters) to the north, and the transient lodging use located approximately 170 feet (~52 meters) to the northeast of the project site.

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 consists of the development of residential and commercial (gym) uses and does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Operations-Related Human Health Impacts

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

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

Table 9
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	2.41	0.38	2.14	0.00	0.04	0.04
Energy Usage[2]	0.01	0.11	0.06	0.00	0.01	0.01
Mobile Sources[3]	0.61	0.68	4.63	0.01	0.98	0.27
Total Emissions	**3.03**	**1.17**	**6.83**	**0.01**	**1.03**	**0.32**
SCAQMD Thresholds	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2020.4.0; 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.

Cumulative Air Quality Impacts

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[10] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative 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 Salton Sea portion 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.

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 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 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

[10] South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

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 2020-2045 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2020) 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 Palm Springs Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is designated as Central Business District on the City's General Plan Land Use Map. The City's General Plan Land Use Element states that the Central Business District land use allows for a mix of commercial, residential, and office uses Residential uses are allowed in the Central Business District at a density of up to 21-30 dwelling units per acre. The project proposes to develop the approximately 2.4-acre site with 24 multi-family residential dwelling units at approximately 10 dwelling units per acre and 2,214 square feet of commercial space. Therefore, the proposed project would be consistent with the City's existing designations. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

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

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric GHGs, 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 GHGs 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 GHGs 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 GHG emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent GHG, 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 GHGs 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	(100 Year Horizon)
Carbon Dioxide (CO_2)	-- [2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (N2O)	114	265-298
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 REGULATION

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 became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global GHG emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake 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.

Federal

The 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.

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 GHGs, 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 GHGs 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.

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.[11]

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 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 GHG 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)[12] 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.[13] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[14]

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposes to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposes to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those

[11] 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.

[12] 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.

[13] 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.

[14] 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.

regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposes to establish a clean slate with respect to NHTSA's regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA).[15]

State of California

California Air Resources Board

CARB, a part of the CalEPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

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 TACs (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 have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

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 the 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. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

[15] https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption

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:

- 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.

The Executive Order directed the secretary of the 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 (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 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."[16] 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. 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.

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

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.

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 the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

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

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than 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 the 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 Bill 100

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

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

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). The 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. The 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 SCAG jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the 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.

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 were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards.

Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250.

Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6.

Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

California Code of Regulations (CCR) Title 24, Part 11 (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: The 2016 residential standards were 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 GHG emissions. During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle.

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 USEPA 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 USEPA'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.

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle.

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

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

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

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

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

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

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.

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.

Executive Order N-79-20

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

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.

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 required that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[17]

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."[18] 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 2019 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2020.

[17] 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

[18] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

Regional – South Coast Air Quality Management District

The project is within the South Coast Air Basin, which is under the jurisdiction of 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 GHG 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 GHG emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed GHG 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 CAPCOA 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 GHG 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 GHGs 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 GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG 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.

SCAQMD Working Group

Since neither the 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 threshold of 10,000 MTCO2e for industrial uses.

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

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.

<u>Local – City of Palm Springs</u>

The City of Palm Springs adopted both the City of Palm Springs Climate Action Plan (CAP) and the City of Palm Springs Energy Action Plan in May 2013. The City's CAP acts as a framework for the development and implementation of policies and programs to reduce the City's emissions. This plan sets forth goals to reduce emissions to achieve the targets of AB 32. The Climate Action Plan identifies that the community will have to implement emissions reductions of 4,263 tonnes to achieve the AB 32 target by 2020. This reduction equates to just one percent of the forecasted 2020 level. Further, in order to fulfill the Kyoto Protocol target of seven percent below 1990 levels, the City will have to reduce projected emissions by a total of 324,513 tonnes or a 7.9 percent emissions reduction. These CAP targets were based on a predicted population growth rate of 18% between 2010 and 2020. The City of Palm Spring's CAP has identified 78 measures to be implemented over the course of an eight-year period, beginning in 2013, in order to achieve their emission reduction goals. The measures represent 75,984 tonnes of annual CO2e savings, which is larger than that needed for the City to be incompliance with both AB 32 levels and the Kyoto Protocol.

SIGNIFICANCE THRESHOLDS

<u>Appendix G of State CEQA Guidelines</u>

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

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[19].

<u>Thresholds of Significance for this Project</u>

To determine whether the project's GHG emissions are significant, this analysis uses the draft SCAQMD screening threshold of 3,000 MTCO2e per year for all land uses.

[19] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

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 2020.4.0 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Output for year 2024 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 by inputting the project-generated vehicular trips as estimated from the ITE Trip Generation Manual 11th Edition into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions. See Section 2 for details.

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, reductions for this are shown in the mitigated CalEEMod output values. 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 in the manner detailed above in Section 2.

Project Greenhouse Gas Emissions

The GHG emissions have been calculated based on the parameters described above. A summary of the results is 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 (without credit for any reductions from sustainable design and/or regulatory requirements) would be 247.58 MTCO2e per year. According to the thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would not exceed the SCAQMD draft threshold of 3,000 $MTCO_2e$ per year. Therefore, as the emissions from the proposed project would not exceed the SCAQMD draft threshold of 3,000 MTCO2e per year for all land uses, operation of the proposed project would not create a significant cumulative impact to global climate change. No mitigation is required.

Table 11
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	17.31	17.31	0.00	0.00	17.41
Energy Usage[2]	0.00	45.08	45.08	0.00	0.00	45.33
Mobile Sources[3]	0.00	146.23	146.23	0.01	0.01	148.85
Waste[4]	4.80	0.00	4.80	0.28	0.00	11.89
Water[5]	0.54	6.01	6.55	0.06	0.00	8.35
Construction[6]	0.00	15.63	15.63	0.00	0.00	15.75
Total Emissions	**5.34**	**230.25**	**235.59**	**0.35**	**0.01**	**247.58**
SCAQMD Draft Screening Threshold for all land uses						3,000
Exceeds Threshold?						No

Notes:
Source: CalEEMod Version 2020.4.0 for Opening Year 2024.
(1) Area sources consist of GHG emissions from 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.

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project could have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The applicable plan for the proposed project is the City of Palm Springs Climate Action Plan (CAP).

Consistency with City of Palm Springs CAP

The City of Palm Springs CAP was set in place to guide the City in decisions that lead to the largest and most cost-effective emissions reductions. This plan sets forth goals to reduce emissions to achieve the targets of AB 32. In order to achieve these targets, the CAP presents a number of GHG emissions-reducing programs and policies that are to be implemented by the City. As specified in the CAP, these measures are to be implemented over a course of eight years beginning in 2013. The proposed project would be expected to comply with all applicable emissions-reducing measures identified within the CAP. The project's compliance with the CAP measures is detailed in Table 12.

Consistency with AB-32 and SB-32

As stated previously, the SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 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.

In 2006, the California State Legislature adopted 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 was phased in starting in 2012.

Therefore, as the project's emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with the goals of AB 32 and the City of Palm Springs CAP. Additionally, as the project meets the current interim emissions targets/thresholds established by SCAQMD, the project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the project will be required to comply with these regulations as they come into effect.

At a level of 247.58 MTCO2e per year, the project's GHG emissions do not exceed the SCAQMD draft threshold of 3,000 $MTCO_2e$ per year and is in compliance with the reduction goals of the City of Palm Springs CAP, AB-32 and SB-32. Furthermore, the project will comply with applicable Green Building Standards and City of Palm Spring’s policies regarding sustainability (as dictated by the City's General Plan and CAP). Impacts are considered to be less than significant.

Table 12 (1 of 2)
City of Palm Springs CAP Applicable Measures Project Comparison

Sector	CAP Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
Sphere - "Where We Live"		
Solid Waste	Solid Waste Diversion: Increase solid waste diversion rate by 5% to 80.1% by 2015 potentially through awareness programs, recognition and other financial instruments.	No Conflict. The project will be required to comply with AB 341, which includes recycling programs that reduces waste to landfills by a minimum 75% by 2020.
Solid Waste	Solid Waste Diversion: Increase solid waste diversion rate by an additional 10% to 90.1% by 2020 potentially through awareness programs, recognition and other financial instruments.	No Conflict. The project will be required to comply with AB 341, which includes recycling programs that reduces waste to landfills by a minimum of 75% by 2020.
Water	Gray-Water Ready Ordinance: Require all new residential development to be constructed for easy implementation of gray water systems that redirect water from wash basins, showers, and tubs.	No Conflict. The project includes residential land uses and will be required to be constructed for easy implementation of gray water systems that redirect water from wash basins, showers, and tubs.
Sphere - "Where We Work"		
Commercial Buildings	Peak Demand Reduction: Collaborate with SCE and encourage 100 businesses to enroll in Energy Efficiency and Demand Response programs such as the Summer Discount Program.	No Conflict. This is a city-based measure. If the project is mandated by the City to be one of the 100 businesses that are to enroll in an Energy Efficiency and Demand Response program then the project will comply as needed.
Commercial Buildings	Energy-Efficient, Commercial-Sector Lighting: Promote and leverage existing incentives for efficient lighting and educate and locally incent building owners to eliminate any remaining T-12 lamps in commercial buildings.	No Conflict. The project will comply with current Title 24 requirements for installation of energy-efficient lighting.
Commercial Buildings	"The Temperature Club": Promote community partnership through policies to adjust indoor temperatures to save/degree by way of the "Green Business Partnership."	No Conflict. This is a city-based measure. If the project is mandated by the City to be one of the 100 businesses in the "Temperature Club," the project will comply as needed.
Commercial Buildings	Integrated Lighting Systems: Promote SCE's Energy Management Solutions' energy- efficient lighting linked to building controls and occupancy sensors in minimum of 1 million square feet of commercial space.	No Conflict. This is a city-based measure. If the project is mandated by the City to be part of the 1 million square feet of commercial space that is to have energy-efficient lighting linked to building controls and occupancy sensors, then the project will comply as needed.
Sphere - " How We Build"		
Commercial Buildings	Sustainable Parking Lots: Program to reduce the heat island effect through the promotion of parking lot coverings and coatings and semi permeable surfaces for new construction to achieve 20% of existing parking lots, and 80% of new parking lots.	No Conflict. The project includes only 16 guest parking spaces. Furthermore, the project would include the planting of trees that would provide shade and reduce the heat island effect and semi-permeable paving will be used as required by the City.
Commercial Buildings	"Cool Roofs": Promote the installation of reflective roofing on commercial properties in the community with recognition for first ten early adopters.	No Conflict. The project involves the construction of 24 multi-family residential dwelling units and 2,214 square feet of retail space. For the retail portion of the project, the project would use light-colored roofing materials to reflect heat and reduce cooling requirements of buildings as required by the City.

Table 12 (2 of 2)
City of Palm Springs CAP Applicable Measures Project Comparison

Sector	CAP Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
Residential Buildings	Green Building Program: Promote the voluntary Green Building Program to prepare for enhanced Title 24 requirements and green building standards.	No Conflict. 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 became mandatory in the 2019 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 project will be subject to these mandatory standards.
Residential Buildings	Shade Trees: Promote properly sited and selected shade trees in 100% of new construction to reduce heat island and provide shade to offset air conditioning.	No Conflict. The project involves the construction of 24 multi-family residential dwelling units and 2,214 square feet of retail space. The proposed project would be subject to and comply with applicable City of Palm Springs Municipal Code regulations regarding the number of trees to be planted for residential and commercial uses. In addition, the proposed project's landscape plans include approximatley 245 new trees to be planted on the site.
Water	Storm water Capture: Promote storm water capture and retention for exterior landscape use (cisterns, rain barrels) to demonstrate 10 new systems by 2020.	No Conflict. The project would be required to comply with City of Palm Springs Municipal Code (i.e., Section 8.70.100 etc.) regulations regarding stormwater retention for multi-family residential and commercial uses.

Notes:

Source: City of Palm Springs Climate Action Plan (2013).

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."[20] 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.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Consistent with CEQA Guidelines Section 15064h(3),[21] the City, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the City of Palm Springs CAP.

Thus, given the project's consistency with the City of Palm Springs CAP, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Given this consistency, it is concluded that the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

[20] 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).

[21] The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."

4. 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 2020 included:

- Approximately 272,576 gigawatt hours of electricity;[22]
- Approximately 2,074,302 million cubic feet of natural gas per year;[23] and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[24]

As of 2019, 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 39.3 percent transportation;
- Approximately 23.2 percent industrial;
- Approximately 18.7 percent residential; and
- Approximately 18.9 percent commercial.[25]

California's electricity in-state generation system generates approximately 190,913 gigawatt-hours each year. In 2020, California produced approximately 70 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 15 percent) and the U.S. Southwest (approximately 15 percent). Natural gas is the main source for electricity generation at approximately 48.34 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:

- California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel among the 50 states and accounted for one-fifth of the nation's jet fuel consumption in 2018.
- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation.

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[22] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2021. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation.

[23] Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] 2021. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

[24] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] 2021. https://www.energy.ca.gov/data-reports/planning-and-forecasting

[25] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] January 16, 2020 https://www.eia.gov/state/?sid=CA#tabs-2

- In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California's net electricity generation[26].

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, 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, 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.[27] 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.[28]

Table 14 identifies SCE's specific proportional shares of electricity sources in 2020. As shown in Table 14, the 2020 SCE Power Mix has renewable energy at 30.9 percent of the overall energy resources, of which biomass and waste is at 0.1 percent, geothermal is at 5.5 percent, eligible hydroelectric is at 0.8 percent, solar energy is at 15.1 percent, and wind power is at 9.4 percent; other energy sources include large hydroelectric at 3.3 percent, natural gas at 15.2 percent, nuclear at 8.4 percent, other at 0.3 percent, and unspecified sources at 42 percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas Company (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 11 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. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

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.

[26] State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020.] http://www.eia.gov/state/?sid=CA#tabs2.

[27] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory

[28] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[29]

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 shows the transportation sector emits 40 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[30,31] About 28 percent of total United States energy consumption in 2019 was for transporting people and goods from one place to another. In 2019, petroleum comprised about 91 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[32] In 2020, about 123.49 billion gallons (or about 2.94 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 337 million gallons (or about 8.03 million barrels) per day.[33]

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.[34]

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of

[29] California Public Utilities Commission. Natural Gas and California. https://www.cpuc.ca.gov/industries-and-topics/natural-gas/natural-gas-and-california

[30] CARB. California Greenhouse Gas Emissions Inventory – 2020 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm

[31] 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

[32] 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

[33] https://www.eia.gov/tools/faqs/faq.php?id=23&t=10

[34] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

CO_2 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.[35]

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 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 2019 Integrated Energy Policy Report (2019 IEPR) was adopted February 20, 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast.[36]

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

[35] 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.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule.

[36] California Energy Commission. Final 2019 Integrated Energy Policy Report. February 20, 2020. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report

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 3 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 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

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

The 2019 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, 2020. The 2019 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.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

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

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

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

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Senate Bill 100

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

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

Senate Bill 350

As previously discussed in Section 3 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 3 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 3 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed in Section 3 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 in Section 3 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.[37]

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 (NOX) 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.

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 3 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.

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

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 2020.4.0 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 of the project is anticipated to occur no sooner than the beginning of November 2022, last through the beginning of May 2024, and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately eighteen-month schedule is relatively short and the project site is approximately 2.4 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)[38], 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 24 multi-family residential dwelling units and 2,214 square feet of commercial space totaling approximately 76,053 square feet. 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 $3,175.97. Furthermore, SCE's general service rate schedule (GS-1) is approximately $0.13 per kWh of electricity.[39] As shown in Table 15, the total electricity usage from project construction related activities is estimated to be approximately 24,431 kWh.

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

[39] Assumes the project will be under the GS-1 General Service rate under SCE. https://www.sce.com/regulatory/tariff-books/rates-pricing-choices

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 18 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (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 2017 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 40,620 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 construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 50 percent/25 percent/25 percent, respectively, along area roadways.[40] With respect to estimated VMT, the construction worker trips would generate an estimated 171,622 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 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 2021 EMFAC model (see Appendix C for details). An aggregate fuel efficiency of 26.38 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 17 shows that an estimated 6,506 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Tables 18 and 19 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 24,021 VMT. Data regarding project related construction worker trips were based on CalEEMod 2020.4.0 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

[40] CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for worker trips includes light duty autos and light duty trucks, LDA, LDT1, LDT2, at a mix of 50%/25%/25%, respectively.

hauling debris from the site during grading and building construction would use medium to heavy duty vehicles with an average fuel consumption of 7.59 mpg for medium heavy-duty trucks and 5.87 mpg for heavy heavy-duty trucks (see Appendix C for details).[41] Tables 18 and 19 show that an estimated 3,604 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately eighteen-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 County building officials, and/or in response to citizen complaints.

Operational Energy Demands

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 11 miles and 3- 4-axle trucks were assumed to travel an average of 4.5 miles.[42] The project includes the development of the site with single-family residential uses; therefore, in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 20 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[43]

The proposed project would generate up to 238 vehicle trips per day. The vehicle fleet mix was used from the CalEEMod output. Table 20 shows that an estimated 36,848 gallons of fuel would be consumed per year for the operation of the proposed project.

[41] CalEEMod User's Guide (May 2021) states that the CalEEMod default fleet mix for vendor trips includes medium-heavy duty and heavy-heavy duty trucks, MHDT and HHDT, at a mix of 50%/50%.

[42] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 11 miles; 4.5 miles for H-O (home-other) or C-O (commercial-other).

[43] Average fuel economy based on aggregate mileage calculated in EMFAC 2021 for opening year (2024). See Appendix C for EMFAC output.

Trip generation and VMT generated by the proposed project are consistent with other similar multi-family residential and commercial uses of similar scale and configuration as reflected respectively in the Institute of Transportation Engineers (ITE) Trip Generation Manual (20th Edition, 2017). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015.[44,45] Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by SCE) 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.

As shown in Table 21, the estimated electricity demand for the proposed project is approximately 123,414 kWh per year. In 2020, the residential sector of the County of Riverside consumed approximately 8,843 million kWh of electricity and the non-residential sector consumed approximately 8,015 kWh of electricity.[46] In addition, the estimated natural gas consumption for the proposed project is approximately 434,601 kBTU per year. In 2020, the residential sector of the County of Riverside consumed approximately 302 million therms of gas and the non-residential sector consumed approximately 135 million therms of gas.[47] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2020 residential and non-residential sector demands.

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.).

Furthermore, the proposed project energy demands in total would be comparable to other residential projects of similar scale and configuration. Therefore, the project facilities' energy demands and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

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.

[44] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics

[45] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics

[46] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx

[47] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

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. However, the vehicles associated with the proposed project would be required to comply with federal and state fuel efficiency standards.

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 would be consistent with the applicable goals of the City of Palm Springs CAP.

Conclusions

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any 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 and is a multi-family residential and commercial project that is not proposing any additional features that would require a larger energy demand than other residential projects of similar scale and configuration. The energy demands of the project are anticipated to 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 multi-family residential and commercial uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

Table 13
Total Electricity System Power (California 2020)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	Total California Energy Mix (GWh)	Total California Power Mix
Coal	317	0.17%	194	6,963	7,157	8.76%	7,474	2.74%
Natural Gas	92,298	48.35%	70	8,654	8,724	10.68%	101,022	37.06%
Nuclear	16,280	8.53%	672	8,481	9,154	11.21%	25,434	9.33%
Oil	30	0.02%	-	-	0	0.00%	30	0.01%
Other (Petroleum Coke/Waste Heat)	384	0.20%	125	9	134	0.16%	518	0.19%
Large Hydro	17,938	9.40%	14,078	1,259	15,337	18.78%	33,275	12.21%
Unspecified Sources of Power	-	0.00%	12,870	1,745	14,615	17.90%	14,615	5.36%
Renewables	63,665	33.35%	13,184	13,359	26,543	32.50%	90,208	33.09%
Biomass	5,680	2.97%	975	25	1,000	1.22%	6,679	2.45%
Geothermal	11,345	5.94%	166	1,825	1,991	2.44%	13,336	4.89%
Small Hydro	3,476	1.82%	320	2	322	0.39%	3,798	1.39%
Solar	29,456	15.43%	284	6,312	6,596	8.08%	36,052	13.23%
Wind	13,708	7.18%	11,438	5,197	16,635	20.37%	30,343	11.13%
Total	190,913	100%	41,193	40,471	81,663	100%	272,576	100%

Notes:

(1) Source: California Energy Commission. 2020 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation

Table 14
SCE 2020 Power Content Mix

Energy Resources	2020 SCE Power Mix
Eligible Renewable	30.9%
Biomass & Biowaste	*0.1%*
Geothermal	*5.5%*
Eligible Hydroelectric	*0.8%*
Solar	*15.1%*
Wind	*9.4%*
Coal	0.0%
Large Hydroelectric	3.3%
Natural Gas	15.2%
Nuclear	8.4%
Other	0.3%
Unspecified Sources of power*	42.0%
Total	100%

Notes:
(1) https://www.sce.com/sites/default/files/inline-files/SCE_2020PowerContentLabel.p
* Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

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	76.053	18	$3,175.97

Cost per kWh	Total Project Construction Electricity Usage (kWh)
$0.13	24,431

*Assumes the project will be under the GS-1 General Service rate under SCE.
https://www.sce.com/regulatory/tariff-books/rates-pricing-choices

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]
Site Preparation	5	Graders	1	8	187	0.41	613.36	166
	5	Scrapers	1	8	367	0.48	1409	381
	5	Tractors/Loaders/Backhoes	1	7	97	0.37	251	68
Grading	9	Graders	1	8	187	0.41	613	298
	9	Rubber Tired Dozers	1	8	247	0.4	790	385
	9	Tractors/Loaders/Backhoes	2	7	97	0.37	502	244
Building Construction	346	Cranes	1	8	231	0.29	536	10,023
	346	Forklifts	2	7	89	0.2	249	4,661
	346	Generator Sets	1	8	84	0.74	497	9,300
	346	Tractors/Loaders/Backhoes	1	6	97	0.37	215	4,027
	346	Welders	3	8	46	0.45	497	9,292
Paving	16	Cement and Mortar Mixers	1	8	9	0.56	40	35
	16	Pavers	1	8	130	0.42	437	378
	16	Paving Equipment	1	8	132	0.36	380	329
	16	Rollers	2	8	80	0.38	486	421
	16	Tractors/Loaders/Backhoes	1	8	97	0.37	287	248
Architectural Coating	30	Air Compressors	1	6	78	0.48	225	364
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								40,620

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)
Site Preparation	5	8	11	440	26.38	17
Grading	9	10	11	990	26.38	38
Building Construction	346	43	11	163,658	26.38	6,204
Paving	16	9	11	1,584	26.38	60
Architectural Coating	30	15	11	4,950	26.38	188
Total Construction Worker Fuel Consumption						6,506

Notes:

(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

(2) CalEEMod worker vehicle class is based on an LD_Mix, which, per CalEEMod User's Guide (May 2021), inlcudes LDA, LDT1, and LDT2 at a mix of 50%/25%/25%, respectively.

Table 18
Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks)

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	5	0	5.4	0	6.73	0
Grading	9	0	5.4	0	6.73	0
Building Construction	346	12	5.4	22,421	6.73	3,331
Paving	16	0	5.4	0	6.73	0
Architectural Coating	30	0	5.4	0	6.73	0
Total Construction Vendor Fuel Consumption						3,331

Notes:

(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

(2) CalEEMod vendor vehicle class is based on an HDT_Mix, which, per CalEEMod User's Guide (May 2021), inlcudes HHDT and MHDT at a mix of 50%/50%.

Table 19
Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Total Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	5	0	20	0	5.87	0
Grading	9	80	20	1,600	5.87	273
Building Construction	346	0	20	0	5.87	0
Paving	16	0	20	0	5.87	0
Architectural Coating	30	0	20	0	5.87	0
Total Construction Hauling Fuel Consumption						273

Notes:

(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

Table 20
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	128	11	1,408	31.35	44.91	16,393
Light Truck	Automobile	14	11	154	24.4	6.31	2,304
Light Truck	Automobile	42	11	462	23.91	19.32	7,053
Medium Truck	Automobile	33	11	363	19.6	18.52	6,760
Light Heavy Truck	2-Axle Truck	7	11	77	15.57	4.95	1,805
Light Heavy Truck 10,000 lbs +	2-Axle Truck	2	11	22	14.86	1.48	540
Medium Heavy Truck	3-Axle Truck	3	4.5	14	7.75	1.74	636
Heavy Heavy Truck	4-Axle Truck	5	4.5	23	6.05	3.72	1,357
Total		238	--	2,522	17.94	100.95	--
Total Annual Fuel Consumption							36,848

Notes:
(1) Based on 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[1]
Apartments Low Rise	363,022
Health Club	71,579
Total	434,601

Electricity Demand	kWh/year
Apartments Low Rise	100,079
Heath Club	21,963
Parking Lot	1,372
Total	123,414

Notes:
(1) Taken from the CalEEMod 2020.4.0 annual output (Appendix C of this report).

5. EMISSIONS REDUCTION MEASURES

Construction Measures

Adherence to SCAQMD Rules 403 and 403.1 is required and the project will be required to obtain and prepare a Fugitive Dust Control Plan.

No construction measures are required.

Operational Measures

No operational measures are required.

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.

2021 Historical Air Quality, Top 4 Summary

City of Palm Springs

2007 General Plan

2013 Palm Springs Climate Action Plan. May.

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

Institute of Transportation Engineers

2021 Trip Generation Manual 11th Edition. September.

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

2021 Historical Data by Year. 2013, 2014 and 2015 Air Quality Data Tables.
Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year

Southern California Association of Governments

2020 2020-2045 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

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 Significance 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

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

19476 RIOS Project

Riverside-Salton Sea County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	54.16	1000sqft	1.24	54,161.00	0
Parking Lot	16.00	Space	0.09	3,920.00	0
Apartments Low Rise	24.00	Dwelling Unit	1.02	73,839.00	69
Health Club	2.21	1000sqft	0.05	2,214.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ~2.4 ac w/ 24 MF DUs & 2,214sf retail (spa/gym) bldgs totaling 76,053 sf (footprint 46,686 sf), 54,161 sf open spc, & 16 guest prkng spcs (site also includes 42 garage spcs, which are included in residential bldg sf).

Construction Phase - Construction anticipated to begin early November 2022 and be completed by early May 2024 (~18 months).

Grading - 2,087 CY fill - 1,449 CY cut = 638 CY import during grading.

Architectural Coating - SCAQMD Rule 1113 limits architectural coatings to 50 g/L VOC for buildings and 100 g/L VOC for parking lot striping.

Vehicle Trips - Per trip gen estimates using ITE 11th Ed, 6.74 trips/DU/day weekday & 4.55 trips/DU/day weekend for residential & 34.5 trips/TSF/day weekday/weekend for retail.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - ~245 new trees to be planted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is adjacent to bus stop N Palm Canyon at Chino & ~0.56 miles NW of downtown area of Palm Springs. Sidewalks provided on/off site. 24 DU/2.4 ac = 10 DU/ac.

Water Mitigation - 20% reduction indoor water use per CalGreen standards. Water efficient irrigation systems.

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

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	NumDays	6.00	9.00
tblConstructionPhase	NumDays	220.00	346.00
tblConstructionPhase	NumDays	10.00	16.00
tblConstructionPhase	NumDays	10.00	30.00
tblFireplaces	NumberGas	19.20	21.60
tblFireplaces	NumberWood	2.40	0.00
tblGrading	MaterialImported	0.00	638.00
tblLandUse	LandUseSquareFeet	54,160.00	54,161.00
tblLandUse	LandUseSquareFeet	6,400.00	3,920.00
tblLandUse	LandUseSquareFeet	24,000.00	73,839.00
tblLandUse	LotAcreage	0.14	0.09
tblLandUse	LotAcreage	1.50	1.02
tblSequestration	NumberOfNewTrees	0.00	245.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	ST_TR	20.87	34.50
tblVehicleTrips	SU_TR	6.28	4.55

tblVehicleTrips	SU_TR	26.73	34.50
tblVehicleTrips	WD_TR	7.32	6.74
tblVehicleTrips	WD_TR	32.93	34.50
tblWoodstoves	NumberCatalytic	1.20	0.00
tblWoodstoves	NumberNoncatalytic	1.20	0.00

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					
2022	2.0185	18.1392	15.8508	0.0301	7.3308	0.7559	8.0867	3.4909	0.6959	4.1869	0.0000	2,810.1874	2,810.1874	0.7699	0.0879	2,832.3966
2023	1.8612	14.0408	15.5976	0.0299	0.4200	0.6181	1.0381	0.1128	0.5922	0.7050	0.0000	2,794.1555	2,794.1555	0.4435	0.0347	2,815.5673
2024	17.3896	13.2320	15.4048	0.0298	0.4200	0.5424	0.9624	0.1128	0.5194	0.6321	0.0000	2,783.6656	2,783.6656	0.5622	0.0336	2,804.5942
Maximum	**17.3896**	**18.1392**	**15.8508**	**0.0301**	**7.3308**	**0.7559**	**8.0867**	**3.4909**	**0.6959**	**4.1869**	**0.0000**	**2,810.1874**	**2,810.1874**	**0.7699**	**0.0879**	**2,832.3966**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.0185	18.1392	15.8508	0.0301	3.0050	0.7559	3.7609	1.4010	0.6959	2.0970	0.0000	2,810.1874	2,810.1874	0.7699	0.0879	2,832.3966
2023	1.8612	14.0408	15.5976	0.0299	0.4200	0.6181	1.0381	0.1128	0.5922	0.7050	0.0000	2,794.1555	2,794.1555	0.4435	0.0347	2,815.5673
2024	17.3896	13.2320	15.4048	0.0298	0.4200	0.5424	0.9624	0.1128	0.5194	0.6321	0.0000	2,783.6656	2,783.6656	0.5622	0.0336	2,804.5942
Maximum	**17.3896**	**18.1392**	**15.8508**	**0.0301**	**3.0050**	**0.7559**	**3.7609**	**1.4010**	**0.6959**	**2.0970**	**0.0000**	**2,810.1874**	**2,810.1874**	**0.7699**	**0.0879**	**2,832.3966**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.94	0.00	42.88	56.23	0.00	37.83	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	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Energy	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
Mobile	0.6081	0.6380	4.6323	9.7600e-003	0.9766	7.7200e-003	0.9843	0.2605	7.2300e-003	0.2678		1,010.7723	1,010.7723	0.0572	0.0510	1,027.4034
Total	**3.0292**	**1.1301**	**6.8265**	**0.0129**	**0.9766**	**0.0566**	**1.0331**	**0.2605**	**0.0561**	**0.3166**	**0.0000**	**1,611.8459**	**1,611.8459**	**0.0721**	**0.0620**	**1,632.1141**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Energy	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
Mobile	0.5352	0.4573	3.1791	5.8800e-003	0.5712	4.8900e-003	0.5761	0.1524	4.5800e-003	0.1570		608.9706	608.9706	0.0436	0.0360	620.7753
Total	**2.9563**	**0.9493**	**5.3733**	**8.9700e-003**	**0.5712**	**0.0537**	**0.6249**	**0.1524**	**0.0534**	**0.2058**	**0.0000**	**1,210.0442**	**1,210.0442**	**0.0585**	**0.0469**	**1,225.4861**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	2.41	15.99	21.29	30.19	41.51	5.00	39.51	41.51	4.73	35.00	0.00	24.93	24.93	18.85	24.29	24.91

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2022	11/7/2022	5	5	
2	Grading	Grading	11/8/2022	11/18/2022	5	9	
3	Building Construction	Building Construction	11/19/2022	3/18/2024	5	346	
4	Paving	Paving	3/19/2024	4/9/2024	5	16	
5	Architectural Coating	Architectural Coating	3/21/2024	5/1/2024	5	30	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 9

Acres of Paving: 1.33

Residential Indoor: 149,524; Residential Outdoor: 49,841; Non-Residential Indoor: 3,321; Non-Residential Outdoor: 1,107; Striped Parking Area: 3,485 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

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
Site Preparation	3	8.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	80.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	43.00	12.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476		2,375.156 9	2,375.156 9	0.7682		2,394.361 3
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**		**2,375.156 9**	**2,375.156 9**	**0.7682**		**2,394.361 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0163	0.2481	6.1000e-004	0.0669	3.4000e-004	0.0673	0.0178	3.2000e-004	0.0181		62.2761	62.2761	1.7700e-003	1.6500e-003	62.8109
Total	**0.0271**	**0.0163**	**0.2481**	**6.1000e-004**	**0.0669**	**3.4000e-004**	**0.0673**	**0.0178**	**3.2000e-004**	**0.0181**		**62.2761**	**62.2761**	**1.7700e-003**	**1.6500e-003**	**62.8109**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476	0.0000	2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**0.6204**	**0.5952**	**1.2156**	**0.0670**	**0.5476**	**0.6146**	**0.0000**	**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0163	0.2481	6.1000e-004	0.0669	3.4000e-004	0.0673	0.0178	3.2000e-004	0.0181		62.2761	62.2761	1.7700e-003	1.6500e-003	62.8109
Total	**0.0271**	**0.0163**	**0.2481**	**6.1000e-004**	**0.0669**	**3.4000e-004**	**0.0673**	**0.0178**	**3.2000e-004**	**0.0181**		**62.2761**	**62.2761**	**1.7700e-003**	**1.6500e-003**	**62.8109**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0916	0.0000	7.0916	3.4261	0.0000	3.4261			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0916**	**0.7423**	**7.8338**	**3.4261**	**0.6829**	**4.1090**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

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	0.0281	1.1352	0.2525	5.1100e-003	0.1556	0.0132	0.1688	0.0427	0.0126	0.0553		545.2017	545.2017	7.3700e-003	0.0859	570.9796
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0339	0.0204	0.3101	7.7000e-004	0.0837	4.3000e-004	0.0841	0.0222	4.0000e-004	0.0226		77.8452	77.8452	2.2100e-003	2.0600e-003	78.5136
Total	**0.0620**	**1.1556**	**0.5625**	**5.8800e-003**	**0.2393**	**0.0136**	**0.2529**	**0.0648**	**0.0130**	**0.0779**		**623.0469**	**623.0469**	**9.5800e-003**	**0.0879**	**649.4932**

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7657	0.0000	2.7657	1.3362	0.0000	1.3362			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**2.7657**	**0.7423**	**3.5080**	**1.3362**	**0.6829**	**2.0191**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

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	0.0281	1.1352	0.2525	5.1100e-003	0.1556	0.0132	0.1688	0.0427	0.0126	0.0553		545.2017	545.2017	7.3700e-003	0.0859	570.9796
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0339	0.0204	0.3101	7.7000e-004	0.0837	4.3000e-004	0.0841	0.0222	4.0000e-004	0.0226		77.8452	77.8452	2.2100e-003	2.0600e-003	78.5136
Total	**0.0620**	**1.1556**	**0.5625**	**5.8800e-003**	**0.2393**	**0.0136**	**0.2529**	**0.0648**	**0.0130**	**0.0779**		**623.0469**	**623.0469**	**9.5800e-003**	**0.0879**	**649.4932**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0173	0.4304	0.1642	1.7600e-003	0.0602	5.7600e-003	0.0660	0.0174	5.5100e-003	0.0229		186.1720	186.1720	2.0400e-003	0.0277	194.4651
Worker	0.1458	0.0876	1.3334	3.2900e-003	0.3598	1.8500e-003	0.3616	0.0954	1.7000e-003	0.0971		334.7341	334.7341	9.5100e-003	8.8500e-003	337.6086
Total	**0.1630**	**0.5180**	**1.4976**	**5.0500e-003**	**0.4200**	**7.6100e-003**	**0.4276**	**0.1128**	**7.2100e-003**	**0.1200**		**520.9062**	**520.9062**	**0.0116**	**0.0365**	**532.0736**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0173	0.4304	0.1642	1.7600e-003	0.0602	5.7600e-003	0.0660	0.0174	5.5100e-003	0.0229		186.1720	186.1720	2.0400e-003	0.0277	194.4651
Worker	0.1458	0.0876	1.3334	3.2900e-003	0.3598	1.8500e-003	0.3616	0.0954	1.7000e-003	0.0971		334.7341	334.7341	9.5100e-003	8.8500e-003	337.6086
Total	**0.1630**	**0.5180**	**1.4976**	**5.0500e-003**	**0.4200**	**7.6100e-003**	**0.4276**	**0.1128**	**7.2100e-003**	**0.1200**		**520.9062**	**520.9062**	**0.0116**	**0.0365**	**532.0736**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0126	0.3393	0.1538	1.6900e-003	0.0602	2.6900e-003	0.0629	0.0174	2.5700e-003	0.0199		178.7507	178.7507	1.9000e-003	0.0265	186.6846
Worker	0.1350	0.0776	1.2293	3.1800e-003	0.3598	1.7400e-003	0.3615	0.0954	1.6000e-003	0.0970		325.8814	325.8814	8.5700e-003	8.1900e-003	328.5347
Total	**0.1476**	**0.4169**	**1.3831**	**4.8700e-003**	**0.4200**	**4.4300e-003**	**0.4244**	**0.1128**	**4.1700e-003**	**0.1170**		**504.6322**	**504.6322**	**0.0105**	**0.0347**	**515.2194**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.523 3	2,289.523 3	0.4330		2,300.347 9
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.523 3**	**2,289.523 3**	**0.4330**		**2,300.347 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0126	0.3393	0.1538	1.6900e-003	0.0602	2.6900e-003	0.0629	0.0174	2.5700e-003	0.0199		178.7507	178.7507	1.9000e-003	0.0265	186.6846
Worker	0.1350	0.0776	1.2293	3.1800e-003	0.3598	1.7400e-003	0.3615	0.0954	1.6000e-003	0.0970		325.8814	325.8814	8.5700e-003	8.1900e-003	328.5347
Total	**0.1476**	**0.4169**	**1.3831**	**4.8700e-003**	**0.4200**	**4.4300e-003**	**0.4244**	**0.1128**	**4.1700e-003**	**0.1170**		**504.6322**	**504.6322**	**0.0105**	**0.0347**	**515.2194**

3.4 Building Construction - 2024

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**		**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0124	0.3392	0.1522	1.6600e-003	0.0602	2.6700e-003	0.0629	0.0174	2.5600e-003	0.0199		175.9941	175.9941	1.9600e-003	0.0260	183.7966
Worker	0.1258	0.0694	1.1525	3.0800e-003	0.3598	1.6600e-003	0.3614	0.0954	1.5300e-003	0.0970		318.0174	318.0174	7.7700e-003	7.6200e-003	320.4822
Total	**0.1381**	**0.4085**	**1.3047**	**4.7400e-003**	**0.4200**	**4.3300e-003**	**0.4243**	**0.1128**	**4.0900e-003**	**0.1169**		**494.0115**	**494.0115**	**9.7300e-003**	**0.0336**	**504.2788**

3.4 Building Construction - 2024

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**	**0.0000**	**2,289.654 1**	**2,289.654 1**	**0.4265**		**2,300.315 4**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0124	0.3392	0.1522	1.6600e-003	0.0602	2.6700e-003	0.0629	0.0174	2.5600e-003	0.0199		175.9941	175.9941	1.9600e-003	0.0260	183.7966
Worker	0.1258	0.0694	1.1525	3.0800e-003	0.3598	1.6600e-003	0.3614	0.0954	1.5300e-003	0.0970		318.0174	318.0174	7.7700e-003	7.6200e-003	320.4822
Total	**0.1381**	**0.4085**	**1.3047**	**4.7400e-003**	**0.4200**	**4.3300e-003**	**0.4243**	**0.1128**	**4.0900e-003**	**0.1169**		**494.0115**	**494.0115**	**9.7300e-003**	**0.0336**	**504.2788**

3.5 Paving - 2024

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8572**	**8.1030**	**11.7069**	**0.0179**		**0.3957**	**0.3957**		**0.3652**	**0.3652**		**1,710.2024**	**1,710.2024**	**0.5420**		**1,723.7529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0439	0.0242	0.4020	1.0800e-003	0.1255	5.8000e-004	0.1261	0.0333	5.3000e-004	0.0338		110.9363	110.9363	2.7100e-003	2.6600e-003	111.7961
Total	**0.0439**	**0.0242**	**0.4020**	**1.0800e-003**	**0.1255**	**5.8000e-004**	**0.1261**	**0.0333**	**5.3000e-004**	**0.0338**		**110.9363**	**110.9363**	**2.7100e-003**	**2.6600e-003**	**111.7961**

3.5 Paving - 2024

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8572**	**8.1030**	**11.7069**	**0.0179**		**0.3957**	**0.3957**		**0.3652**	**0.3652**	**0.0000**	**1,710.2024**	**1,710.2024**	**0.5420**		**1,723.7529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0439	0.0242	0.4020	1.0800e-003	0.1255	5.8000e-004	0.1261	0.0333	5.3000e-004	0.0338		110.9363	110.9363	2.7100e-003	2.6600e-003	111.7961
Total	**0.0439**	**0.0242**	**0.4020**	**1.0800e-003**	**0.1255**	**5.8000e-004**	**0.1261**	**0.0333**	**5.3000e-004**	**0.0338**		**110.9363**	**110.9363**	**2.7100e-003**	**2.6600e-003**	**111.7961**

3.6 Architectural Coating - 2024

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	16.2814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**16.4622**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0263	0.0145	0.2412	6.5000e-004	0.0753	3.5000e-004	0.0757	0.0200	3.2000e-004	0.0203		66.5618	66.5618	1.6300e-003	1.5900e-003	67.0777
Total	**0.0263**	**0.0145**	**0.2412**	**6.5000e-004**	**0.0753**	**3.5000e-004**	**0.0757**	**0.0200**	**3.2000e-004**	**0.0203**		**66.5618**	**66.5618**	**1.6300e-003**	**1.5900e-003**	**67.0777**

3.6 Architectural Coating - 2024

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	16.2814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**16.4622**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0263	0.0145	0.2412	6.5000e-004	0.0753	3.5000e-004	0.0757	0.0200	3.2000e-004	0.0203		66.5618	66.5618	1.6300e-003	1.5900e-003	67.0777
Total	**0.0263**	**0.0145**	**0.2412**	**6.5000e-004**	**0.0753**	**3.5000e-004**	**0.0757**	**0.0200**	**3.2000e-004**	**0.0203**		**66.5618**	**66.5618**	**1.6300e-003**	**1.5900e-003**	**67.0777**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	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	0.5352	0.4573	3.1791	5.8800e-003	0.5712	4.8900e-003	0.5761	0.1524	4.5800e-003	0.1570		608.9706	608.9706	0.0436	0.0360	620.7753
Unmitigated	0.6081	0.6380	4.6323	9.7600e-003	0.9766	7.7200e-003	0.9843	0.2605	7.2300e-003	0.2678		1,010.7723	1,010.7723	0.0572	0.0510	1,027.4034

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.76	109.20	109.20	328,252	191,994
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Health Club	76.38	76.38	76.38	100,355	58,698
Total	238.14	185.58	185.58	428,607	250,692

4.3 Trip Type Information

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

	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
Apartments Low Rise	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Parking Lot	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Health Club	12.50	4.20	5.40	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Non-Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Parking Lot	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Health Club	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

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	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
NaturalGas Unmitigated	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132

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					
Apartments Low Rise	994.58	0.0107	0.0917	0.0390	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003		117.0095	117.0095	2.2400e-003	2.1500e-003	117.7048
Health Club	196.106	2.1100e-003	0.0192	0.0162	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0713	23.0713	4.4000e-004	4.2000e-004	23.2084
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		**0.0128**	**0.1109**	**0.0552**	**7.1000e-004**		**8.8700e-003**	**8.8700e-003**		**8.8700e-003**	**8.8700e-003**		**140.0807**	**140.0807**	**2.6800e-003**	**2.5700e-003**	**140.9132**

5.2 Energy by Land Use - NaturalGas

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					
Apartments Low Rise	0.99458	0.0107	0.0917	0.0390	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003		117.0095	117.0095	2.2400e-003	2.1500e-003	117.7048
Health Club	0.196106	2.1100e-003	0.0192	0.0162	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0713	23.0713	4.4000e-004	4.2000e-004	23.2084
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		**0.0128**	**0.1109**	**0.0552**	**7.1000e-004**		**8.8700e-003**	**8.8700e-003**		**8.8700e-003**	**8.8700e-003**		**140.0807**	**140.0807**	**2.6800e-003**	**2.5700e-003**	**140.9132**

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	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Unmitigated	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976

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	0.6580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0419	0.3583	0.1525	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	457.4118	457.4118	8.7700e-003	8.3900e-003	460.1299
Landscaping	0.0602	0.0229	1.9866	1.1000e-004		0.0110	0.0110		0.0110	0.0110		3.5811	3.5811	3.4600e-003		3.6677
Total	**2.4083**	**0.3812**	**2.1391**	**2.4000e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**460.9929**	**460.9929**	**0.0122**	**8.3900e-003**	**463.7976**

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	0.6580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0419	0.3583	0.1525	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	457.4118	457.4118	8.7700e-003	8.3900e-003	460.1299
Landscaping	0.0602	0.0229	1.9866	1.1000e-004		0.0110	0.0110		0.0110	0.0110		3.5811	3.5811	3.4600e-003		3.6677
Total	**2.4083**	**0.3812**	**2.1391**	**2.4000e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**460.9929**	**460.9929**	**0.0122**	**8.3900e-003**	**463.7976**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

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

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

19476 RIOS Project

Riverside-Salton Sea County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	54.16	1000sqft	1.24	54,161.00	0
Parking Lot	16.00	Space	0.09	3,920.00	0
Apartments Low Rise	24.00	Dwelling Unit	1.02	73,839.00	69
Health Club	2.21	1000sqft	0.05	2,214.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ~2.4 ac w/ 24 MF DUs & 2,214sf retail (spa/gym) bldgs totaling 76,053 sf (footprint 46,686 sf), 54,161 sf open spc, & 16 guest prkng spcs (site also includes 42 garage spcs, which are included in residential bldg sf).

Construction Phase - Construction anticipated to begin early November 2022 and be completed by early May 2024 (~18 months).

Grading - 2,087 CY fill - 1,449 CY cut = 638 CY import during grading.

Architectural Coating - SCAQMD Rule 1113 limits architectural coatings to 50 g/L VOC for buildings and 100 g/L VOC for parking lot striping.

Vehicle Trips - Per trip gen estimates using ITE 11th Ed, 6.74 trips/DU/day weekday & 4.55 trips/DU/day weekend for residential & 34.5 trips/TSF/day weekday/weekend for retail.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - ~245 new trees to be planted.

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

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is adjacent to bus stop N Palm Canyon at Chino & ~0.56 miles NW of downtown area of Palm Springs. Sidewalks provided on/off site. 24 DU/2.4 ac = 10 DU/ac.

Water Mitigation - 20% reduction indoor water use per CalGreen standards. Water efficient irrigation systems.

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

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	NumDays	6.00	9.00
tblConstructionPhase	NumDays	220.00	346.00
tblConstructionPhase	NumDays	10.00	16.00
tblConstructionPhase	NumDays	10.00	30.00
tblFireplaces	NumberGas	19.20	21.60
tblFireplaces	NumberWood	2.40	0.00
tblGrading	MaterialImported	0.00	638.00
tblLandUse	LandUseSquareFeet	54,160.00	54,161.00
tblLandUse	LandUseSquareFeet	6,400.00	3,920.00
tblLandUse	LandUseSquareFeet	24,000.00	73,839.00
tblLandUse	LotAcreage	0.14	0.09
tblLandUse	LotAcreage	1.50	1.02
tblSequestration	NumberOfNewTrees	0.00	245.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	ST_TR	20.87	34.50
tblVehicleTrips	SU_TR	6.28	4.55

tblVehicleTrips	SU_TR	26.73	34.50
tblVehicleTrips	WD_TR	7.32	6.74
tblVehicleTrips	WD_TR	32.93	34.50
tblWoodstoves	NumberCatalytic	1.20	0.00
tblWoodstoves	NumberNoncatalytic	1.20	0.00

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					
2022	2.0049	18.2022	15.6215	0.0298	7.3308	0.7559	8.0867	3.4909	0.6959	4.1869	0.0000	2,779.0551	2,779.0551	0.7700	0.0881	2,801.3488
2023	1.8488	14.0647	15.3879	0.0296	0.4200	0.6181	1.0381	0.1128	0.5922	0.7050	0.0000	2,764.2482	2,764.2482	0.4436	0.0350	2,785.7527
2024	17.3838	13.2555	15.2094	0.0295	0.4200	0.5424	0.9624	0.1128	0.5194	0.6321	0.0000	2,754.5417	2,754.5417	0.5623	0.0339	2,775.5578
Maximum	**17.3838**	**18.2022**	**15.6215**	**0.0298**	**7.3308**	**0.7559**	**8.0867**	**3.4909**	**0.6959**	**4.1869**	**0.0000**	**2,779.0551**	**2,779.0551**	**0.7700**	**0.0881**	**2,801.3488**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.0049	18.2022	15.6215	0.0298	3.0050	0.7559	3.7609	1.4010	0.6959	2.0970	0.0000	2,779.0551	2,779.0551	0.7700	0.0881	2,801.3488
2023	1.8488	14.0647	15.3879	0.0296	0.4200	0.6181	1.0381	0.1128	0.5922	0.7050	0.0000	2,764.2482	2,764.2482	0.4436	0.0350	2,785.7527
2024	17.3838	13.2555	15.2094	0.0295	0.4200	0.5424	0.9624	0.1128	0.5194	0.6321	0.0000	2,754.5417	2,754.5417	0.5623	0.0339	2,775.5578
Maximum	**17.3838**	**18.2022**	**15.6215**	**0.0298**	**3.0050**	**0.7559**	**3.7609**	**1.4010**	**0.6959**	**2.0970**	**0.0000**	**2,779.0551**	**2,779.0551**	**0.7700**	**0.0881**	**2,801.3488**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.94	0.00	42.88	56.23	0.00	37.83	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	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Energy	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
Mobile	0.5013	0.6765	4.2157	9.0800e-003	0.9766	7.7200e-003	0.9843	0.2605	7.2300e-003	0.2678		940.1103	940.1103	0.0598	0.0521	957.1414
Total	**2.9224**	**1.1685**	**6.4099**	**0.0122**	**0.9766**	**0.0566**	**1.0331**	**0.2605**	**0.0561**	**0.3166**	**0.0000**	**1,541.1839**	**1,541.1839**	**0.0747**	**0.0631**	**1,561.8522**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Energy	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
Mobile	0.4298	0.4847	3.0000	5.4800e-003	0.5712	4.9000e-003	0.5761	0.1524	4.5900e-003	0.1570		567.9327	567.9327	0.0467	0.0368	580.0638
Total	**2.8509**	**0.9767**	**5.1942**	**8.5700e-003**	**0.5712**	**0.0537**	**0.6249**	**0.1524**	**0.0534**	**0.2058**	**0.0000**	**1,169.0063**	**1,169.0063**	**0.0616**	**0.0478**	**1,184.7746**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	2.45	16.41	18.97	29.58	41.51	4.99	39.51	41.51	4.71	35.00	0.00	24.15	24.15	17.59	24.33	24.14

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2022	11/7/2022	5	5	
2	Grading	Grading	11/8/2022	11/18/2022	5	9	
3	Building Construction	Building Construction	11/19/2022	3/18/2024	5	346	
4	Paving	Paving	3/19/2024	4/9/2024	5	16	
5	Architectural Coating	Architectural Coating	3/21/2024	5/1/2024	5	30	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 9

Acres of Paving: 1.33

Residential Indoor: 149,524; Residential Outdoor: 49,841; Non-Residential Indoor: 3,321; Non-Residential Outdoor: 1,107; Striped Parking Area: 3,485 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

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
Site Preparation	3	8.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	80.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	43.00	12.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476		2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**		**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0169	0.2041	5.5000e-004	0.0669	3.4000e-004	0.0673	0.0178	3.2000e-004	0.0181		56.4371	56.4371	1.8000e-003	1.6900e-003	56.9844
Total	**0.0247**	**0.0169**	**0.2041**	**5.5000e-004**	**0.0669**	**3.4000e-004**	**0.0673**	**0.0178**	**3.2000e-004**	**0.0181**		**56.4371**	**56.4371**	**1.8000e-003**	**1.6900e-003**	**56.9844**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476	0.0000	2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**0.6204**	**0.5952**	**1.2156**	**0.0670**	**0.5476**	**0.6146**	**0.0000**	**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0169	0.2041	5.5000e-004	0.0669	3.4000e-004	0.0673	0.0178	3.2000e-004	0.0181		56.4371	56.4371	1.8000e-003	1.6900e-003	56.9844
Total	**0.0247**	**0.0169**	**0.2041**	**5.5000e-004**	**0.0669**	**3.4000e-004**	**0.0673**	**0.0178**	**3.2000e-004**	**0.0181**		**56.4371**	**56.4371**	**1.8000e-003**	**1.6900e-003**	**56.9844**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0916	0.0000	7.0916	3.4261	0.0000	3.4261			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0916**	**0.7423**	**7.8338**	**3.4261**	**0.6829**	**4.1090**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

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	0.0268	1.1974	0.2594	5.1100e-003	0.1556	0.0132	0.1688	0.0427	0.0126	0.0553		545.6179	545.6179	7.3100e-003	0.0860	571.4140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0211	0.2552	6.9000e-004	0.0837	4.3000e-004	0.0841	0.0222	4.0000e-004	0.0226		70.5463	70.5463	2.2500e-003	2.1100e-003	71.2305
Total	**0.0577**	**1.2186**	**0.5145**	**5.8000e-003**	**0.2393**	**0.0136**	**0.2529**	**0.0648**	**0.0130**	**0.0779**		**616.1643**	**616.1643**	**9.5600e-003**	**0.0881**	**642.6445**

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7657	0.0000	2.7657	1.3362	0.0000	1.3362			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.482 5	1,995.482 5	0.6454		2,011.616 9
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**2.7657**	**0.7423**	**3.5080**	**1.3362**	**0.6829**	**2.0191**	**0.0000**	**1,995.482 5**	**1,995.482 5**	**0.6454**		**2,011.616 9**

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	0.0268	1.1974	0.2594	5.1100e-003	0.1556	0.0132	0.1688	0.0427	0.0126	0.0553		545.6179	545.6179	7.3100e-003	0.0860	571.4140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0211	0.2552	6.9000e-004	0.0837	4.3000e-004	0.0841	0.0222	4.0000e-004	0.0226		70.5463	70.5463	2.2500e-003	2.1100e-003	71.2305
Total	**0.0577**	**1.2186**	**0.5145**	**5.8000e-003**	**0.2393**	**0.0136**	**0.2529**	**0.0648**	**0.0130**	**0.0779**		**616.1643**	**616.1643**	**9.5600e-003**	**0.0881**	**642.6445**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.4535	0.1711	1.7600e-003	0.0602	5.7800e-003	0.0660	0.0174	5.5300e-003	0.0229		186.4247	186.4247	2.0000e-003	0.0277	194.7346
Worker	0.1330	0.0909	1.0971	2.9800e-003	0.3598	1.8500e-003	0.3616	0.0954	1.7000e-003	0.0971		303.3492	303.3492	9.6600e-003	9.0600e-003	306.2911
Total	**0.1494**	**0.5445**	**1.2682**	**4.7400e-003**	**0.4200**	**7.6300e-003**	**0.4276**	**0.1128**	**7.2300e-003**	**0.1200**		**489.7739**	**489.7739**	**0.0117**	**0.0368**	**501.0258**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.4535	0.1711	1.7600e-003	0.0602	5.7800e-003	0.0660	0.0174	5.5300e-003	0.0229		186.4247	186.4247	2.0000e-003	0.0277	194.7346
Worker	0.1330	0.0909	1.0971	2.9800e-003	0.3598	1.8500e-003	0.3616	0.0954	1.7000e-003	0.0971		303.3492	303.3492	9.6600e-003	9.0600e-003	306.2911
Total	**0.1494**	**0.5445**	**1.2682**	**4.7400e-003**	**0.4200**	**7.6300e-003**	**0.4276**	**0.1128**	**7.2300e-003**	**0.1200**		**489.7739**	**489.7739**	**0.0117**	**0.0368**	**501.0258**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0116	0.3602	0.1593	1.6900e-003	0.0602	2.7000e-003	0.0629	0.0174	2.5900e-003	0.0199		179.3026	179.3026	1.8500e-003	0.0266	187.2668
Worker	0.1236	0.0806	1.0141	2.8900e-003	0.3598	1.7400e-003	0.3615	0.0954	1.6000e-003	0.0970		295.4222	295.4222	8.7300e-003	8.3800e-003	298.1381
Total	**0.1351**	**0.4408**	**1.1734**	**4.5800e-003**	**0.4200**	**4.4400e-003**	**0.4244**	**0.1128**	**4.1900e-003**	**0.1170**		**474.7248**	**474.7248**	**0.0106**	**0.0350**	**485.4049**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0116	0.3602	0.1593	1.6900e-003	0.0602	2.7000e-003	0.0629	0.0174	2.5900e-003	0.0199		179.3026	179.3026	1.8500e-003	0.0266	187.2668
Worker	0.1236	0.0806	1.0141	2.8900e-003	0.3598	1.7400e-003	0.3615	0.0954	1.6000e-003	0.0970		295.4222	295.4222	8.7300e-003	8.3800e-003	298.1381
Total	**0.1351**	**0.4408**	**1.1734**	**4.5800e-003**	**0.4200**	**4.4400e-003**	**0.4244**	**0.1128**	**4.1900e-003**	**0.1170**		**474.7248**	**474.7248**	**0.0106**	**0.0350**	**485.4049**

3.4 Building Construction - 2024

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153		2,289.654 1	2,289.654 1	0.4265		2,300.315 4
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**		**2,289.654 1**	**2,289.654 1**	**0.4265**		**2,300.315 4**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0114	0.3601	0.1577	1.6600e-003	0.0602	2.6800e-003	0.0629	0.0174	2.5700e-003	0.0199		176.5413	176.5413	1.9100e-003	0.0261	184.3733
Worker	0.1154	0.0719	0.9516	2.8000e-003	0.3598	1.6600e-003	0.3614	0.0954	1.5300e-003	0.0970		288.3463	288.3463	7.9400e-003	7.8000e-003	290.8691
Total	**0.1267**	**0.4321**	**1.1092**	**4.4600e-003**	**0.4200**	**4.3400e-003**	**0.4243**	**0.1128**	**4.1000e-003**	**0.1169**		**464.8876**	**464.8876**	**9.8500e-003**	**0.0339**	**475.2424**

3.4 Building Construction - 2024

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	1.5971	12.8235	14.1002	0.0250		0.5381	0.5381		0.5153	0.5153	0.0000	2,289.6541	2,289.6541	0.4265		2,300.3154
Total	**1.5971**	**12.8235**	**14.1002**	**0.0250**		**0.5381**	**0.5381**		**0.5153**	**0.5153**	**0.0000**	**2,289.6541**	**2,289.6541**	**0.4265**		**2,300.3154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0114	0.3601	0.1577	1.6600e-003	0.0602	2.6800e-003	0.0629	0.0174	2.5700e-003	0.0199		176.5413	176.5413	1.9100e-003	0.0261	184.3733
Worker	0.1154	0.0719	0.9516	2.8000e-003	0.3598	1.6600e-003	0.3614	0.0954	1.5300e-003	0.0970		288.3463	288.3463	7.9400e-003	7.8000e-003	290.8691
Total	**0.1267**	**0.4321**	**1.1092**	**4.4600e-003**	**0.4200**	**4.3400e-003**	**0.4243**	**0.1128**	**4.1000e-003**	**0.1169**		**464.8876**	**464.8876**	**9.8500e-003**	**0.0339**	**475.2424**

3.5 Paving - 2024

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652		1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8572**	**8.1030**	**11.7069**	**0.0179**		**0.3957**	**0.3957**		**0.3652**	**0.3652**		**1,710.2024**	**1,710.2024**	**0.5420**		**1,723.7529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0402	0.0251	0.3319	9.8000e-004	0.1255	5.8000e-004	0.1261	0.0333	5.3000e-004	0.0338		100.5859	100.5859	2.7700e-003	2.7200e-003	101.4660
Total	**0.0402**	**0.0251**	**0.3319**	**9.8000e-004**	**0.1255**	**5.8000e-004**	**0.1261**	**0.0333**	**5.3000e-004**	**0.0338**		**100.5859**	**100.5859**	**2.7700e-003**	**2.7200e-003**	**101.4660**

3.5 Paving - 2024

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	0.8425	8.1030	11.7069	0.0179		0.3957	0.3957		0.3652	0.3652	0.0000	1,710.2024	1,710.2024	0.5420		1,723.7529
Paving	0.0147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8572**	**8.1030**	**11.7069**	**0.0179**		**0.3957**	**0.3957**		**0.3652**	**0.3652**	**0.0000**	**1,710.2024**	**1,710.2024**	**0.5420**		**1,723.7529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0402	0.0251	0.3319	9.8000e-004	0.1255	5.8000e-004	0.1261	0.0333	5.3000e-004	0.0338		100.5859	100.5859	2.7700e-003	2.7200e-003	101.4660
Total	**0.0402**	**0.0251**	**0.3319**	**9.8000e-004**	**0.1255**	**5.8000e-004**	**0.1261**	**0.0333**	**5.3000e-004**	**0.0338**		**100.5859**	**100.5859**	**2.7700e-003**	**2.7200e-003**	**101.4660**

3.6 Architectural Coating - 2024

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	16.2814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**16.4622**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0241	0.0151	0.1992	5.9000e-004	0.0753	3.5000e-004	0.0757	0.0200	3.2000e-004	0.0203		60.3516	60.3516	1.6600e-003	1.6300e-003	60.8796
Total	**0.0241**	**0.0151**	**0.1992**	**5.9000e-004**	**0.0753**	**3.5000e-004**	**0.0757**	**0.0200**	**3.2000e-004**	**0.0203**		**60.3516**	**60.3516**	**1.6600e-003**	**1.6300e-003**	**60.8796**

3.6 Architectural Coating - 2024

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	16.2814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**16.4622**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0241	0.0151	0.1992	5.9000e-004	0.0753	3.5000e-004	0.0757	0.0200	3.2000e-004	0.0203		60.3516	60.3516	1.6600e-003	1.6300e-003	60.8796
Total	**0.0241**	**0.0151**	**0.1992**	**5.9000e-004**	**0.0753**	**3.5000e-004**	**0.0757**	**0.0200**	**3.2000e-004**	**0.0203**		**60.3516**	**60.3516**	**1.6600e-003**	**1.6300e-003**	**60.8796**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	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	0.4298	0.4847	3.0000	5.4800e-003	0.5712	4.9000e-003	0.5761	0.1524	4.5900e-003	0.1570		567.9327	567.9327	0.0467	0.0368	580.0638
Unmitigated	0.5013	0.6765	4.2157	9.0800e-003	0.9766	7.7200e-003	0.9843	0.2605	7.2300e-003	0.2678		940.1103	940.1103	0.0598	0.0521	957.1414

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.76	109.20	109.20	328,252	191,994
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Health Club	76.38	76.38	76.38	100,355	58,698
Total	238.14	185.58	185.58	428,607	250,692

4.3 Trip Type Information

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

	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
Apartments Low Rise	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Parking Lot	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Health Club	12.50	4.20	5.40	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Non-Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Parking Lot	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Health Club	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

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	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132
NaturalGas Unmitigated	0.0128	0.1109	0.0552	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.0807	140.0807	2.6800e-003	2.5700e-003	140.9132

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					
Apartments Low Rise	994.58	0.0107	0.0917	0.0390	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003		117.0095	117.0095	2.2400e-003	2.1500e-003	117.7048
Health Club	196.106	2.1100e-003	0.0192	0.0162	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0713	23.0713	4.4000e-004	4.2000e-004	23.2084
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		**0.0128**	**0.1109**	**0.0552**	**7.1000e-004**		**8.8700e-003**	**8.8700e-003**		**8.8700e-003**	**8.8700e-003**		**140.0807**	**140.0807**	**2.6800e-003**	**2.5700e-003**	**140.9132**

5.2 Energy by Land Use - NaturalGas

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					
Apartments Low Rise	0.99458	0.0107	0.0917	0.0390	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003		117.0095	117.0095	2.2400e-003	2.1500e-003	117.7048
Health Club	0.196106	2.1100e-003	0.0192	0.0162	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0713	23.0713	4.4000e-004	4.2000e-004	23.2084
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		**0.0128**	**0.1109**	**0.0552**	**7.1000e-004**		**8.8700e-003**	**8.8700e-003**		**8.8700e-003**	**8.8700e-003**		**140.0807**	**140.0807**	**2.6800e-003**	**2.5700e-003**	**140.9132**

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	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976
Unmitigated	2.4083	0.3812	2.1391	2.3900e-003		0.0400	0.0400		0.0400	0.0400	0.0000	460.9929	460.9929	0.0122	8.3900e-003	463.7976

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	0.6580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0419	0.3583	0.1525	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	457.4118	457.4118	8.7700e-003	8.3900e-003	460.1299
Landscaping	0.0602	0.0229	1.9866	1.1000e-004		0.0110	0.0110		0.0110	0.0110		3.5811	3.5811	3.4600e-003		3.6677
Total	**2.4083**	**0.3812**	**2.1391**	**2.4000e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**460.9929**	**460.9929**	**0.0122**	**8.3900e-003**	**463.7976**

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	0.6580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0419	0.3583	0.1525	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	457.4118	457.4118	8.7700e-003	8.3900e-003	460.1299
Landscaping	0.0602	0.0229	1.9866	1.1000e-004		0.0110	0.0110		0.0110	0.0110		3.5811	3.5811	3.4600e-003		3.6677
Total	**2.4083**	**0.3812**	**2.1391**	**2.4000e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**460.9929**	**460.9929**	**0.0122**	**8.3900e-003**	**463.7976**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

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

Table S-1
Project Trip Generation

Trip Generation Rates										
			WEEKDAY							WEEKEND
		Land Use	AM Peak Hour			PM Peak Hour			Daily	
Land Use	Source[1]	Variable[2]	% In	% Out	Rate	% In	% Out	Rate	Rate	Daily Rate
Multifamily Housing (Low-Rise)	ITE 220	DU	24%	76%	0.40	63%	37%	0.51	6.74	4.55
Health Fitness Club	ITE 492	TSF	51%	49%	1.31	57%	43%	3.45	34.50	34.50

Trips Generated										
			WEEKDAY							WEEKEND
			AM Peak Hour			PM Peak Hour				
Land Use	Source	Quantity	In	Out	Total	In	Out	Total	Daily	Daily
Multifamily Housing (Low-Rise)	ITE 220	24 DU	2	7	9	8	5	13	162	109
Health Fitness Club	ITE 492	2.214 TSF	1	1	2	4	3	7	76	76
TOTAL TRIPS GENERATED			**3**	**8**	**11**	**12**	**8**	**20**	**238**	**185**

Notes:

1. ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code.
   All rates based on General Urban/Suburban setting unless otherwise noted.
   In the absence of a daily rate for ITE 492 - Health Fitness Club, the daily rate was estimated as 10 times the weekday PM peak hour rate.

2. TSF = Thousand Square Feet; DU = Dwelling Units

Appendix C

CalEEMod Model Annual Emissions Printouts and EMFAC Data

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

19476 RIOS Project

Riverside-Salton Sea County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	54.16	1000sqft	1.24	54,161.00	0
Parking Lot	16.00	Space	0.09	3,920.00	0
Apartments Low Rise	24.00	Dwelling Unit	1.02	73,839.00	69
Health Club	2.21	1000sqft	0.05	2,214.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ~2.4 ac w/ 24 MF DUs & 2,214sf retail (spa/gym) bldgs totaling 76,053 sf (footprint 46,686 sf), 54,161 sf open spc, & 16 guest prkng spcs (site also includes 42 garage spcs, which are included in residential bldg sf).

Construction Phase - Construction anticipated to begin early November 2022 and be completed by early May 2024 (~18 months).

Grading - 2,087 CY fill - 1,449 CY cut = 638 CY import during grading.

Architectural Coating - SCAQMD Rule 1113 limits architectural coatings to 50 g/L VOC for buildings and 100 g/L VOC for parking lot striping.

Vehicle Trips - Per trip gen estimates using ITE 11th Ed, 6.74 trips/DU/day weekday & 4.55 trips/DU/day weekend for residential & 34.5 trips/TSF/day weekday/weekend for retail.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - ~245 new trees to be planted.

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

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is adjacent to bus stop N Palm Canyon at Chino & ~0.56 miles NW of downtown area of Palm Springs. Sidewalks provided on/off site. 24 DU/2.4 ac = 10 DU/ac.

Water Mitigation - 20% reduction indoor water use per CalGreen standards. Water efficient irrigation systems.

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

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	NumDays	6.00	9.00
tblConstructionPhase	NumDays	220.00	346.00
tblConstructionPhase	NumDays	10.00	16.00
tblConstructionPhase	NumDays	10.00	30.00
tblFireplaces	NumberGas	19.20	21.60
tblFireplaces	NumberWood	2.40	0.00
tblGrading	MaterialImported	0.00	638.00
tblLandUse	LandUseSquareFeet	54,160.00	54,161.00
tblLandUse	LandUseSquareFeet	6,400.00	3,920.00
tblLandUse	LandUseSquareFeet	24,000.00	73,839.00
tblLandUse	LotAcreage	0.14	0.09
tblLandUse	LotAcreage	1.50	1.02
tblSequestration	NumberOfNewTrees	0.00	245.00
tblVehicleTrips	ST_TR	8.14	4.55
tblVehicleTrips	ST_TR	20.87	34.50
tblVehicleTrips	SU_TR	6.28	4.55

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

tblVehicleTrips	SU_TR	26.73	34.50
tblVehicleTrips	WD_TR	7.32	6.74
tblVehicleTrips	WD_TR	32.93	34.50
tblWoodstoves	NumberCatalytic	1.20	0.00
tblWoodstoves	NumberNoncatalytic	1.20	0.00

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					
2022	0.0407	0.3483	0.3046	6.3000e-004	0.0433	0.0155	0.0589	0.0178	0.0147	0.0326	0.0000	54.0957	54.0957	0.0106	8.7000e-004	54.6184
2023	0.2397	1.8281	2.0066	3.8600e-003	0.0537	0.0804	0.1341	0.0144	0.0770	0.0914	0.0000	326.7676	326.7676	0.0523	4.1300e-003	329.3069
2024	0.3026	0.4546	0.5538	1.0300e-003	0.0137	0.0193	0.0329	3.6700e-003	0.0184	0.0221	0.0000	87.9587	87.9587	0.0153	9.1000e-004	88.6107
Maximum	**0.3026**	**1.8281**	**2.0066**	**3.8600e-003**	**0.0537**	**0.0804**	**0.1341**	**0.0178**	**0.0770**	**0.0914**	**0.0000**	**326.7676**	**326.7676**	**0.0523**	**4.1300e-003**	**329.3069**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0407	0.3483	0.3046	6.3000e-004	0.0214	0.0155	0.0370	8.1800e-003	0.0147	0.0229	0.0000	54.0957	54.0957	0.0106	8.7000e-004	54.6184
2023	0.2397	1.8281	2.0066	3.8600e-003	0.0537	0.0804	0.1341	0.0144	0.0770	0.0914	0.0000	326.7673	326.7673	0.0523	4.1300e-003	329.3066
2024	0.3026	0.4546	0.5538	1.0300e-003	0.0137	0.0193	0.0329	3.6700e-003	0.0184	0.0221	0.0000	87.9587	87.9587	0.0153	9.1000e-004	88.6106
Maximum	**0.3026**	**1.8281**	**2.0066**	**3.8600e-003**	**0.0537**	**0.0804**	**0.1341**	**0.0144**	**0.0770**	**0.0914**	**0.0000**	**326.7673**	**326.7673**	**0.0523**	**4.1300e-003**	**329.3066**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	19.78	0.00	9.69	26.87	0.00	6.62	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	11-1-2022	1-31-2023	0.5601	0.5601
2	2-1-2023	4-30-2023	0.5057	0.5057
3	5-1-2023	7-31-2023	0.5225	0.5225
4	8-1-2023	10-31-2023	0.5226	0.5226
5	11-1-2023	1-31-2024	0.5125	0.5125
6	2-1-2024	4-30-2024	0.5819	0.5819
7	5-1-2024	7-31-2024	0.0063	0.0063
		Highest	0.5819	0.5819

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	0.4280	0.0168	0.1850	1.0000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	17.3056	17.3056	6.1000e-004	3.1000e-004	17.4138
Energy	2.3400e-003	0.0202	0.0101	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	45.0788	45.0788	2.2900e-003	6.5000e-004	45.3295
Mobile	0.0862	0.1148	0.7325	1.5600e-003	0.1621	1.3000e-003	0.1634	0.0433	1.2200e-003	0.0445	0.0000	146.2276	146.2276	9.1400e-003	8.0300e-003	148.8501
Waste						0.0000	0.0000		0.0000	0.0000	4.7987	0.0000	4.7987	0.2836	0.0000	11.8886
Water						0.0000	0.0000		0.0000	0.0000	0.5376	6.0129	6.5505	0.0557	1.3700e-003	8.3503
Total	**0.5166**	**0.1518**	**0.9277**	**1.7900e-003**	**0.1621**	**5.1000e-003**	**0.1672**	**0.0433**	**5.0200e-003**	**0.0483**	**5.3363**	**214.6249**	**219.9612**	**0.3514**	**0.0104**	**231.8323**

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	0.4280	0.0168	0.1850	1.0000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	17.3056	17.3056	6.1000e-004	3.1000e-004	17.4138
Energy	2.3400e-003	0.0202	0.0101	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	45.0788	45.0788	2.2900e-003	6.5000e-004	45.3295
Mobile	0.0741	0.0820	0.5178	9.4000e-004	0.0948	8.3000e-004	0.0956	0.0253	7.7000e-004	0.0261	0.0000	88.3018	88.3018	7.1200e-003	5.6600e-003	90.1675
Waste						0.0000	0.0000		0.0000	0.0000	1.1997	0.0000	1.1997	0.0709	0.0000	2.9722
Water						0.0000	0.0000		0.0000	0.0000	0.4300	5.2304	5.6604	0.0446	1.1000e-003	7.1025
Total	**0.5044**	**0.1189**	**0.7129**	**1.1700e-003**	**0.0948**	**4.6300e-003**	**0.0994**	**0.0253**	**4.5700e-003**	**0.0299**	**1.6297**	**155.9166**	**157.5463**	**0.1255**	**7.7200e-003**	**162.9854**

	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	**2.36**	**21.62**	**23.15**	**34.64**	**41.51**	**9.22**	**40.53**	**41.50**	**8.96**	**38.12**	**69.46**	**27.35**	**28.38**	**64.27**	**25.48**	**29.70**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	173.4600
Total	**173.4600**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2022	11/7/2022	5	5	
2	Grading	Grading	11/8/2022	11/18/2022	5	9	
3	Building Construction	Building Construction	11/19/2022	3/18/2024	5	346	
4	Paving	Paving	3/19/2024	4/9/2024	5	16	
5	Architectural Coating	Architectural Coating	3/21/2024	5/1/2024	5	30	

Acres of Grading (Site Preparation Phase): 7.5

Acres of Grading (Grading Phase): 9

Acres of Paving: 1.33

Residential Indoor: 149,524; Residential Outdoor: 49,841; Non-Residential Indoor: 3,321; Non-Residential Outdoor: 1,107; Striped Parking Area: 3,485 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

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
Site Preparation	3	8.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	80.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	43.00	12.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	11.00	5.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9800e-003	0.0000	3.9800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4500e-003	0.0392	0.0251	6.0000e-005		1.4900e-003	1.4900e-003		1.3700e-003	1.3700e-003	0.0000	5.3868	5.3868	1.7400e-003	0.0000	5.4303
Total	**3.4500e-003**	**0.0392**	**0.0251**	**6.0000e-005**	**3.9800e-003**	**1.4900e-003**	**5.4700e-003**	**4.3000e-004**	**1.3700e-003**	**1.8000e-003**	**0.0000**	**5.3868**	**5.3868**	**1.7400e-003**	**0.0000**	**5.4303**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.4000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1322
Total	**6.0000e-005**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1322**

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					1.5500e-003	0.0000	1.5500e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4500e-003	0.0392	0.0251	6.0000e-005		1.4900e-003	1.4900e-003		1.3700e-003	1.3700e-003	0.0000	5.3868	5.3868	1.7400e-003	0.0000	5.4303
Total	**3.4500e-003**	**0.0392**	**0.0251**	**6.0000e-005**	**1.5500e-003**	**1.4900e-003**	**3.0400e-003**	**1.7000e-004**	**1.3700e-003**	**1.5400e-003**	**0.0000**	**5.3868**	**5.3868**	**1.7400e-003**	**0.0000**	**5.4303**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.4000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1322
Total	**6.0000e-005**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1322**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9300e-003	0.0764	0.0415	9.0000e-005		3.3400e-003	3.3400e-003		3.0700e-003	3.0700e-003	0.0000	8.1462	8.1462	2.6300e-003	0.0000	8.2121
Total	**6.9300e-003**	**0.0764**	**0.0415**	**9.0000e-005**	**0.0319**	**3.3400e-003**	**0.0353**	**0.0154**	**3.0700e-003**	**0.0185**	**0.0000**	**8.1462**	**8.1462**	**2.6300e-003**	**0.0000**	**8.2121**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	5.3900e-003	1.1500e-003	2.0000e-005	6.9000e-004	6.0000e-005	7.5000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	2.2264	2.2264	3.0000e-005	3.5000e-004	2.3317
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	1.3000e-004	1.0000e-004	1.2100e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2947	0.2947	1.0000e-005	1.0000e-005	0.2975
Total	**2.5000e-004**	**5.4900e-003**	**2.3600e-003**	**2.0000e-005**	**1.0600e-003**	**6.0000e-005**	**1.1200e-003**	**2.9000e-004**	**6.0000e-005**	**3.5000e-004**	**0.0000**	**2.5211**	**2.5211**	**4.0000e-005**	**3.6000e-004**	**2.6292**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0125	0.0000	0.0125	6.0100e-003	0.0000	6.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9300e-003	0.0764	0.0415	9.0000e-005		3.3400e-003	3.3400e-003		3.0700e-003	3.0700e-003	0.0000	8.1462	8.1462	2.6300e-003	0.0000	8.2121
Total	**6.9300e-003**	**0.0764**	**0.0415**	**9.0000e-005**	**0.0125**	**3.3400e-003**	**0.0158**	**6.0100e-003**	**3.0700e-003**	**9.0800e-003**	**0.0000**	**8.1462**	**8.1462**	**2.6300e-003**	**0.0000**	**8.2121**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	5.3900e-003	1.1500e-003	2.0000e-005	6.9000e-004	6.0000e-005	7.5000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	2.2264	2.2264	3.0000e-005	3.5000e-004	2.3317
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	1.3000e-004	1.0000e-004	1.2100e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2947	0.2947	1.0000e-005	1.0000e-005	0.2975
Total	**2.5000e-004**	**5.4900e-003**	**2.3600e-003**	**2.0000e-005**	**1.0600e-003**	**6.0000e-005**	**1.1200e-003**	**2.9000e-004**	**6.0000e-005**	**3.5000e-004**	**0.0000**	**2.5211**	**2.5211**	**4.0000e-005**	**3.6000e-004**	**2.6292**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0278	0.2191	0.2153	3.8000e-004		0.0105	0.0105		0.0101	0.0101	0.0000	31.1520	31.1520	6.0100e-003	0.0000	31.3023
Total	**0.0278**	**0.2191**	**0.2153**	**3.8000e-004**		**0.0105**	**0.0105**		**0.0101**	**0.0101**	**0.0000**	**31.1520**	**31.1520**	**6.0100e-003**	**0.0000**	**31.3023**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	6.7600e-003	2.5100e-003	3.0000e-005	8.9000e-004	9.0000e-005	9.8000e-004	2.6000e-004	8.0000e-005	3.4000e-004	0.0000	2.5348	2.5348	3.0000e-005	3.8000e-004	2.6478
Worker	1.9100e-003	1.4000e-003	0.0173	5.0000e-005	5.3100e-003	3.0000e-005	5.3300e-003	1.4100e-003	3.0000e-005	1.4300e-003	0.0000	4.2238	4.2238	1.3000e-004	1.3000e-004	4.2645
Total	**2.1600e-003**	**8.1600e-003**	**0.0198**	**8.0000e-005**	**6.2000e-003**	**1.2000e-004**	**6.3100e-003**	**1.6700e-003**	**1.1000e-004**	**1.7700e-003**	**0.0000**	**6.7587**	**6.7587**	**1.6000e-004**	**5.1000e-004**	**6.9123**

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	0.0278	0.2191	0.2153	3.8000e-004		0.0105	0.0105		0.0101	0.0101	0.0000	31.1520	31.1520	6.0100e-003	0.0000	31.3022
Total	**0.0278**	**0.2191**	**0.2153**	**3.8000e-004**		**0.0105**	**0.0105**		**0.0101**	**0.0101**	**0.0000**	**31.1520**	**31.1520**	**6.0100e-003**	**0.0000**	**31.3022**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	6.7600e-003	2.5100e-003	3.0000e-005	8.9000e-004	9.0000e-005	9.8000e-004	2.6000e-004	8.0000e-005	3.4000e-004	0.0000	2.5348	2.5348	3.0000e-005	3.8000e-004	2.6478
Worker	1.9100e-003	1.4000e-003	0.0173	5.0000e-005	5.3100e-003	3.0000e-005	5.3300e-003	1.4100e-003	3.0000e-005	1.4300e-003	0.0000	4.2238	4.2238	1.3000e-004	1.3000e-004	4.2645
Total	**2.1600e-003**	**8.1600e-003**	**0.0198**	**8.0000e-005**	**6.2000e-003**	**1.2000e-004**	**6.3100e-003**	**1.6700e-003**	**1.1000e-004**	**1.7700e-003**	**0.0000**	**6.7587**	**6.7587**	**1.6000e-004**	**5.1000e-004**	**6.9123**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2228	1.7711	1.8479	3.2500e-003		0.0798	0.0798		0.0764	0.0764	0.0000	270.0127	270.0127	0.0511	0.0000	271.2893
Total	**0.2228**	**1.7711**	**1.8479**	**3.2500e-003**		**0.0798**	**0.0798**		**0.0764**	**0.0764**	**0.0000**	**270.0127**	**270.0127**	**0.0511**	**0.0000**	**271.2893**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5700e-003	0.0462	0.0203	2.2000e-004	7.7200e-003	3.5000e-004	8.0700e-003	2.2300e-003	3.4000e-004	2.5600e-003	0.0000	21.1082	21.1082	2.2000e-004	3.1300e-003	22.0456
Worker	0.0154	0.0107	0.1384	3.8000e-004	0.0460	2.3000e-004	0.0462	0.0122	2.1000e-004	0.0124	0.0000	35.6468	35.6468	1.0300e-003	1.0100e-003	35.9720
Total	**0.0169**	**0.0569**	**0.1587**	**6.0000e-004**	**0.0537**	**5.8000e-004**	**0.0543**	**0.0144**	**5.5000e-004**	**0.0150**	**0.0000**	**56.7549**	**56.7549**	**1.2500e-003**	**4.1400e-003**	**58.0177**

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	0.2228	1.7711	1.8479	3.2500e-003		0.0798	0.0798		0.0764	0.0764	0.0000	270.0124	270.0124	0.0511	0.0000	271.2889
Total	**0.2228**	**1.7711**	**1.8479**	**3.2500e-003**		**0.0798**	**0.0798**		**0.0764**	**0.0764**	**0.0000**	**270.0124**	**270.0124**	**0.0511**	**0.0000**	**271.2889**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5700e-003	0.0462	0.0203	2.2000e-004	7.7200e-003	3.5000e-004	8.0700e-003	2.2300e-003	3.4000e-004	2.5600e-003	0.0000	21.1082	21.1082	2.2000e-004	3.1300e-003	22.0456
Worker	0.0154	0.0107	0.1384	3.8000e-004	0.0460	2.3000e-004	0.0462	0.0122	2.1000e-004	0.0124	0.0000	35.6468	35.6468	1.0300e-003	1.0100e-003	35.9720
Total	**0.0169**	**0.0569**	**0.1587**	**6.0000e-004**	**0.0537**	**5.8000e-004**	**0.0543**	**0.0144**	**5.5000e-004**	**0.0150**	**0.0000**	**56.7549**	**56.7549**	**1.2500e-003**	**4.1400e-003**	**58.0177**

3.4 Building Construction - 2024

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	0.0447	0.3591	0.3948	7.0000e-004		0.0151	0.0151		0.0144	0.0144	0.0000	58.1599	58.1599	0.0108	0.0000	58.4307
Total	**0.0447**	**0.3591**	**0.3948**	**7.0000e-004**		**0.0151**	**0.0151**		**0.0144**	**0.0144**	**0.0000**	**58.1599**	**58.1599**	**0.0108**	**0.0000**	**58.4307**

3.4 Building Construction - 2024

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	3.3000e-004	9.9500e-003	4.3300e-003	5.0000e-005	1.6600e-003	7.0000e-005	1.7400e-003	4.8000e-004	7.0000e-005	5.5000e-004	0.0000	4.4763	4.4763	5.0000e-005	6.6000e-004	4.6749
Worker	3.0800e-003	2.0600e-003	0.0280	8.0000e-005	9.9100e-003	5.0000e-005	9.9500e-003	2.6300e-003	4.0000e-005	2.6700e-003	0.0000	7.4938	7.4938	2.0000e-004	2.0000e-004	7.5588
Total	**3.4100e-003**	**0.0120**	**0.0323**	**1.3000e-004**	**0.0116**	**1.2000e-004**	**0.0117**	**3.1100e-003**	**1.1000e-004**	**3.2200e-003**	**0.0000**	**11.9701**	**11.9701**	**2.5000e-004**	**8.6000e-004**	**12.2337**

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	0.0447	0.3591	0.3948	7.0000e-004		0.0151	0.0151		0.0144	0.0144	0.0000	58.1598	58.1598	0.0108	0.0000	58.4306
Total	**0.0447**	**0.3591**	**0.3948**	**7.0000e-004**		**0.0151**	**0.0151**		**0.0144**	**0.0144**	**0.0000**	**58.1598**	**58.1598**	**0.0108**	**0.0000**	**58.4306**

3.4 Building Construction - 2024

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	3.3000e-004	9.9500e-003	4.3300e-003	5.0000e-005	1.6600e-003	7.0000e-005	1.7400e-003	4.8000e-004	7.0000e-005	5.5000e-004	0.0000	4.4763	4.4763	5.0000e-005	6.6000e-004	4.6749
Worker	3.0800e-003	2.0600e-003	0.0280	8.0000e-005	9.9100e-003	5.0000e-005	9.9500e-003	2.6300e-003	4.0000e-005	2.6700e-003	0.0000	7.4938	7.4938	2.0000e-004	2.0000e-004	7.5588
Total	**3.4100e-003**	**0.0120**	**0.0323**	**1.3000e-004**	**0.0116**	**1.2000e-004**	**0.0117**	**3.1100e-003**	**1.1000e-004**	**3.2200e-003**	**0.0000**	**11.9701**	**11.9701**	**2.5000e-004**	**8.6000e-004**	**12.2337**

3.5 Paving - 2024

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	6.7400e-003	0.0648	0.0937	1.4000e-004		3.1700e-003	3.1700e-003		2.9200e-003	2.9200e-003	0.0000	12.4118	12.4118	3.9300e-003	0.0000	12.5101
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8600e-003**	**0.0648**	**0.0937**	**1.4000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9200e-003**	**2.9200e-003**	**0.0000**	**12.4118**	**12.4118**	**3.9300e-003**	**0.0000**	**12.5101**

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.1000e-004	2.7900e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7469	0.7469	2.0000e-005	2.0000e-005	0.7534
Total	**3.1000e-004**	**2.1000e-004**	**2.7900e-003**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7469**	**0.7469**	**2.0000e-005**	**2.0000e-005**	**0.7534**

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	6.7400e-003	0.0648	0.0937	1.4000e-004		3.1700e-003	3.1700e-003		2.9200e-003	2.9200e-003	0.0000	12.4117	12.4117	3.9300e-003	0.0000	12.5101
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8600e-003**	**0.0648**	**0.0937**	**1.4000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9200e-003**	**2.9200e-003**	**0.0000**	**12.4117**	**12.4117**	**3.9300e-003**	**0.0000**	**12.5101**

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.1000e-004	2.7900e-003	1.0000e-005	9.9000e-004	0.0000	9.9000e-004	2.6000e-004	0.0000	2.7000e-004	0.0000	0.7469	0.7469	2.0000e-005	2.0000e-005	0.7534
Total	**3.1000e-004**	**2.1000e-004**	**2.7900e-003**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**9.9000e-004**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**0.7469**	**0.7469**	**2.0000e-005**	**2.0000e-005**	**0.7534**

3.6 Architectural Coating - 2024

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	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7100e-003	0.0183	0.0272	4.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	3.8299	3.8299	2.2000e-004	0.0000	3.8353
Total	**0.2469**	**0.0183**	**0.0272**	**4.0000e-005**		**9.1000e-004**	**9.1000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**3.8299**	**3.8299**	**2.2000e-004**	**0.0000**	**3.8353**

3.6 Architectural Coating - 2024

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	3.5000e-004	2.3000e-004	3.1400e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.8403	0.8403	2.0000e-005	2.0000e-005	0.8475
Total	**3.5000e-004**	**2.3000e-004**	**3.1400e-003**	**1.0000e-005**	**1.1100e-003**	**1.0000e-005**	**1.1200e-003**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.8403**	**0.8403**	**2.0000e-005**	**2.0000e-005**	**0.8475**

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	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7100e-003	0.0183	0.0272	4.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	3.8299	3.8299	2.2000e-004	0.0000	3.8353
Total	**0.2469**	**0.0183**	**0.0272**	**4.0000e-005**		**9.1000e-004**	**9.1000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**3.8299**	**3.8299**	**2.2000e-004**	**0.0000**	**3.8353**

3.6 Architectural Coating - 2024

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	3.5000e-004	2.3000e-004	3.1400e-003	1.0000e-005	1.1100e-003	1.0000e-005	1.1200e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.8403	0.8403	2.0000e-005	2.0000e-005	0.8475
Total	**3.5000e-004**	**2.3000e-004**	**3.1400e-003**	**1.0000e-005**	**1.1100e-003**	**1.0000e-005**	**1.1200e-003**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.8403**	**0.8403**	**2.0000e-005**	**2.0000e-005**	**0.8475**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	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	0.0741	0.0820	0.5178	9.4000e-004	0.0948	8.3000e-004	0.0956	0.0253	7.7000e-004	0.0261	0.0000	88.3018	88.3018	7.1200e-003	5.6600e-003	90.1675
Unmitigated	0.0862	0.1148	0.7325	1.5600e-003	0.1621	1.3000e-003	0.1634	0.0433	1.2200e-003	0.0445	0.0000	146.2276	146.2276	9.1400e-003	8.0300e-003	148.8501

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.76	109.20	109.20	328,252	191,994
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Health Club	76.38	76.38	76.38	100,355	58,698
Total	238.14	185.58	185.58	428,607	250,692

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
Apartments Low Rise	11.00	3.50	4.50	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Parking Lot	12.50	4.20	5.40	0.00	0.00	0.00	0	0	0
Health Club	12.50	4.20	5.40	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Other Non-Asphalt Surfaces	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Parking Lot	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189
Health Club	0.537845	0.056225	0.173186	0.138405	0.025906	0.007191	0.011447	0.018769	0.000611	0.000309	0.023821	0.001097	0.005189

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	21.8869	21.8869	1.8500e-003	2.2000e-004	21.9998
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.8869	21.8869	1.8500e-003	2.2000e-004	21.9998
NaturalGas Mitigated	2.3400e-003	0.0202	0.0101	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1919	23.1919	4.4000e-004	4.3000e-004	23.3298
NaturalGas Unmitigated	2.3400e-003	0.0202	0.0101	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1919	23.1919	4.4000e-004	4.3000e-004	23.3298

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					
Apartments Low Rise	363022	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	19.3722	19.3722	3.7000e-004	3.6000e-004	19.4874
Health Club	71578.6	3.9000e-004	3.5100e-003	2.9500e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8197	3.8197	7.0000e-005	7.0000e-005	3.8424
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		**2.3500e-003**	**0.0202**	**0.0101**	**1.3000e-004**		**1.6200e-003**	**1.6200e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**23.1919**	**23.1919**	**4.4000e-004**	**4.3000e-004**	**23.3298**

5.2 Energy by Land Use - NaturalGas

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					
Apartments Low Rise	363022	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	19.3722	19.3722	3.7000e-004	3.6000e-004	19.4874
Health Club	71578.6	3.9000e-004	3.5100e-003	2.9500e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8197	3.8197	7.0000e-005	7.0000e-005	3.8424
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		**2.3500e-003**	**0.0202**	**0.0101**	**1.3000e-004**		**1.6200e-003**	**1.6200e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**23.1919**	**23.1919**	**4.4000e-004**	**4.3000e-004**	**23.3298**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	100079	17.7485	1.5000e-003	1.8000e-004	17.8401
Health Club	21962.9	3.8950	3.3000e-004	4.0000e-005	3.9151
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1372	0.2433	2.0000e-005	0.0000	0.2446
Total		**21.8869**	**1.8500e-003**	**2.2000e-004**	**21.9998**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	100079	17.7485	1.5000e-003	1.8000e-004	17.8401
Health Club	21962.9	3.8950	3.3000e-004	4.0000e-005	3.9151
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	1372	0.2433	2.0000e-005	0.0000	0.2446
Total		**21.8869**	**1.8500e-003**	**2.2000e-004**	**21.9998**

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	0.4280	0.0168	0.1850	1.0000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	17.3056	17.3056	6.1000e-004	3.1000e-004	17.4138
Unmitigated	0.4280	0.0168	0.1850	1.0000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	17.3056	17.3056	6.1000e-004	3.1000e-004	17.4138

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	0.1201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3008					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.7200e-003	0.0147	6.2500e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	17.0132	17.0132	3.3000e-004	3.1000e-004	17.1143
Landscaping	5.4200e-003	2.0600e-003	0.1788	1.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	0.2924	0.2924	2.8000e-004	0.0000	0.2995
Total	**0.4280**	**0.0168**	**0.1850**	**1.0000e-004**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**17.3056**	**17.3056**	**6.1000e-004**	**3.1000e-004**	**17.4138**

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	0.1201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3008					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.7200e-003	0.0147	6.2500e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	17.0132	17.0132	3.3000e-004	3.1000e-004	17.1143
Landscaping	5.4200e-003	2.0600e-003	0.1788	1.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	0.2924	0.2924	2.8000e-004	0.0000	0.2995
Total	**0.4280**	**0.0168**	**0.1850**	**1.0000e-004**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**17.3056**	**17.3056**	**6.1000e-004**	**3.1000e-004**	**17.4138**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.6604	0.0446	1.1000e-003	7.1025
Unmitigated	6.5505	0.0557	1.3700e-003	8.3503

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.5637 / 0.985809	6.0494	0.0514	1.2600e-003	7.7104
Health Club	0.130706 / 0.0801103	0.5011	4.3000e-003	1.1000e-004	0.6400
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		**6.5505**	**0.0557**	**1.3700e-003**	**8.3503**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.25096 / 0.985809	5.2280	0.0412	1.0100e-003	6.5588
Health Club	0.104565 / 0.0801103	0.4325	3.4400e-003	8.0000e-005	0.5437
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		**5.6604**	**0.0446**	**1.0900e-003**	**7.1025**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.1997	0.0709	0.0000	2.9722
Unmitigated	4.7987	0.2836	0.0000	11.8886

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	11.04	2.2410	0.1324	0.0000	5.5520
Health Club	12.6	2.5577	0.1512	0.0000	6.3366
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		**4.7987**	**0.2836**	**0.0000**	**11.8886**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	2.76	0.5603	0.0331	0.0000	1.3880
Health Club	3.15	0.6394	0.0378	0.0000	1.5841
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		**1.1997**	**0.0709**	**0.0000**	**2.9722**

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

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

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	173.4600	0.0000	0.0000	173.4600

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	245	173.4600	0.0000	0.0000	173.4600
Total		**173.4600**	**0.0000**	**0.0000**	**173.4600**

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2022	HHDT	Aggregate	Aggregate	Gasoline	93.77521787	1876.254559	0	1.271766939	1271.766939	1998484.407	4872.85011	11739264.89	**5.87**	**HHDT**
South Coast	2022	HHDT	Aggregate	Aggregate	Diesel	86344.61493	1308488.279	0	1883.165573	1883165.573		11080949.98			
South Coast	2022	HHDT	Aggregate	Aggregate	Natural Gas	9530.013799	64445.55712	0	114.0470669	114047.0669		653442.0558			
South Coast	2022	LDA	Aggregate	Aggregate	Gasoline	5432984.929	25333114.49	0	7742.158581	7742158.581	7863292.337	217937990	233491817.2	**29.69**	**LDA**
South Coast	2022	LDA	Aggregate	Aggregate	Diesel	16596.66266	70061.62945	0	12.98213336	12982.13336		525055.9524			
South Coast	2022	LDA	Aggregate	Aggregate	Electricity	204269.3588	1027049.78	3533212.262	0	0		9151442.882			
South Coast	2022	LDA	Aggregate	Aggregate	Plug-in Hybrid	123066.1719	508878.6208	856005.7326	108.1516236	108151.6236		5877328.413			
South Coast	2022	LDT1	Aggregate	Aggregate	Gasoline	508118.9525	2234897.36	0	772.6742907	772674.2907	773091.3918	18186231.22	18233327.62	**23.58**	**LDT1**
South Coast	2022	LDT1	Aggregate	Aggregate	Diesel	219.3543012	650.4955004	0	0.181276274	181.2762739		4217.627426			
South Coast	2022	LDT1	Aggregate	Aggregate	Electricity	860.4090968	3929.280026	11231.02673	0	0		29089.70421			
South Coast	2022	LDT1	Aggregate	Aggregate	Plug-in Hybrid	262.0628223	1083.62977	2172.476691	0.2358249	235.8249004		13789.07098			
South Coast	2022	LDT2	Aggregate	Aggregate	Gasoline	2380478.996	11180656.67	0	4304.779926	4304779.926	4326812.467	97358601.17	97676672.01	**22.57**	**LDT2**
South Coast	2022	LDT2	Aggregate	Aggregate	Diesel	7265.359325	35160.20236	0	10.4792726	10479.2726		318070.8386			
South Coast	2022	LDT2	Aggregate	Aggregate	Electricity	6619.441536	34120.34272	95194.32476	0	0		246564.7012			
South Coast	2022	LDT2	Aggregate	Aggregate	Plug-in Hybrid	12770.05734	52804.18709	99473.18925	11.55326881	11553.26881		651602.4969			
South Coast	2022	LHDT1	Aggregate	Aggregate	Gasoline	200207.0512	2982786.755	0	596.2532604	596253.2604	791494.8201	7670055.089	11609061.87	**14.67**	**LHDT1**
South Coast	2022	LHDT1	Aggregate	Aggregate	Diesel	95425.65716	1200334.722	0	195.2415597	195241.5597		3939006.782			
South Coast	2022	LHDT2	Aggregate	Aggregate	Gasoline	31310.70271	466482.8175	0	100.8426005	100842.6005	201968.3332	1148331.498	2852151.512	**14.12**	**LHDT2**
South Coast	2022	LHDT2	Aggregate	Aggregate	Diesel	41221.34914	518512.7157	0	101.1257327	101125.7327		1703820.013			
South Coast	2022	MCY	Aggregate	Aggregate	Gasoline	232866.3127	465732.6253	0	36.03993715	36039.93715	36039.93715	1478622.183	1478622.183	**41.03**	**MCY**
South Coast	2022	MDV	Aggregate	Aggregate	Gasoline	1546490.389	7140651.876	0	3192.182291	3192182.291	3233168.731	58964077.19	60366385.9	**18.67**	**MDV**
South Coast	2022	MDV	Aggregate	Aggregate	Diesel	19342.84345	91596.79576	0	34.03297982	34032.97982		777527.7955			
South Coast	2022	MDV	Aggregate	Aggregate	Electricity	6696.74782	34502.63749	96159.45426	0	0		249064.5022			
South Coast	2022	MDV	Aggregate	Aggregate	Plug-in Hybrid	8117.761373	33566.94328	55475.93063	6.953460429	6953.460429		375716.4182			
South Coast	2022	MH	Aggregate	Aggregate	Gasoline	31850.36852	3186.310866	0	60.85222666	60852.22666	71928.89964	295792.8678	407742.3745	**5.67**	**MH**
South Coast	2022	MH	Aggregate	Aggregate	Diesel	11356.53565	1135.653565	0	11.07667298	11076.67298		111949.5066			
South Coast	2022	MHDT	Aggregate	Aggregate	Gasoline	26007.04178	520348.8919	0	274.1467882	274146.7882	819392.7308	1387695.111	6218651.542	**7.59**	**MHDT**
South Coast	2022	MHDT	Aggregate	Aggregate	Diesel	111240.7041	1363402.45	0	537.3888811	537388.8811		4766318.794			
South Coast	2022	MHDT	Aggregate	Aggregate	Natural Gas	1338.762023	12270.86005	0	7.857061417	7857.061417		64637.63673			
South Coast	2022	OBUS	Aggregate	Aggregate	Gasoline	5619.001977	112424.9916	0	46.10429672	46104.29672	82591.31041	229489.8627	490521.1159	**5.94**	**OBUS**
South Coast	2022	OBUS	Aggregate	Aggregate	Diesel	2896.768075	36743.40436	0	32.79511564	32795.11564		229036.0369			
South Coast	2022	OBUS	Aggregate	Aggregate	Natural Gas	537.7361163	4785.851435	0	3.691898056	3691.898056		31995.21632			
South Coast	2022	SBUS	Aggregate	Aggregate	Gasoline	2656.068282	10624.27313	0	13.13398403	13133.98403	40315.41184	115961.1562	260029.2373	**6.45**	**SBUS**
South Coast	2022	SBUS	Aggregate	Aggregate	Diesel	3463.174133	50146.76145	0	9.812107071	9812.107071		71631.6642			
South Coast	2022	SBUS	Aggregate	Aggregate	Natural Gas	2857.078854	41370.50181	0	17.36932074	17369.32074		72436.41685			
South Coast	2022	UBUS	Aggregate	Aggregate	Gasoline	892.5609011	3570.243605	0	14.15154342	14151.54342	205291.0561	96764.45551	693436.26	**3.38**	**UBUS**
South Coast	2022	UBUS	Aggregate	Aggregate	Diesel	15.79905129	63.19620517	0	0.277029151	277.0291511		1863.133553			
South Coast	2022	UBUS	Aggregate	Aggregate	Electricity	58.06621632	232.2648653	5333.126445	0	0		2542.871299			
South Coast	2022	UBUS	Aggregate	Aggregate	Natural Gas	4946.181814	19784.72726	0	190.8624835	190862.4835		592265.7996			

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2024	HHDT	Aggregate	Aggregate	Gasoline	64.44258918	1289.367324	0	1.014953313	1014.953313	2024777.341	4089.563798	12241163.02	**6.05**	**HHDT**
South Coast	2024	HHDT	Aggregate	Aggregate	Diesel	92441.35478	1412165.896	0	1913.394963	1913394.963		11547992.76			
South Coast	2024	HHDT	Aggregate	Aggregate	Electricity	291.6455699	3957.931048	53675.68637	0	0		29968.60823			
South Coast	2024	HHDT	Aggregate	Aggregate	Natural Gas	10239.41118	65591.6649	0	110.3674239	110367.4239		659112.0885			
South Coast	2024	LDA	Aggregate	Aggregate	Gasoline	5306414.643	24694249.92	0	7344.088111	7344088.111	7477826.02	213709568	234427100.1	**31.35**	**LDA**
South Coast	2024	LDA	Aggregate	Aggregate	Diesel	14576.24539	60769.87324	0	10.8801639	10880.1639		447477.6987			
South Coast	2024	LDA	Aggregate	Aggregate	Electricity	278128.8376	1389682.584	5111363.117	0	0		13239042.59			
South Coast	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	148523.7719	614145.7966	1077276.451	122.8577446	122857.7446		7031011.891			
South Coast	2024	LDT1	Aggregate	Aggregate	Gasoline	490973.66	2160511.155	0	732.0519082	732051.9082	732790.8073	17788975.08	17880208.77	**24.40**	**LDT1**
South Coast	2024	LDT1	Aggregate	Aggregate	Diesel	178.9755587	511.7069897	0	0.143610092	143.6100917		3350.970633			
South Coast	2024	LDT1	Aggregate	Aggregate	Electricity	1222.38175	5792.038269	19502.00434	0	0		50512.52673			
South Coast	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	719.1459798	2973.668627	6252.19918	0.595288961	595.288961		37370.18633			
South Coast	2024	LDT2	Aggregate	Aggregate	Gasoline	2478766.891	11657788.42	0	4349.789244	4349789.244	4378677.328	102696789.3	104694804	**23.91**	**LDT2**
South Coast	2024	LDT2	Aggregate	Aggregate	Diesel	8144.015434	39238.54602	0	11.30594953	11305.94953		354089.2658			
South Coast	2024	LDT2	Aggregate	Aggregate	Electricity	16093.72479	82313.84321	227422.9885	0	0		589052.7755			
South Coast	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	21096.29549	87233.18184	170348.4264	17.58213479	17582.13479		1054872.659			
South Coast	2024	LHDT1	Aggregate	Aggregate	Gasoline	200171.2476	2982253.334	0	578.7247685	578724.7685	792458.1109	7891021.12	12336952.39	**15.57**	**LHDT1**
South Coast	2024	LHDT1	Aggregate	Aggregate	Diesel	103884.7559	1306739.542	0	213.7333424	213733.3424		4387648.579			
South Coast	2024	LHDT1	Aggregate	Aggregate	Electricity	772.5188678	10791.59936	32624.15974	0	0		58282.68619			
South Coast	2024	LHDT2	Aggregate	Aggregate	Gasoline	31062.46526	462784.4493	0	96.72139231	96721.39231	208303.4828	1155378.828	3095264.249	**14.86**	**LHDT2**
South Coast	2024	LHDT2	Aggregate	Aggregate	Diesel	45926.82058	577701.627	0	111.5820905	111582.0905		1925592.444			
South Coast	2024	LHDT2	Aggregate	Aggregate	Electricity	199.9520404	2646.759351	8006.869611	0	0		14292.97674			
South Coast	2024	MCY	Aggregate	Aggregate	Gasoline	242059.9929	484119.9858	0	37.44895514	37448.95514	37448.95514	1554780.429	1554780.429	**41.52**	**MCY**
South Coast	2024	MDV	Aggregate	Aggregate	Gasoline	1571312.1	7270009.961	0	3162.700535	3162700.535	3206338.183	60817091.34	62832018.9	**19.60**	**MDV**
South Coast	2024	MDV	Aggregate	Aggregate	Diesel	19826.89781	93051.64962	0	33.54860069	33548.60069		786624.2122			
South Coast	2024	MDV	Aggregate	Aggregate	Electricity	17569.44798	89870.84023	248334.7848	0	0		643216.8322			
South Coast	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	12690.57185	52475.51459	92596.30611	10.08904803	10089.04803		585086.5214			
South Coast	2024	MH	Aggregate	Aggregate	Gasoline	29244.94397	2925.664195	0	57.51222476	57512.22476	68984.14797	279544.6577	395398.9997	**5.73**	**MH**
South Coast	2024	MH	Aggregate	Aggregate	Diesel	11703.55798	1170.355798	0	11.47192321	11471.92321		115854.342			
South Coast	2024	MHDT	Aggregate	Aggregate	Gasoline	24845.17438	497102.249	0	256.9342026	256934.2026	812250.5213	1326417.556	6295601.951	**7.75**	**MHDT**
South Coast	2024	MHDT	Aggregate	Aggregate	Diesel	114693.757	1409921.86	0	546.7152883	546715.2883		4878223.739			
South Coast	2024	MHDT	Aggregate	Aggregate	Electricity	355.3876422	4781.870526	20310.12518	0	0		19393.49808			
South Coast	2024	MHDT	Aggregate	Aggregate	Natural Gas	1491.278079	13281.28453	0	8.601030453	8601.030453		71567.15805			
South Coast	2024	OBUS	Aggregate	Aggregate	Gasoline	5296.379398	105969.959	0	41.44060197	41440.60197	78066.51924	209991.62	473651.4166	**6.07**	**OBUS**
South Coast	2024	OBUS	Aggregate	Aggregate	Diesel	2997.3176	37996.11149	0	33.30106375	33301.06375		233646.4445			
South Coast	2024	OBUS	Aggregate	Aggregate	Electricity	11.86106715	237.3162316	941.3362619	0	0		895.192351			
South Coast	2024	OBUS	Aggregate	Aggregate	Natural Gas	480.7769521	4278.914873	0	3.324853528	3324.853528		29118.15975			
South Coast	2024	SBUS	Aggregate	Aggregate	Gasoline	2763.091965	11052.36786	0	13.6568139	13656.8139	40972.05843	121721.653	266076.6289	**6.49**	**SBUS**
South Coast	2024	SBUS	Aggregate	Aggregate	Diesel	3283.370627	47543.20668	0	9.104107226	9104.107226		66807.29386			
South Coast	2024	SBUS	Aggregate	Aggregate	Electricity	21.89425828	248.8609268	740.8107178	0	0		640.6727128			
South Coast	2024	SBUS	Aggregate	Aggregate	Natural Gas	3093.465789	44793.38463	0	18.21113731	18211.13731		76907.00926			
South Coast	2024	UBUS	Aggregate	Aggregate	Gasoline	894.3284655	3577.313862	0	13.89822542	13898.22542	201736.9577	96953.45183	218542.299	**1.08**	**UBUS**
South Coast	2024	UBUS	Aggregate	Aggregate	Diesel	14.32857314	57.31429256	0	0.259550733	259.5507326		1721.679298			
South Coast	2024	UBUS	Aggregate	Aggregate	Electricity	109.3235246	437.2940985	19519.17282	0	0		9364.629999			
South Coast	2024	UBUS	Aggregate	Aggregate	Natural Gas	4918.59249	19674.36996	0	187.5791815	187579.1815		588192.4297			

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Appendix B

Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHP) Consistency Analysis

April 18, 2022

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

SUBJECT: Habitat Assessment and Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) Consistency Analysis for the Proposed RIOS Project Located within Assessor's Parcel Number 505-322-001, -002, –003, and -004 in The City of Palm Springs, Riverside County, California.

Introduction

This report contains the findings of ELMT Consulting's biological resources investigation for the proposed RIOS Project (project site or site) located in the City of Palm Springs, Riverside County, California. ELMT biologist Jacob H. Lloyd Davies conducted a field survey and evaluated the condition of the habitat within the proposed project site on February 25, 2022. The literature review and field investigation were conducted to characterize existing site conditions and assess the probability of occurrence of special-status[1] plant and wildlife species that could pose a constraint to implementation of the project. This report provides a detailed assessment of the suitability of the on-site habitat to support special-status plant and wildlife species that were identified by the California Natural Diversity Database (CNDDB) and other electronic databases as potentially occurring in the vicinity of the proposed project site. Special attention was given to the suitability of the on-site habitat to support species protected under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), and potential jurisdictional drainage features.

Project Location

The proposed project site is generally located south and west of State Route 111 and north and west of the San Jacinto Mountains in the City of Palm Springs, Riverside County, California. The site is depicted on the Palm Springs quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 10 of Township 4 South, Range 4 East. Specifically, the project site is located at the northwest corner of the intersection of West Chino Drive and North Palm Canyon Drive within Assessor Parcel Numbers 505-322-001, -002, -003, and -004. Refer to Exhibits 1-3 in Attachment A.

Project Description

The project proposes to develop a mixed-use development consisting of twenty-four condominium units with various commercial and recreational spaces and associated infrastructure on approximately 2.4 acres. Refer to Attachment B, *Site Plan*.

1 As used in this report, "special-status" refers to plant and wildlife species that are federally or State listed, proposed, or candidates; CVMSHCP listed species; plant species that have been designated a CNPS Rare Plant Rank; and wildlife species that are designated by the CDFW as fully protected, species of special concern, or watch list species.

Methodology

Literature Review

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW's CNDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

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

- CDFW 2012 Staff Report on Burrowing Owl Mitigation;
- Coachella Valley Multiple Species Habitat Conservation Plan;
- Google Earth Pro historic aerial imagery (1994-2021);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey[2]; and
- USFWS Critical Habitat designations for Threatened and Endangered Species.

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

Habitat Assessment/Field Investigation

ELMT biologist Jacob H. Lloyd Davies inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the project site and a 200-foot buffer on February 25, 2022. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support special-status plant and wildlife species. In addition, field staff identified any natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to special-status habitats and/or undeveloped areas, which have higher potentials to support special-status plant and wildlife species.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography,

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

hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

Soil Series Assessment

On-site and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for Riverside County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the project site has undergone.

Plant Communities

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

Plants

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

Wildlife

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

Jurisdictional Drainages and Wetlands

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

Topography and Soils

The project site is located at an approximate elevation of 486 to 496 feet above mean sea level. On-site topography is flat and minimally slopes from west to east. Based on the NRCS USDA Web Soil Survey, the project site is underlain by Myoma fine sand (0 to 5 percent slopes). Refer to Exhibit 4, *Soils*, in Attachment A. Soils on-site have been disturbed and heavily compacted from decades of historic agricultural activities and recent and ongoing land uses.

Existing Site Condition

The project site occurs in an almost entirely developed area in the northern outskirts of downtown Palm Springs. This portion of Palm Springs supported agricultural land for several decades before beginning urbanization in the latter decades of the 1900's. Historic aerials show these disturbances have been ongoing since at least 1972. At present, the site is entirely surrounded by existing development with the exception of a narrow flood control easement immediately to the north. The site itself is largely undeveloped and is utilized as show grounds for various purposes. At the time of the field investigation, the site was hosting an event staging vintage travelling trailers.

Vegetation

The project site supports developed and heavily disturbed land, most of which is unvegetated. Due to historic and ongoing land uses, no natural plant communities are present. Refer to Attachment C, *Site Photographs*, for representative site photographs.

The project site supports two (2) land cover types that would be classified as disturbed and developed (refer to Exhibit 5, *Vegetation*). Disturbed land is present throughout the site, particularly along site boundaries. Common plant species observed in the disturbed areas of the site include cheeseweed (*Malva parviflora*), pale sun cup (*Camissoniopsis pallida*), oleander (*Nerium oleander*), palo verde (*Parkinsonia* sp.), honey mesquite (*Prosopis glandulosa*), creosote (*Larrea tridentata*), London rocket (*Sisymbrium irio*), fountaingrass (*Pennisetum setaceum*), desert dandelion (*Malacothrix glabrata*), bearded cryptantha (*Cryptantha barbigera*), desert needle (*Palafoxia arida*), bermudagrass (*Cynodon dactylon*), foxtail barley (*Hordeum murinum*), and burrobush (*Ambrosia Dumosa*). Developed areas tend to be unvegetated or support minimal hardy plant species or installed trees such as fan palm (*Washingtonia* sp.).

Wildlife

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

Fish

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

Amphibians

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

Reptiles

The project site provides limited foraging and cover habitat for support reptilian species adapted to routine human disturbance and desert environments; however, the degree and manner of routine disturbances is likely to preclude all but the hardiest species and those that would retreat to adjacent developed areas when the site was being staged and utilized for shows. No reptilian species were observed during the field investigation. Common reptilian species that could be expected to occur include western side-blotched lizard (*Uta stansburiana elegans*) and Great Basin fence lizard (*Sceloporus occidentalis longipes*). No special-status reptile species are expected to occur on-site due to lack of natural habitats and aforementioned routine disturbances.

Birds

The project site and surrounding area provides suitable foraging and nesting habitat for avian species adapted to human disturbance and desert environments. Bird species detected during the field investigation include common raven (*Corvus corax*), and rock pigeon (*Columba liva*), and house sparrow (*Haemorhous mexicanus*). Other common bird species that could be expected to occur on-site include mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), and lesser goldfinch (*Spinus psaltria*) and house finch (*Haemorhous mexicanus*).

Mammals

The project site provides suitable foraging and denning habitat for mammalian species adapted to human disturbance and desert environments. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. No mammals were detected during the field investigation. Common mammalian species that could be expected to occur on-site include desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), and mouse-eared bats (*Myotis* spp.).

Nesting Birds and Raptors

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

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction.

Migratory Corridors and Linkages

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

The project site has not been identified as occurring in a wildlife corridor or linkage. The nearest open space to the site as mapped by the CVMSHCP is the Santa Rosa and San Jacinto Mountains Conservation Area, which occurs approximately 0.3 miles to the southwest, beyond existing developments and a golf course. In addition, there are no riparian corridors, creeks, or useful patches of steppingstone habitat (natural areas) within or connecting the site to a recognized wildlife corridor or linkage. As such, implementation of the proposed project is not expected to impact wildlife movement opportunities. Therefore, impacts to wildlife corridors or linkages are not expected to occur.

Jurisdictional Areas

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

No jurisdictional drainage and/or wetland features were observed on the project site or within the during the field investigation. Further, no blueline streams have been recorded on the project site. The nearest mapped resources to the site are (1) freshwater pond that was mapped approximately 0.18 miles to the southwest of the site that corresponds to an existing pond within the nearby golf course, and one (1) riverine resource that was mapped approximately 0.19 miles to the southwest that corresponds to swale features within the golf course. These resources occur well beyond site boundaries and are not expected to be impacted by project activities. Therefore, development of the project will not result in impacts to Corps, Regional Board, or CDFW jurisdiction and regulatory approvals will not be required.

Special-Status Biological Resources

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

The literature search identified thirty-two (32) special-status plant species, fifty-four (54) special-status wildlife species, and two (2) special-status plant community were identified as having potential to occur within the Palm Springs quadrangle. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in *Table D-1: Potentially Occurring Special-Status Biological Resources*, provided in Attachment D. Refer to Table D-1 for a determination regarding the potential occurrence of special-status plant and wildlife species within the project site.

Special-Status Plants

According to the CNDDB and CNPS, thirty-two (32) special-status plant species have been recorded in the Palm Springs quadrangle (refer to Attachment D). No special-status plants were observed on the project site during the field investigation. The project site and surrounding area have been impacted by historic agricultural activities and urban development for several decades, eliminating the natural plant communities that once occurred. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site does not have potential to support any of the special-status plant species known to occur in its vicinity and all are presumed absent.

Special-Status Wildlife

According to the CNDDB, fifty-four (54) special-status wildlife species have been reported in the Palm Springs quadrangle (refer to Attachment D). No special-status wildlife species were observed during the field investigation. The project site and surrounding area have been impacted by historic agricultural activities and urban development for several decades, eliminating the natural plant communities that once occurred. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site has a low potential to support Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), and Costa's hummingbird (*Calypte costae*), loggerhead shrike (*Lanius ludovicianus*), and black-tailed gnatcatcher (*Polioptila melanura*). It was further determined that all of the other special-status wildlife species known to occur in the vicinity of the site do not have potential to occur on-site and all are presumed absent.

None of the aforementioned special-status wildlife species are federally or state listed as threatened or endangered. The aforementioned species are only expected to forage over the project site as there are no suitable nesting opportunities. To ensure no impacts to the aforementioned species occur, a pre-construction nesting bird clearance survey shall be conducted prior to ground disturbance. With implementation of the pre-construction nesting bird clearance survey, impacts to these species will be less than significant and no mitigation will be required.

Special-Status Plant Communities

The CNDDB lists two (2) special-status plant community as being identified within the Palm Springs quadrangle: Desert Fan Palm Oasis and Southern Riparian Forest. These plant communities were not observed on-site. No CDFW special-status plant communities occur within the boundaries of the project site and, therefore, none will be impacted by project implementation.

Critical Habitat

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

The project site is not located with federally designated Critical Habitat (refer to Exhibit 6, *Critical Habitat*, in Attachment A). The nearest designated Critical Habitat to the site is located approximately 0.84 miles to the west for Peninsular bighorn sheep (*Ovis canadensis nelson*). Therefore, the loss or adverse modification of Critical Habitat will not occur as a result of the proposed project and consultation with the USFWS will not be required for implementation of the proposed project.

Coachella Valley MSHCP

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

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

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

Conclusion

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

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

Recommendations

Migratory Bird Treaty Act and Fish and Game Code Compliance

Vegetation within and surrounding the project site has the potential to provide refuge cover from predators, perching sites and favorable conditions for avian nesting that could be impacted by construction activities associated with the project. Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey should be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered “take” and is potentially punishable by fines and/or imprisonment.

If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer. The size of the no-disturbance buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

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

Sincerely,

Thomas J. McGill, Ph.D. Managing Director	Travis J. McGill Director

Attachments:

A. *Project Exhibits*
B. *Site Plan*
C. *Site Photographs*
D. *Potentially Occurring Special-Status Biological Resources*
E. *CVMSHCP Avoidance and Minimization Measures*
F. *Regulations*

Appendix C

Historical/Archaeological Resources Survey Report

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

THE RIOS PROJECT

575 North Palm Canyon Drive
Assessor's Parcel Nos. 505-322-001 to -004
City of Palm Springs, Riverside County, California

For Submittal to:

City of Palm Springs
Department of Development Services, Planning Division
3200 East Tahquitz Canyon Way
Palm Springs, CA 92262

Prepared for:

The Altum Group
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Prepared by:

CRM TECH
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Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

May 1, 2022
CRM TECH Contract No. 3825

Title:	Historical/Archaeological Resources Survey Report: The RIOS Project, 575 North Palm Canyon Drive, Assessor's Parcel Nos. 505-322-001 to -004, City of Palm Springs, Riverside County, California
Author(s):	Deirdre Encarnación, Archaeologist/Report Writer Terri Jacquemain, Historian Hunter O'Donnell, Archaeologist
Consulting Firm:	CRM TECH 1016 East Cooley Drive, Suite A/B Colton, CA 92324 (909) 824-6400
Date:	May 1, 2022
For Submittal to:	City of Palm Springs Department of Development Services, Planning Division 3200 East Tahquitz Canyon Way Palm Springs, CA 92262 (760) 323-8299
Prepared for:	Lauren Reese The Altum Group 44-600 Village Court, Suite 100 Palm Desert, CA 92260 (760) 346-4750
USGS Quadrangle:	Palm Springs, Calif., 7.5' quadrangle; Section 10, T4S R4E, San Bernardino Baseline and Meridian
Project Size:	Approximately 2.4 acres
Keywords:	Coachella Valley, Colorado Desert region; Phase I cultural resources survey; *No Impact* on "historical resources" under CEQA

MANAGEMENT SUMMARY

Between January and April 2022, at the request of the Altum Group, CRM TECH performed a cultural resources study on approximately 2.4 acres of vacant urban land in the City of Palm Springs, Riverside County, California. The subject property of the study consists of a total of four existing parcels, namely Assessor's Parcel Nos. 505-322-001 to -004, located on the northwest corner of Palm Canyon Drive and Chino Drive, in the southeast quarter of Section 10, Township 4 South Range 4 East, San Bernardino Baseline and Meridian, as depicted in the United States Geological Survey Palm Springs, California, 7.5' quadrangle.

The study is a part of the environmental review process for the proposed RIOS project, which entails the development of the property for mixed residential and retail commercial uses. The City of Palm Springs, as the lead agency for the project, required the study pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to provide the City with the necessary information and analysis to determine whether the project would cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist in the project area.

In order to identify such resources, CRM TECH initiated a historical/archaeological resources records search and a Sacred Lands File search, pursued historical background research, contacted the nearby Agua Caliente Band of Cahuilla Indians and the Los Coyotes Band of Cahuilla and Cupeño Indians, and carried out an intensive-level field survey. During the field survey, a small concrete structural foundation was noted on the property, apparently the remnants of a secondary building in a residential compound that occupied the property during the historic period.

With the removal of the principal components of the compound, this minor feature does not retain the ability to relate to any persons or events in the history of the property. Surviving out of context and with no associated artifact deposits, it showed no potential to qualify as a "historical resource," and was therefore not formally recorded during the survey. No other features or artifacts of historical or prehistoric—i.e., Native American—origin were encountered within the project boundaries during the study.

In light of the project location in close proximity to the City-designated Las Palmas Business Historic District, however, it is recommended that the project design be crafted in such a way as to ensure compatibility with nearby historic buildings that contribute to the significance and integrity of the district. If buried cultural materials are discovered during earth-moving operations associated with the proposed project, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds. Under these conditions, the present study further recommends that the proposed project may be cleared to proceed in compliance with CEQA provisions on cultural resources.

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INTRODUCTION

Between January and April 2022, at the request of the Altum Group, CRM TECH performed a cultural resources study on approximately 2.4 acres of vacant urban land in the City of Palm Springs, Riverside County, California (Fig. 1). The subject property of the study consists of a total of four existing parcels, namely Assessor's Parcel Nos. 505-322-001 to -004, located on the northwest corner of Palm Canyon Drive and Chino Drive, in the southeast quarter of Section 10, Township 4 South Range 4 East, San Bernardino Baseline and Meridian, as depicted in the United States Geological Survey (USGS) Palm Springs, California, 7.5' quadrangle (Figs. 2, 3).

The study is a part of the environmental review process for the proposed RIOS project, which entails the development of the property for mixed residential and retail commercial uses. The City of Palm Springs, as the lead agency for the project, required the study pursuant to the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of this study is to provide the City with the necessary information and analysis to determine whether the project would cause a substantial adverse change to any "historical resources," as defined by CEQA, that may exist in the project area.

In order to identify such resources, CRM TECH initiated a historical/archaeological resources records search and a Sacred Lands File search, pursued historical background research, contacted the nearby Agua Caliente Band of Cahuilla Indians and the Los Coyotes Band of Cahuilla and Cupeño Indians, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

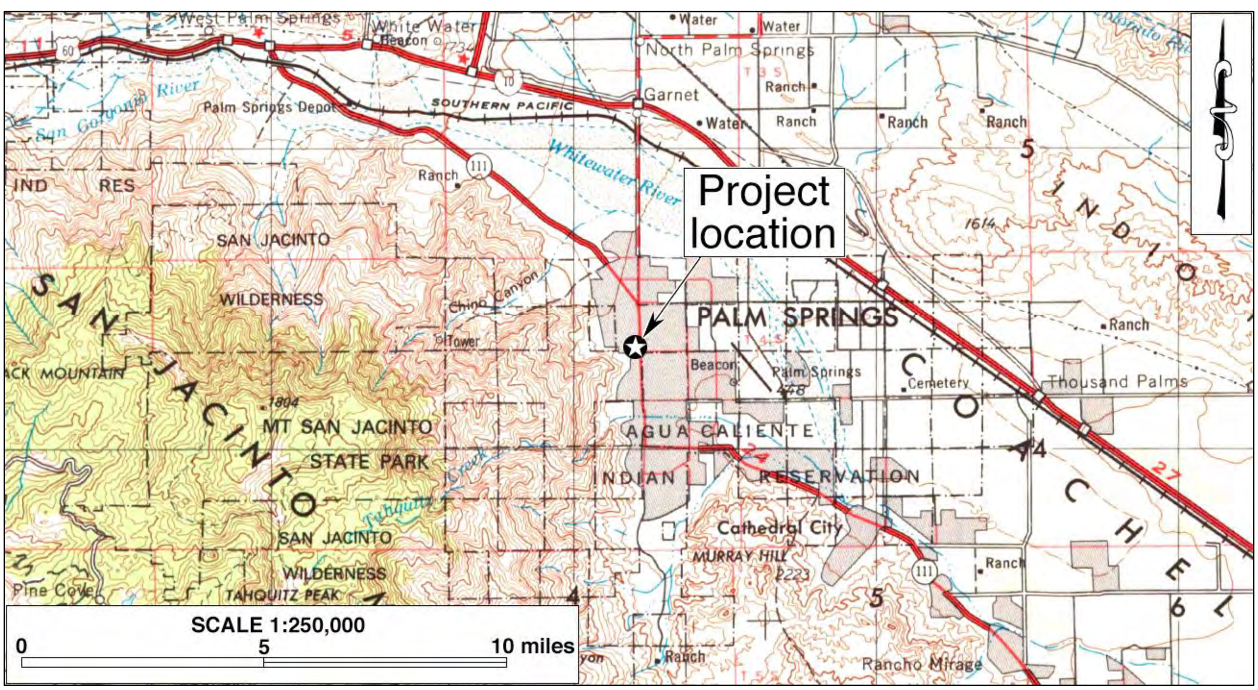

Figure 1. Project vicinity. (Based on USGS Santa Ana, Calif., 120'x60' quadrangle [USGS 1979])

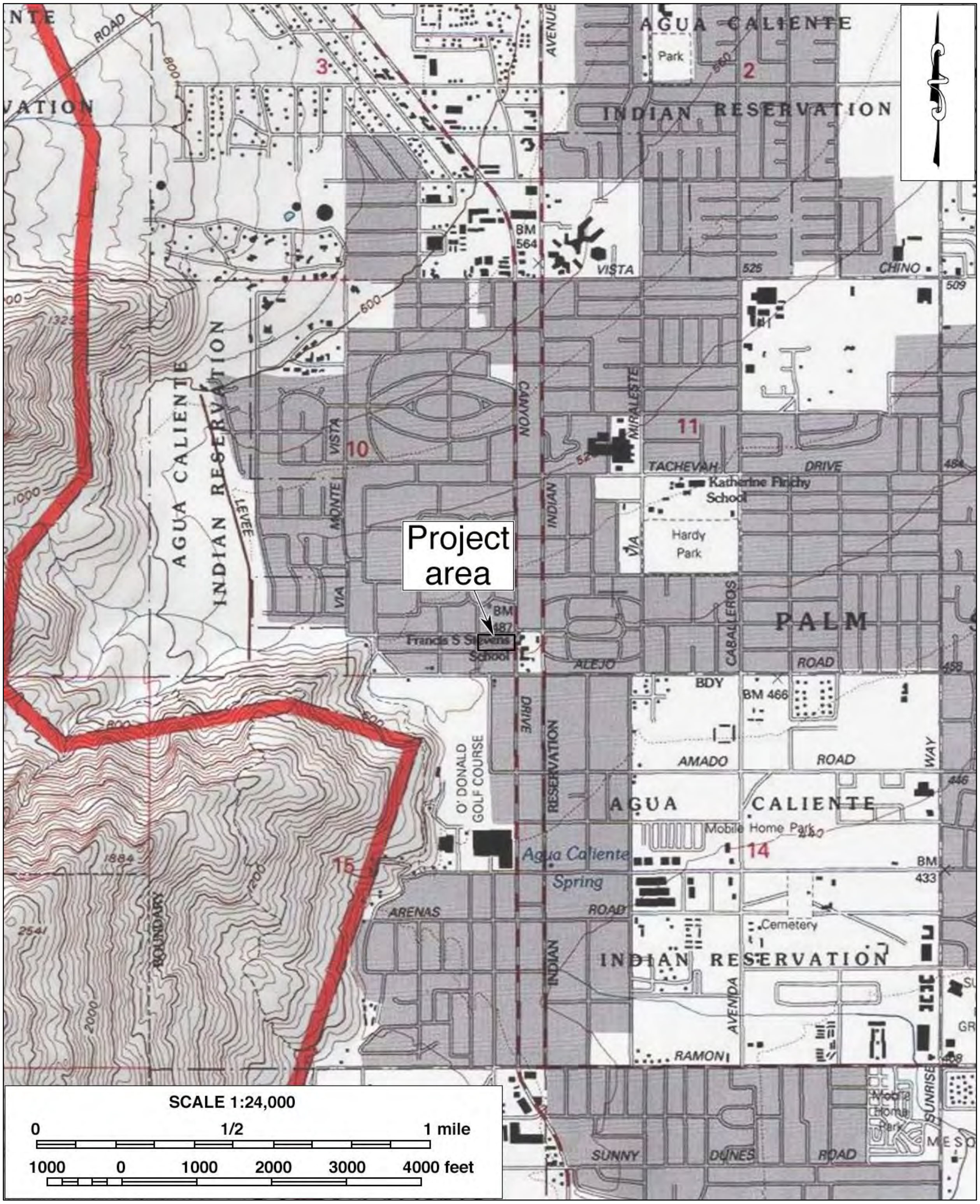

Figure 2. Project location. (Based on USGS Palm Springs, Calif., 7.5' quadrangle [USGS 1996])

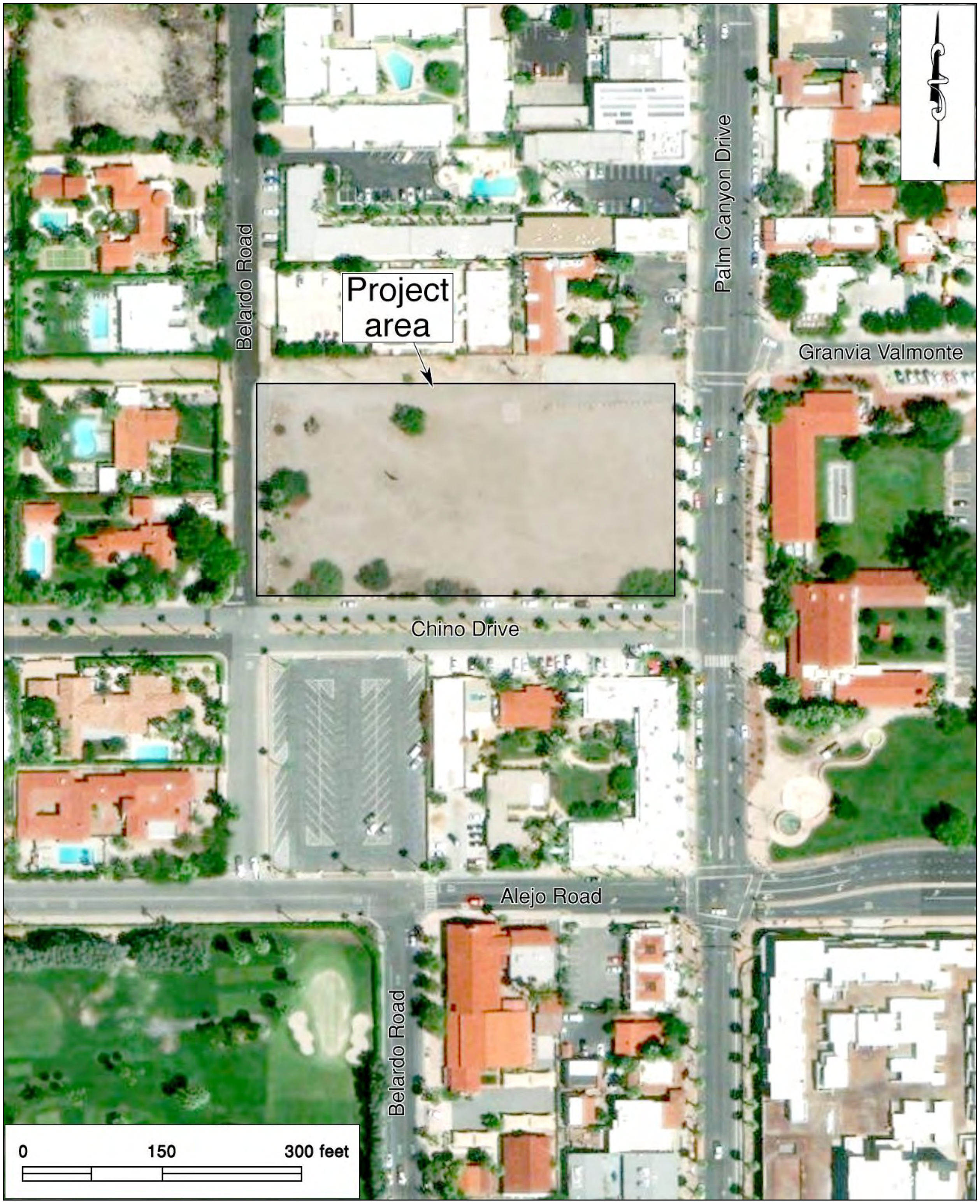

Figure 3. Aerial image of the project area.

SETTING

NATURAL SETTING

The City of Palm Springs lies near the northwestern end of the Coachella Valley, a northwest-southeast trending desert valley that constitutes the westernmost portion of the Colorado Desert. Dictated by this geographic setting, the climate and environment of the region are typical of southern California's desert country, marked by extremes in temperature and aridity. Temperatures in the region reach over 120 degrees in summer, and dip to freezing in winter. Average annual precipitation is less than five inches, and the average annual evaporation rate exceeds three feet.

Situated within Palm Springs' main commercial corridor along Palm Canyon Drive and just to the north of the "Village of Palm Springs" retail district, the rectangular-shaped project area represents a rare tract of vacant land in the city's downtown area, surrounded mostly by densely populated suburban residential neighborhoods to the west and commercial properties to the east (Figs. 3, 4). The area is entirely undeveloped today but shows clear signs of past development that has been removed, including a cracked concrete slab foundation on the property and a pair of stone pillars within the Palm Canyon Drive right-of-way just to the east.

As a result of the past development, the ground surface in the project area has been extensively disturbed, with little vestige of the native landscape evident (Fig. 4). Currently the terrain in the project area is generally level, inclining slightly to the west, and the elevations range approximately from 490 feet to 495 feet above mean sea level. The land has been largely cleared of vegetation, with only a few mesquite and palo verde trees remaining, mostly along the perimeters. Also present is some scattered growth of the common small desert grasses and shrubs, again primarily on the edges of the property.

CULTURAL SETTING

Prehistoric Context

Numerous investigations on the history of cultural development in southern California have led researchers to propose a number of cultural chronologies for the desert regions. A specific cultural sequence for the Colorado Desert was offered by Schaefer (1994) on the basis of the many archaeological studies conducted in the area. The earliest time period identified is the Paleoindian (ca. 8,000 to 10,000-12,000 years ago), when "small, mobile bands" of hunters and gatherers, who relied on a variety of small and large game animals as well as wild plants for subsistence, roamed the region (*ibid*.:63). These small groups settled "on mesas and terraces overlooking larger washes" (*ibid*.:64). Typical artifacts and features from that period include very simple stone tools, "cleared circles, rock rings, [and] some geoglyph types" (*ibid*.).

The Early Archaic Period follows and dates to ca. 8,000 to 4,000 years ago. It appears that a decrease in population density occurred at this time and that the indigenous groups of the area relied more on foraging than hunting. Very few archaeological remains have been identified to this time period. The ensuing Late Archaic Period (ca. 4,000 to 1,500 years ago) is characterized by

Figure 4. Current natural setting of the project area. (Photograph taken on March 8, 2022; view to the northeast)

continued low population densities and groups of "flexible" sizes that settled near available seasonal food resources and relied on "opportunistic" hunting of game animals. Groundstone artifacts for food processing were prominent during this time period.

The most recent period in Schaefer's scheme, the Late Prehistoric, dates from ca. 1,500 years ago to the time of the Spanish missions, and saw the continuation of the seasonal settlement pattern. Peoples of the Late Prehistoric Period were associated with the Patayan cultural pattern and relied more heavily on the availability of seasonal "wild plants and animal resources" (Schaefer 1994:66). It was during this period that brown and buff ware ceramics were introduced into the region.

The shores of Holocene Lake Cahuilla, during times of its presence, attracted much settlement and resource procurement; but in times of the lake's desiccation around 1700, according to Schaefer (1994:66), the Native people moved away from its receding shores towards rivers, streams, and mountains. Numerous archaeological sites dating to this time period have been identified along the shoreline of Holocene Lake Cahuilla. Testing and mitigative excavations at these sites have recovered brown and buff ware ceramics, a variety of groundstone and projectile point types, ornaments, and cremations.

Ethnohistoric Context

The Coachella Valley is a historical center of Native American settlement, where U.S. surveyors noted large numbers of Indian villages and *rancherías*, occupied by the Cahuilla people, in the mid-19th century. The origin of the name "Cahuilla" is unclear, but may originate from their own word *káwiya*, meaning master or boss (Bean 1978). The Takic-speaking Cahuilla are generally divided by anthropologists into three groups, according to their geographic setting: the Pass Cahuilla of the San Gorgonio Pass-Palm Springs area, the Mountain Cahuilla of the San Jacinto and Santa Rosa Mountains and the Cahuilla Valley, and the Desert Cahuilla of the eastern Coachella Valley. The basic written sources on Cahuilla culture and history include Kroeber (1925), Strong (1929), and Bean (1978), based on information provided by such Cahuilla informants as Juan Siva, Francisco Patencio, Katherine Siva Saubel, and Mariano Saubel. The following ethnohistoric discussion is based primarily on these sources.

The Cahuilla did not have a single name that referred to an all-inclusive tribal affiliation. Instead, membership was in terms of lineages or clans. Each lineage or clan belonged to one of two main divisions of the people, known as moieties. Their moieties were named for the Wildcat, or *Tuktum,* and Coyote, or *Istam*. Members of clans in one moiety had to marry into clans from the other moiety. Individual clans had villages, or central places, and territories they called their own, for purposes of hunting game, and gathering raw materials for food, medicine, ritual, or tool use. They interacted with other clans through trade, intermarriage, and ceremonies.

Cahuilla subsistence was defined by the surrounding landscape and primarily based on the hunting and gathering of wild and cultivated foods, exploiting nearly all of the resources available in a highly developed seasonal mobility system. They were adapted to the arid conditions of the desert floor, the lacustral cycles of Holocene Lake Cahuilla, and the environments of the nearby mountains. When the lake was full, or nearly full, the Cahuilla would take advantage of the resources presented by the body of fresh water, building elaborate stone fish traps. Once the lake had desiccated, they relied on the available terrestrial resources. The cooler temperatures and resources available at higher elevations in the nearby mountains were also taken advantage of.

The Cahuilla diet included seeds, roots, wild fruits and berries, acorns, wild onions, piñon nuts, and mesquite and screw beans. Medicinal plants such as creosote, California sagebrush, yerba buena and elderberry were typically cultivated near villages (Bean and Saubel 1972). Common game animals included deer, antelope, big horn sheep, rabbits, wood rats and, when Holocene Lake Cahuilla was present, fish and waterfowl. The Cahuilla hunted with throwing sticks, clubs, nets, traps, and snares, as well as bows and arrow (Bean 1978; CSRI 2002). Common tools included manos and metates, mortars and pestles, hammerstones, fire drills, awls, arrow-straighteners, and stone knives and scrapers. These lithic tools were made from locally sourced material as well as materials procured through trade or travel. They also used wood, horn, and bone spoons and stirrers; baskets for winnowing, leaching, grinding, transporting, parching, storing, and cooking; and pottery vessels for carrying water, storage, cooking, and serving food and drink (*ibid.*).

As the landscape defined their subsistence practices, the tending and cultivation practices of the Cahuilla helped shape the landscape. Biological studies have recently found evidence that the fan palms found in the Coachella Valley and throughout the southeastern California desert (*Washingtonia filifera*) may not be relics of palms from a paleo-tropical environment, but instead a relatively recent addition brought to the area and cultivated by native populations (Anderson 2005). Cahuilla oral tradition tells of a time before there were palms in the area, and how the people, birds, and animals enjoyed the palm fruit once it had arrived (Bean and Saubel 1972).

The planting of palms by the Cahuilla is well-documented, as is their enhancement of palm stands through the practice of controlled burning (Bean and Saubel 1972; Anderson 2005). Burning palm stands would increase fruit yield dramatically by eliminating pests such as the palm borer beetle, date scales, and spider mites (Bean and Saubel 1972). Firing palm stands prevented out-of-control wildfires by eliminating dead undergrowth before it accumulated to dangerous levels. The Cahuilla also burned stands of chia to produce higher yields, and deergrass to yield straighter, more abundant stalks for basketry (Bean and Saubel 1972; Anderson 2005).

Population data prior to European contact is almost impossible to obtain, but estimates range from 3,600 to as high as 10,000 persons covering a territory of over 2,400 square miles. During the 19th century, the Cahuilla population was decimated as a result of European diseases, most notably smallpox, for which the Native peoples had no immunity. There has been a resurgence of traditional ceremonies in recent years, and the language, songs, and stories are now being taught to the youngest generations. Today, Native Americans of Pass or Desert Cahuilla heritage are mostly affiliated with one or more of the Indian reservations in and around the Coachella Valley, including Agua Caliente, Morongo, Cabazon, Torres Martinez, and Augustine.

Historic Context

In 1823-1825, José Romero, José Maria Estudillo, and Romualdo Pacheco became the first noted European explorers to travel through the Coachella Valley when they led a series of expeditions in search of a route to Yuma (Johnston 1987:92-95). Due to its harsh environment, few non-Indians ventured into the desert valley during the Mexican and early American periods, except those who traveled along the established trails. The most important of these trails was the Cocomaricopa Trail, an ancient Indian trading route that was "discovered" in 1862 by William David Bradshaw and known after that as the Bradshaw Trail (Gunther 1984:71; Ross 1992:25). In much of the Coachella Valley, this historic wagon road traversed a similar course to that of present-day Highway 111. During the 1860s-1870s, the Bradshaw Trail served as the main thoroughfare between coastal southern California and the Colorado River, until the completion of the Southern Pacific Railroad in 1876-1877 brought an end to its heyday (Johnston 1987:185).

Non-Indian settlement in the Coachella Valley began in the 1870s with the establishment of railroad stations along the Southern Pacific Railroad and spread further in the 1880s after public land was opened for claims under the Homestead Act, the Desert Land Act, and other federal land laws (Laflin 1998:35-36; Robinson 1948:169-171). Farming became the dominant economic activity in the valley thanks to the development of underground water sources, often in the form of artesian wells. Around the turn of the century, the date palm was introduced into the Coachella Valley, and by the late 1910s dates were the main agricultural crop and the tree an iconic image celebrating the region as the "Arabia of America" (Shields Date Gardens 1957). Then, starting in the 1920s, a new industry featuring equestrian camps, resorts, hotels, and eventually country clubs began to spread throughout the Coachella Valley, transforming it into southern California's premier winter retreat.

The nucleus of the Coachella Valley resort industry is Palm Springs. Founded around a well-known group of hot springs and an ancient Cahuilla village, Palm Springs owes its early growth mainly to the development efforts led by John Guthrie McCallum, who began purchasing land in the area in 1872 (Gunther 1984:374). The townsite was surveyed and subdivided in 1884, initially under the name of "Palm City," but acquired its present name after a resurvey in 1887 (*ibid.*). The Palm Springs subdivision was an instant success despite its location in the heart of the southern California desert, thanks to an eight-mile-long irrigation ditch that McCallum built from the Whitewater River to the townsite.

By 1892, Welwood Murray had leased the Agua Caliente hot springs from the local Native Americans to establish a health resort (Gunther 1984:4), forecasting the future of the budding community. In the 1920s-1930s, Palm Springs was "discovered" by the rich and famous of Hollywood, and soon became a favored desert spa, the forerunner and nucleus of the Coachella Valley resort industry. In 1938, Palm Springs incorporated as a city, the 11th community to do so in Riverside County. As of the 2020 census, the city was home to a population of 44,575 residents (USCB n.d.)

RESEARCH METHODS

RECORDS SEARCH

The historical/archaeological resources records search for this study was provided by the Eastern Information Center (EIC) of the California Historical Resources Information System. Located on the campus of the University of California, Riverside, the EIC is the State of California's official repository of cultural resources records for the County of Riverside. The records search entailed primarily examination of maps and records on file for previously identified cultural resources and existing cultural resources studies in the project vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

NATIVE AMERICAN PARTICIPATION

On January 17, 2022, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. In the meantime, CRM TECH notified the nearby Agua Caliente Band of Cahuilla Indians of the upcoming archaeological field survey and invited tribal participation. Following the NAHC recommendations, the Los Coyotes Band of Cahuilla and Cupeño Indians in the Warner Springs area was also contacted in writing on March 14, 2022, for additional information on potential Native American cultural resources in the project vicinity. Correspondence between CRM TECH and the Native American representatives is summarized in the sections below, and a complete record is attached to this report in Appendix 2.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH historian Terri Jacquemain. Sources consulted during the research included published literature in local and regional history, archival records of the U.S. Bureau of Land Management (BLM) and the County of Riverside, U.S. General Land Office (GLO) land survey plat maps dated 1856-1895, USGS topographic maps dated 1901-1996, aerial/satellite photographs taken between 1953 and 2021, and various online genealogical databases, mainly those available at ancestry.com. The historical maps are accessible at the websites of the BLM and the USGS, and the aerial photographs are available from the online library of the University of California, Santa Barbara, at the Nationwide Environmental Title Research (NETR) website, and through the Google Earth software.

FIELD SURVEY

CRM TECH archaeologist Hunter O'Donnell carried out the field survey of the project area on March 8, 2022. The survey was conducted at an intensive level by walking a series of parallel east-west transects spaced 15 meters (approximately 50 feet) apart. In this way, the ground surface in the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older). Ground visibility was excellent (95-100%) throughout the project area due to the lack of any significant vegetation growth (Fig. 4).

RESULTS AND FINDINGS

RECORDS SEARCH

According to EIC records, the project area had not been surveyed for cultural resources prior to this study, and no historical/archaeological resources had been identified on the property. Within a half-mile radius of the project location, EIC files show that at least 13 previous studies were completed between 1976 and 2013, resulting in the recordation of 50 historical/archaeological sites within the scope of the records search.

One of these previously recorded sites was prehistoric—i.e., Native American—in origin, and another contained both prehistoric and historic-era elements. Site 33-000117 was recorded in 1955 as an "artifact area" containing pottery and possible house pits. The site was found a few hundred feet to the northwest of the project location, in an area that has been developed into a residential neighborhood. Recorded in 1960 and updated in 1980, Site 33-000162 consisted of the Cornelia White house, which was near the site of the Agua Caliente Cahuilla village. No artifacts were observed, but midden soil was present.

The other 48 previously recorded cultural resources all dated to the historic era and represented built-environment features such as 34 single-family residences, 3 concrete structural foundations, 11 commercial buildings and hotels, including the El Mirador Hotel and Tower that were nominated to the National Register of Historic Places in 1979. None of these previously recorded cultural resources were recorded within the immediate vicinity of the project area, and thus none requires further consideration during this study.

In addition to the cultural resources that have been recorded into the California Historical Resources Inventory, records further indicate that a historic district designated by the City of Palm Springs in 1986, known as the Las Palmas Business Historic District, is located in close proximity to the project area. The district consists of a series of buildings, mostly commercial properties, along the Palm Canyon Drive corridor, all of them constructed in the 1920s-1940s era (City of Palm Springs 2021:7). Two of them, the 1927-vintage former Frances Stevens School at 538 North Palm Canyon Drive (now the Palm Canyon Theatre) and the circa 1924 Peppertree Inn at 622 North Palm Canyon Drive (now the Alcazar Hotel), stand across Palm Canyon Drive from the project location (*ibid.*).

HISTORICAL BACKGROUND RESEARCH

Historic sources consulted for this study showed no identifiable signs of settlement and/or land development activities until the late historic period. According to maps dated 1856-1895, when the U.S government conducted the earliest official land surveys in the vicinity, the project area was situated near a nexus of several major roads and an "Indian trail" and roughly three quarters of a mile northwest of the Agua Caliente hot springs (Figs. 5-7). Despite its proximity to these notable features, no man-made features of any kind were found to be present in or adjacent to the project area through the turn of the century (Figs. 5-8). In contrast, by the 1940s-1950s, the project area was considered to have been fully urbanized as a part of the Palm Canyon Drive corridor (Figs. 9, 10).

The project area was evidently first developed by Charles Frederick Faude (1893-1992), a native of San Francisco where he registered for the World War I draft as a 23-year-old bookkeeper (ancestry.com n.d.). In 1940, at the age of 47, Faude had become the owner of an antique and art

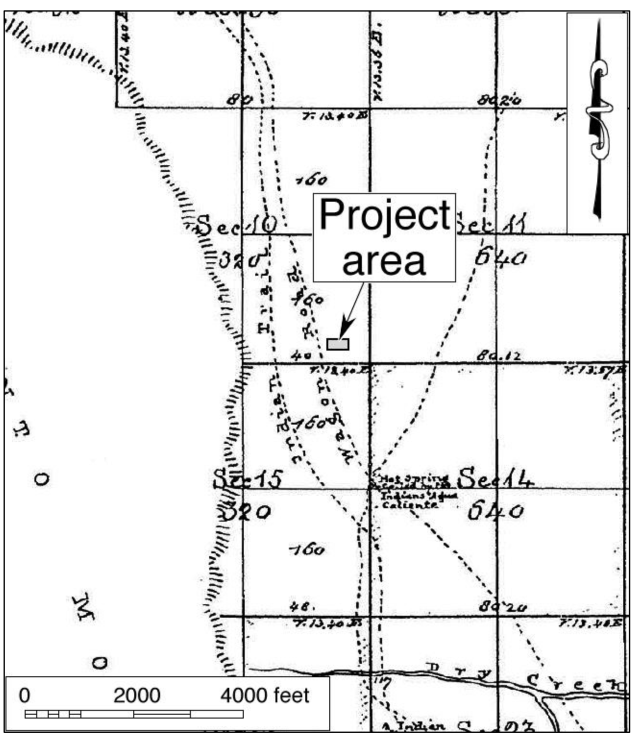

Figure 5. The project area and vicinity in 1855. (Source: GLO 1856)

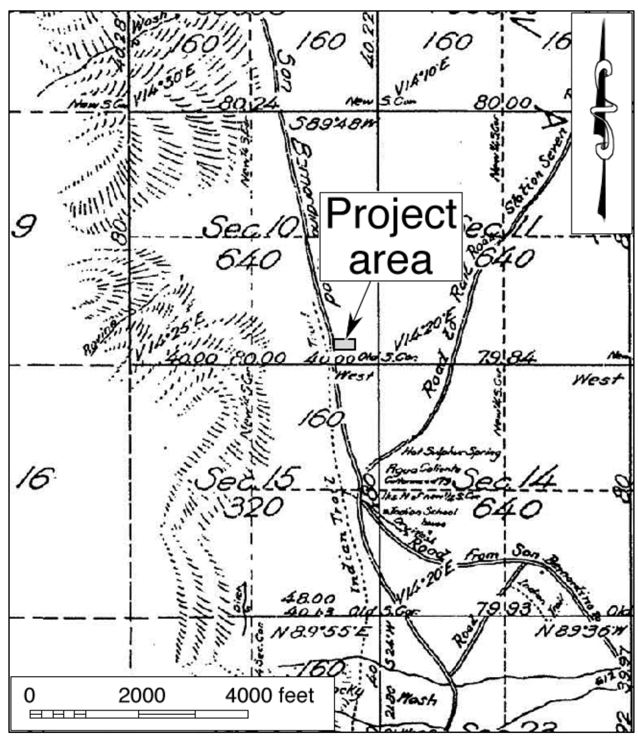

Figure 6. The project area and vicinity in 1886. (Source: GLO 1886)

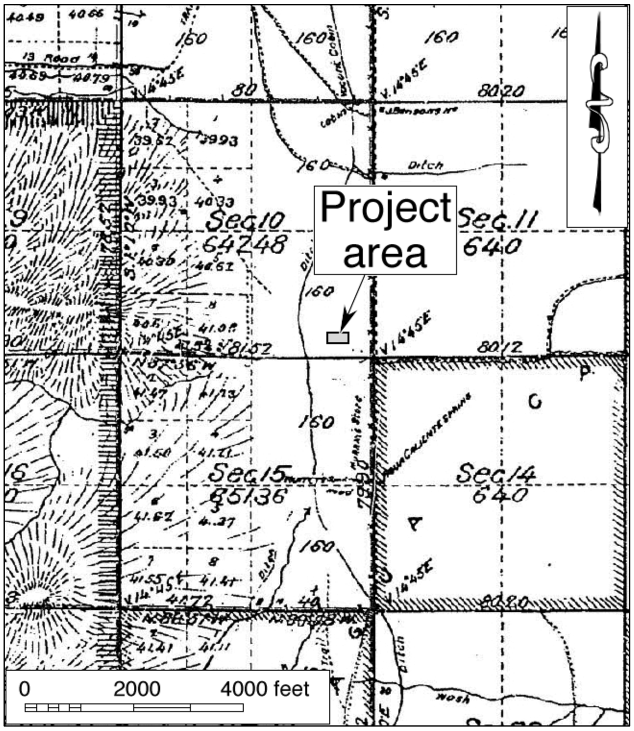

Figure 7. The project area and vicinity in 1895. (Source: GLO 1895)

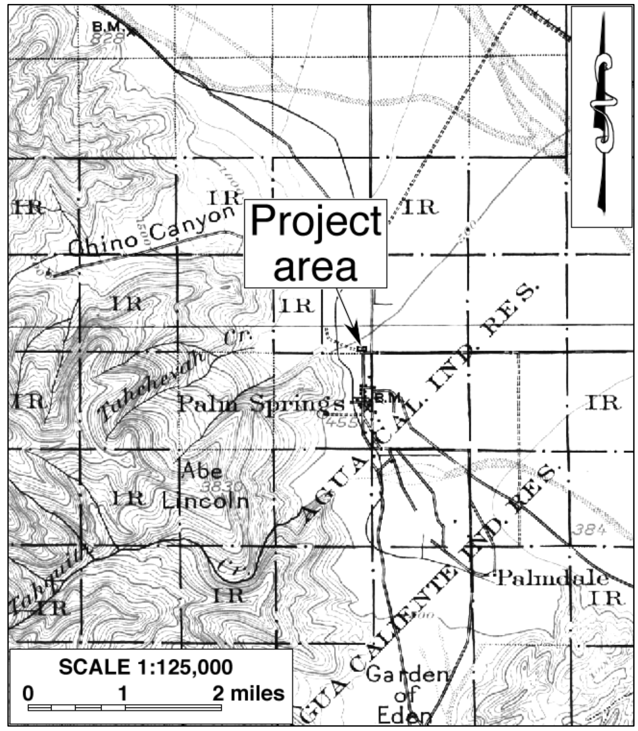

Figure 8. The project area and vicinity in 1897-1898. (Source: USGS 1901)

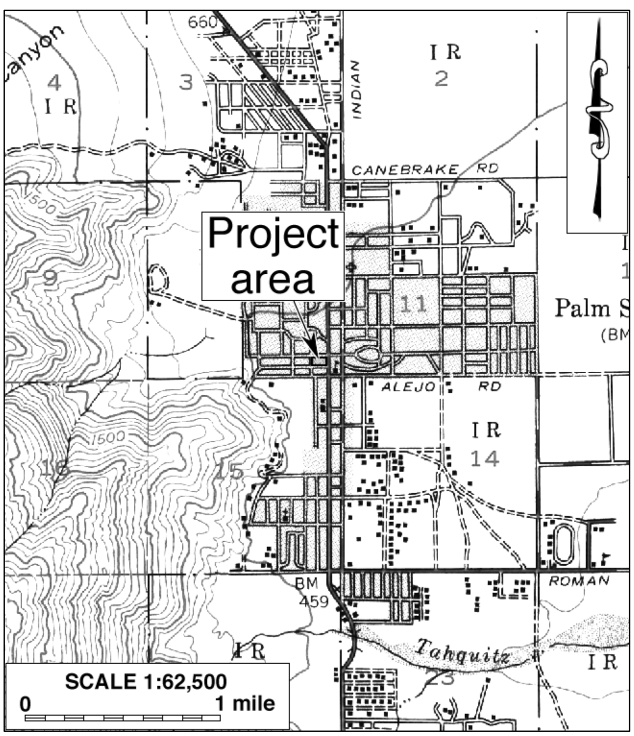

Figure 9. The project area and vicinity in 1940. (Source: USGS 1940)

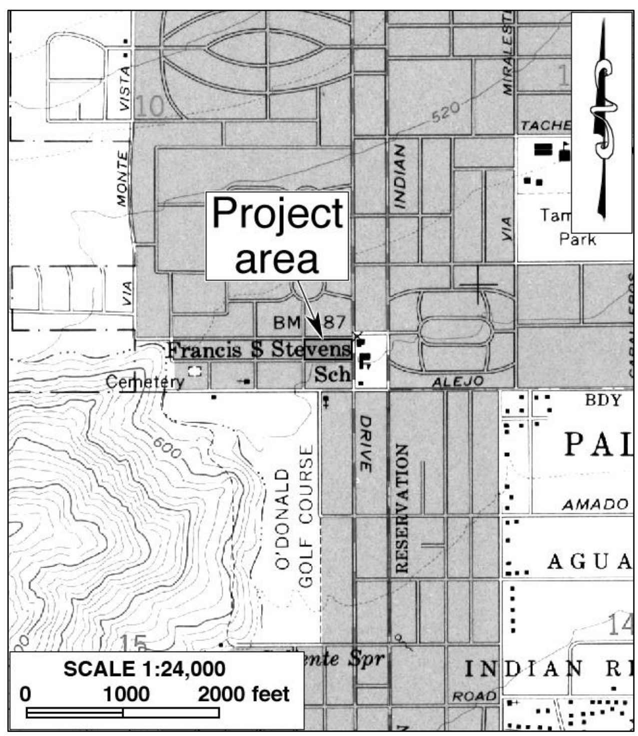

Figure 10. The project area and vicinity in 1951-1957. (Source: USGS 1957)

gallery in San Francisco, where he lived with his parents (*ibid*.). By 1946, he had moved to Palm Springs, where he lived at 575 North Palm Canyon Drive through at least 1954, although he apparently kept an antique store in Sausalito at the same time (*ibid*.). Sometime after 1954, Faude moved back to northern California where he died in 1992 (*ibid*.).

Historical aerial photographs show a residence with associated ancillary buildings and landscaping trees/shrubs in the project area by the early 1950s and through the 1970s (UCSB 1953; 1967; NETR Online 1972). Later photographs reveal that most of the buildings and all of the vegetation were removed between 1972 and 1984, with the property cleared of all buildings by 1996 (NETR Online 1984; 1996; Google Earth 1996). Since then, the project area has remained vacant with only a concrete pad marking the location of a former ancillary building (Google Earth 2002-2021; NETR Online 2002-2018).

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the NAHC reported in a letter dated March 14, 2022, that the results of the Sacred Lands File search were positive for Native American cultural resources in the project vicinity and recommended contacting the Los Coyotes Band of Cahuilla and Cupeño Indians for further information. In the meantime, the NAHC provided a list of other tribes in the region who may also have pertinent information (see App. 2). On March 14, 2022, an e-mail inquiry was sent to Chairperson Ray Chapparosa of the Los Coyotes Band (see App. 2), but no response has been received to date.

As mentioned above, prior to the field survey, CRM TECH notified the Agua Caliente Band of Cahuilla Indians and invited tribal participation (see App. 2). Despite close coordination with Andreas Heredia, Cultural Resources Coordinator for the Agua Caliente Band, in subsequent correspondence, Mr. Heredia was ultimately unable to participate in the survey on the scheduled date. In a written reply to CRM TECH's inquiry dated April 15, 2022, Lacy Padilla, Archaeologist with the Agua Caliente Tribal Historic Preservation Office, requested copies of all cultural resource documentation for tribal review as well as tribal monitoring of ground-disturbing activities during the project. In the letter, Ms. Padilla noted the presence of Séc-he, the famed Agua Caliente hot springs, near the project location (see App. 2).

FIELD SURVEY

During the field survey, the concrete structural foundation noted above was found to remain extant on the property. As discussed above, the foundation represents the remains of an ancillary building in the residential compound developed by Charles Faude in the 1940-1946 era. This concrete pad measures roughly 19x19 feet and was formed by poured concrete squares in a 5x5 configuration. The concrete is heavily fractured. Mortar remnants along the outer edge of the pad indicate that a four-walled structure once stood on the pad, likely a shed, garage, or similar outbuilding. Surviving out of context, and with no associated artifact deposits, the concrete pad showed no potential to qualify as a "historical resource" and was therefore not formally recorded during the survey.

No other remnants of the former residential compound were observed within the project boundaries, nor were any other features or artifacts more than 50 years of age observed. To the east of the

Figure 11. Concrete pad in the project area. (Photograph taken on March 8, 2022; view to the east)

concrete pad, a pair of stone pillars on the west side of Palm Canyon Drive may have once marked the entrance to the compound (Fig. 11). Like the concrete pad, they now survive in isolation. Furthermore, the site of the pillars is within the public right-of-way and outside the project boundaries.

DISCUSSION

The purpose of this study is to identify any cultural resources within the project area and to assist the City of Palm Springs in determining whether such resources meet the official definition of "historical resources," as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical

Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

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

In summary, the concrete foundation of a secondary building associated with a 1940s residential compound was noted in the project area during this study. With the removal of the principal components of the compound, however, this minor feature does not retain the ability to relate to any persons or events in the history of the property, nor have any persons or events of recognized historic significance identified in association with the property. In addition, the feature demonstrates no notable qualities in design, construction, engineering, or aesthetics and, without any associated artifact deposits, holds no promise for any important archaeological data. As such, it has no potential to qualify as a "historical resource."

No other features or artifacts of prehistoric or historical origin were encountered within the project boundaries. Based on these findings, and in light of the criteria listed above, the present study concludes that no "historical resources" exist within the project area. However, it should be noted that the project location is in close proximity to a locally designated historic district, the Las Palmas Business Historic District, with two of the contributing properties in the district located on the opposite side of Palm Canyon Drive. Consequently, the design character of the proposed new buildings in the project area, if incompatible to the historic buildings nearby, will have the potential for an indirect effect on the significance and integrity of the Las Palmas Business Historic District.

CONCLUSION AND RECOMMENDATIONS

CEQA provides that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired." As stated above, the results of the present study indicate that no "historical resources," as defined by CEQA, are present within or adjacent to the project area, but the design character of the proposed project will have the potential for an indirect effect on the nearby Las Palmas Business Historic District. Accordingly, CRM TECH presents the following recommendations to the City of Palm Springs:

- The project design should be crafted in such a way as to ensure compatibility with nearby historic buildings that contribute to the significance and integrity of the Las Palmas Business Historic District.
- If buried cultural materials are encountered during future earth-moving operations resulting from the approval of the subdivision, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.
- Under these conditions, the proposed project may be cleared to proceed in compliance with CEQA provisions on cultural resources.

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1957 Map: Palm Springs, Calif. (15’, 1:62,500); aerial photographs taken in 1951-1956, field-checked in 1955-1957.
1979 Map: Santa Ana, Calif. (120’x60’, 1:250,000); 1959 edition revised.
1996 Map: Palm Springs, Calif. (7.5’, 1:24,000); aerial photographs taken 1994.

APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, University of California, Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, University of California, Riverside.
1988-1993	Research Assistant, American Social History, University of California, Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside, California.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands, California.
1992-1998	Assistant Research Anthropologist, University of California, Riverside.
1992-1995	Project Director, Archaeological Research Unit, U.C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U.C. Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Deirdre Encarnación, M.A.

Education

2003	M.A., Anthropology, San Diego State University, California.
2000	B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
2021	Certificate of Specialization, Kumeyaay Studies, Cuyamaca College, California.
2001	Archaeological Field School, San Diego State University.
2000	Archaeological Field School, San Diego State University.

Professional Experience

2004-	Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
2001-2003	Part-time Lecturer, San Diego State University, California.
2001	Research Assistant for Dr. Lynn Gamble, San Diego State University.
2001	Archaeological Collection Catalog, SDSU Foundation.

Memberships

Society for California Archaeology; Society for Hawaiian Archaeology; California Native Plant Society; San Diego Archaeological Society.

PROJECT ARCHAEOLOGIST
Hunter C. O'Donnell, B.A.

Education

2016-	M.A. Program, Applied Archaeology, California State University, San Bernardino.
2015	B.A. (*cum laude*), Anthropology, California State University, San Bernardino.
2012	A.A., Social and Behavioral Sciences, Mt. San Antonio College, Walnut, California.
2011	A.A., Natural Sciences and Mathematics, Mt. San Antonio College, Walnut, California.
2014	Archaeological Field School, Santa Rosa Mountains; supervised by Bill Sapp of the United States Forest Service and Daniel McCarthy of the San Manuel Band of Mission Indians.

Professional Experience

2017-	Project Archaeologist, CRM TECH, Colton, California.
2016-2018	Graduate Research Assistant, Applied Archaeology, California State University, San Bernardino.
2016-2017	Cultural Intern, Cultural Department, Pechanga Band of Luiseño Indians, Temecula, California.
2015	Archaeological Intern, U.S. Bureau of Land Management, Barstow, California.
2015	Peer Research Consultant: African Archaeology, California State University, San Bernardino.

PROJECT HISTORIAN
Terri Jacquemain, M.A.

Education

2004	M.A., Public History and Historic Resource Management, University of California, Riverside.
2002	B.S., Anthropology, University of California, Riverside.
2001	Archaeological Field School, University of California, Riverside.
1991	A.A., Riverside Community College, Norco Campus.

Professional Experience

2003-	Historian/Architectural Historian/Report Writer, CRM TECH, Riverside/ Colton, California.
2002-2003	Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002	Interim Public Information Officer, Cabazon Band of Mission Indians.
2000	Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000	Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997	Reporter, *The Press-Enterprise*, Riverside, California.

Membership

California Preservation Foundation.

APPENDIX 2

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916)373-3710
(916)373-5471 (Fax)
nahc@nahc.ca.gov

Project: RIOS Mixed Use Development Project; 575 North Palm Canyon Drive; APNs 505-322-001, -002, -003, and -004 (CRM TECH No. 3825)

County: Riverside

USGS Quadrangle Name: Palm Springs, Calif.

Township 4 South **Range** 4 East SB **BM; Section(s)** 10

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: ngallardo@crmtech.us

Project Description: The primary component of the project is a mixed-use development on approximately 2.4 acres of vacant land located at the northwest corner of Palm Canyon Drive and Chino Drive (APNs 505-322-001, -002, -003, and -004), in the City of Palm Springs, Riverside County, California.

January 17, 2022

From: ngallardo@crmtech.us
Sent: Monday, January 17, 2022 3:43 PM
To: 'Padilla, Lacy (TRBL)'; Heredia, Andreas (TRBL)
Cc: 'ACBCI-THPO@aguacaliente.net'
Subject: Participation in Cultural Resources Fieldwork for the Proposed RIOS Project, 575 North Palm Canyon Drive (APNs 505-322-001, -002, -003, and -004), in the City of Palm Springs (CRM TECH #3825)

Hello,

I'm writing to inform you that CRM TECH will be conducting a cultural resources study for the for the proposed RIOS Project at 575 North Palm Canyon Drive (APNs 505-322-001, -002, -003, and -004), in the City of Palm Springs, Riverside County (CRM TECH #3825). Specifically, I am contacting you to see if the tribe would like to participate in the archaeological field survey for the project. We will contact you again when we have received the RS results from the EIC and begin to set up a specific time and date for the fieldwork. I'm attaching the project area map and other information. Please feel free to email back with any questions regarding the project and possible availability for the field survey.

Thank you for your time and input on this project.

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH
1016 E. Cooley Drive, Ste. A/B
Colton, CA 92324
(909) 824-6400

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 14, 2022

Nina Gallardo
CRM TECH

Via Email to: ngallardo@crmtech.us

Re: Proposed RIOS Project; Mixed Use Development Project, Riverside County

Dear Ms. Gallardo:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Los Coyotes Band of Cahuilla and Cupeno Indians on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological 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. Please contact all of those listed; if they cannot supply information, they may 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: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
3/14/2022

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Los Coyotes Band of Cahuilla and Cupeño Indians
Ray Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov

Morongo Band of Mission Indians
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed RIOS Project; Mixed Use Development Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
3/14/2022

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
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 — Cahuilla
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

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 Proposed RIOS Project; Mixed Use Development Project, Riverside County.

From: ngallardo@crmtech.us
Sent: Monday, March 14, 2022 2:53 PM
To: Heredia, Andreas (TRBL)
Cc: 'Padilla, Lacy (TRBL)'
Subject: Information Request for RIOS Project at 575 North Palm Canyon Drive, City of Palm Springs (CRM TECH #3825)

Hello,

I'm writing to inform you that CRM TECH has received the Native American Heritage Commission (NAHC) SLF response and NA contact list. In a letter dated March 14, 2022, the commission reports that the results of the SLF search were positive and recommends contacting the Los Coyotes Band of Cahuilla and Cupeno Indians for further information (see attached). I'm contacting you to see if the Agua Caliente Band of Cahuilla Indians has any additional information regarding the positive SLF results or any cultural sites that may be located at the project location. Please feel free to email back with any questions, comments and/or information regarding the project location.

Thanks for your time and input on this project.

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH

From: ngallardo@crmtech.us
Sent: Monday, March 14, 2022 3:05 PM
To: raycloscoyotes@gmail.com
Cc: Dorothy Willis (dwillis@loscoyotesband.org); 'epa@loscoyotesband.org'
Subject: Information Request for RIOS Project at 575 North Palm Canyon Drive, City of Palm Springs (CRM TECH #3825)

Hello,

I'm writing to inform you that CRM TECH has received the Native American Heritage Commission (NAHC) SLF response and NA contact list. In a letter dated March 14, 2022, the commission reports that the results of the SLF search were positive and recommends contacting the Los Coyotes Band of Cahuilla and Cupeno Indians for further information (see attached). I'm specifically contacting you to see if the Los Coyotes Band of Cahuilla and Cupeno Indians has any additional information regarding the positive SLF results or any cultural sites that may be located at the project location. Please feel free to email back with any questions, comments and/or information regarding the project location.

Thanks for your time and input on this project.

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-004-2022-008

April 15, 2022

[VIA EMAIL TO:ngallardo@crmtech.us]
CRM TECH
Ms. Nina Gallardo
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Information requested for the Proposed RIOS Project

Dear Ms. Nina Gallardo,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the RIOS project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*A copy of the records search with associated survey reports and site records from the information center.

*Copies of any cultural resource documentation (report and site records) generated in connection with this project.

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

*Séc-he is located near the project area.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Archaeologist
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

Appendix D

Noise Impact Analysis

RIOS PROJECT
NOISE IMPACT ANALYSIS

City of Palm Springs

March 29, 2022

ganddini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

RIOS PROJECT
NOISE IMPACT ANALYSIS

City of Palm Springs

March 29, 2022

prepared by
Roma Stromberg, INCE, MS
Catherine Howe, MS

GANDDINI GROUP INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19476

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EXECUTIVE SUMMARY

The 2.4-acre project site is located at 575 North Palm Canyon Drive in the City of Palm Springs, California. The project site is currently vacant.

The proposed project involves construction of a mixed-use development consisting of 24 condominium units and 2,214 square feet of commercial space (spa, yoga studio, gym).

Construction Impacts

Modeled unmitigated construction noise levels ranged between 55.3 and 76.1 dBA L_{eq} at the nearest sensitive receptors to the project site.

Construction noise sources are regulated within the City of Palm Springs Municipal Code Section 8.04.220 which prohibits construction other than during the hours of 7:00 AM to 7:00 PM on weekdays and 8:00 AM to 5:00 PM on Saturdays. In addition, construction work is not permitted on Sundays and holidays (incudes Thanksgiving Day, Christmas Day, New Year's Day, July 4th, Labor Day and Memorial Day). The proposed project will comply with the allowed hours of construction specified in Section 8.04.220 of the City of Palm Springs' Municipal Code.

Impacts would be less than significant, and no mitigation is required. However, the following best management practices are recommended to further reduce construction noise, emanating from the proposed project:

Suggested Best Management Practices

1. Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. Place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. As applicable, shut off all equipment when not in use.

4. Locate equipment staging in areas that create the greatest distance between construction-related noise/vibration sources and existing sensitive receptors.

5. Direct away and shield jackhammers, pneumatic equipment, and all other portable stationary noise sources from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks. Entryways should be located on the northern side.

6. Amplified music and/or voice will not be allowed on the project site.

7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per Section 8.04.220 of the City of Palm Springs' Municipal Code.

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108. Project generated vehicle trips are anticipated to increase roadway noise between approximately 0.06 to 0.32 dBA CNEL. Therefore, a change in noise level would not be audible and would be considered less than significant.

Traffic Noise Impacts to the Proposed Project

The City of Palm Springs General Plan identifies exterior noise levels up to 65 dBA CNEL as normally acceptable and up to 70 dBA CNEL as conditionally acceptable for multi-family residential uses. In addition, commercial uses are considered normally acceptable with exterior noise levels up to 70 dBA CNEL and conditionally acceptable up to 77.5 dBA CNEL.

Future traffic noise levels from Palm Canyon Drive are expected to range between37 and 75 dBA CNEL at the proposed residential and retail/office units closest to N. Palm Canyon Drive. There will be ample space available between the proposed buildings where future noise levels are expected to be 65 dBA CNEL or less for outdoor recreational uses.

In order to ensure interior noise levels do not exceed 45 dBA CNEL, the project developer will ensure that all windows and sliding glass doors that are exposed to noise levels that exceed 65 dBA, as indicated on Figure 7), will have STC ratings between 26-33. The project would be consistent with the City's normally acceptable exterior noise standards for multi-family residential uses and commercial uses. Impacts to the proposed project would be less than significant.

Construction Vibration Impacts: Architectural Damage

The FTA identifies the threshold at which there is a risk to "architectural" damage to reinforced-concrete, steel or timber (no plaster) buildings as a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings as a PPV of 0.3, at non-engineered timber and masonry buildings as a PPV of 0.2 and at buildings extremely susceptible to vibration damage as a PPV of 0.1. Impacts would be significant if construction activities result in groundborne vibration of 0.2 PPV or higher at residential structures and/or a PPV of 0.3 or higher at commercial structures.

The nearest off-site structures to the project property lines include the commercial structures located approximately 32 feet to the north, 82 feet to the south, and 95 feet to the east and the residential structures located approximately 40 feet to the north, 95 feet to the west and northwest, and 127 feet to the southwest. At 32 feet, the closest off-site commercial structure, use of a vibratory roller would be expected to generate a PPV of 0.145 in/sec and a bulldozer would be expected to generate a PPV of 0.061 in/sec. In addition, at 40 feet, the closest off-site residential structure, use of a vibratory roller would be expected to generate a PPV of 0.104 in/sec and a bulldozer would be expected to generate a PPV of 0.044 in/sec. Therefore, their use on the project site would not cause architectural damage to residential or commercial structures surrounding the project site.

Damage to structures due to groundborne vibration associated with project construction is not likely. This impact would be less than significant.

Construction Vibration Impacts: Annoyance

The FTA identifies a level of 72 VdB as the level in which vibration becomes strongly perceptible to residential sensitive receptors and a level of 75 VdB as the level in which vibration becomes strongly perceptible to institutional sensitive receptors. The threshold for annoyance due to vibration (72 VdB at offsite residential sensitive uses and 75 VdB at off-site institutional sensitive uses) could theoretically be exceeded at existing residential receptors to the north, west, northwest, and southwest; commercial receptors to the south (rehabilitation center); and institutional uses to the east (art gallery) of the project site, and residents may be temporarily annoyed. However, the impact would only occur during daytime hours and will be temporary. The impact would be less than significant. No mitigation is required.

1. INTRODUCTION

This section describes the purpose of this noise impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed Canyon Ranch project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Palm Springs.

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise analysis.

PROJECT LOCATION

The 2.4-acre project site is located at 575 North Palm Canyon Drive in the City of Palm Springs, California. The project site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a mixed-use development consisting of 24 condominium units and 2,214 square feet of commercial space (spa, yoga studio, gym). Figure 2 illustrates the proposed site plan.

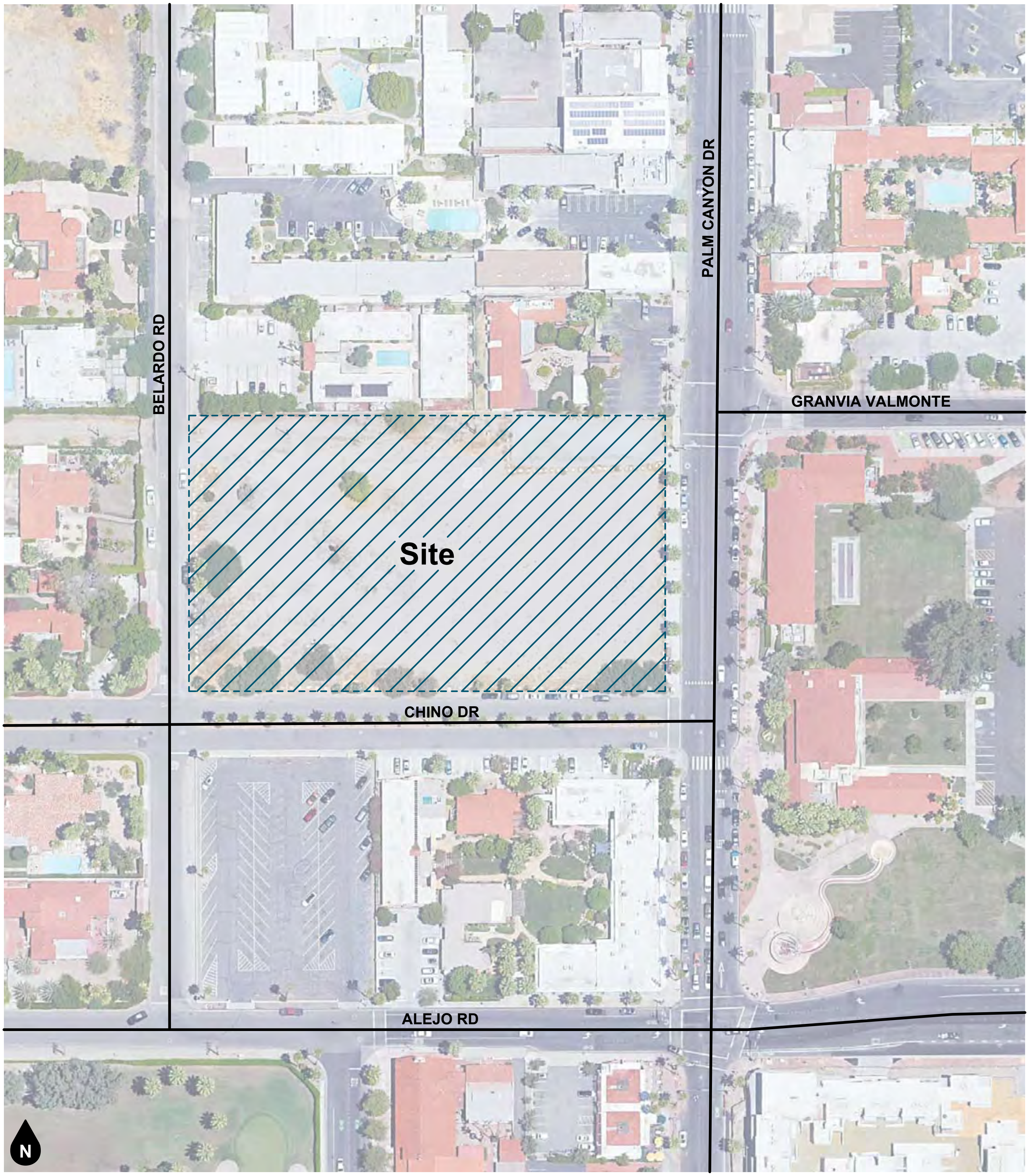


Figure 1
Project Location Map

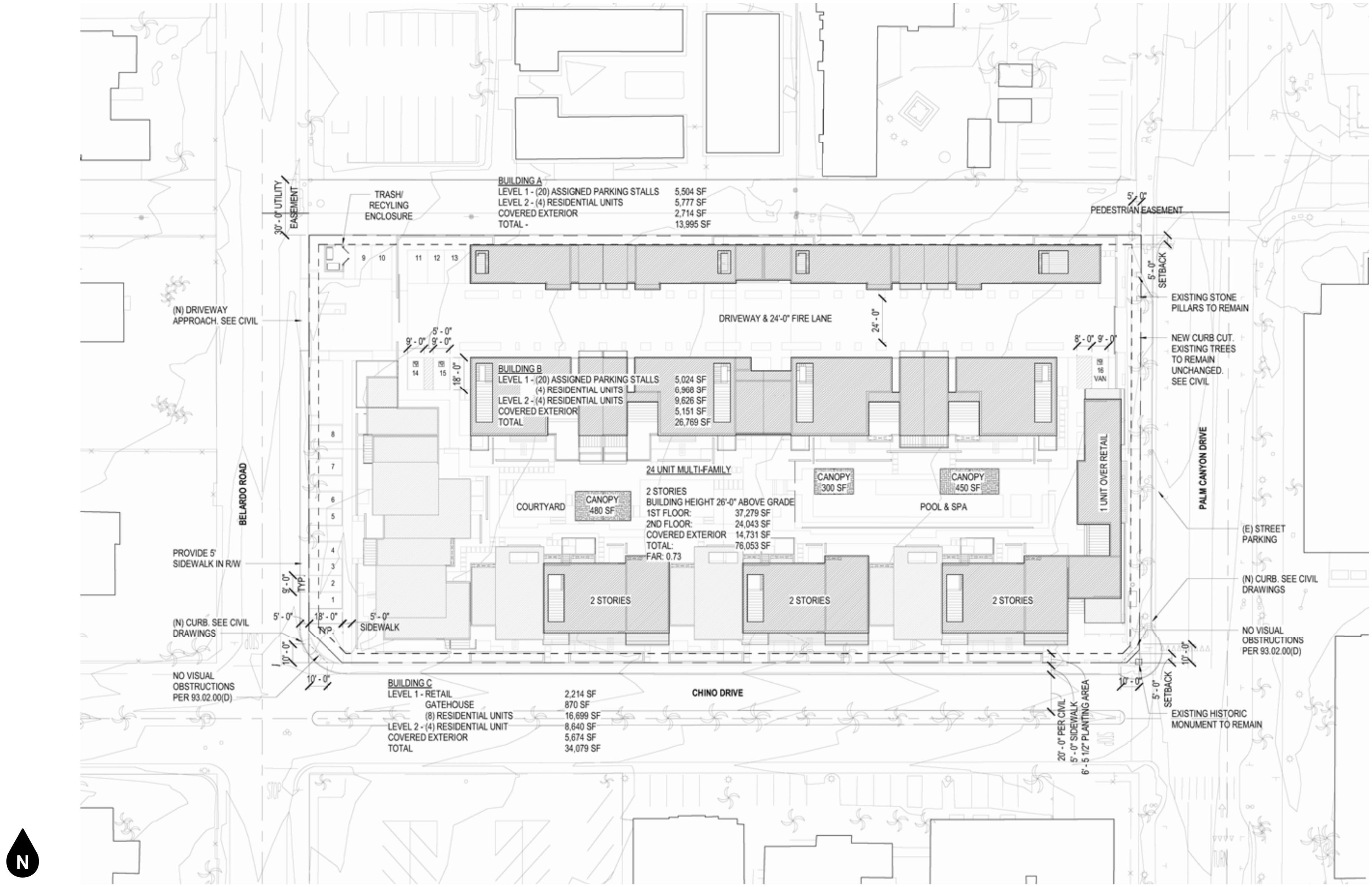


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

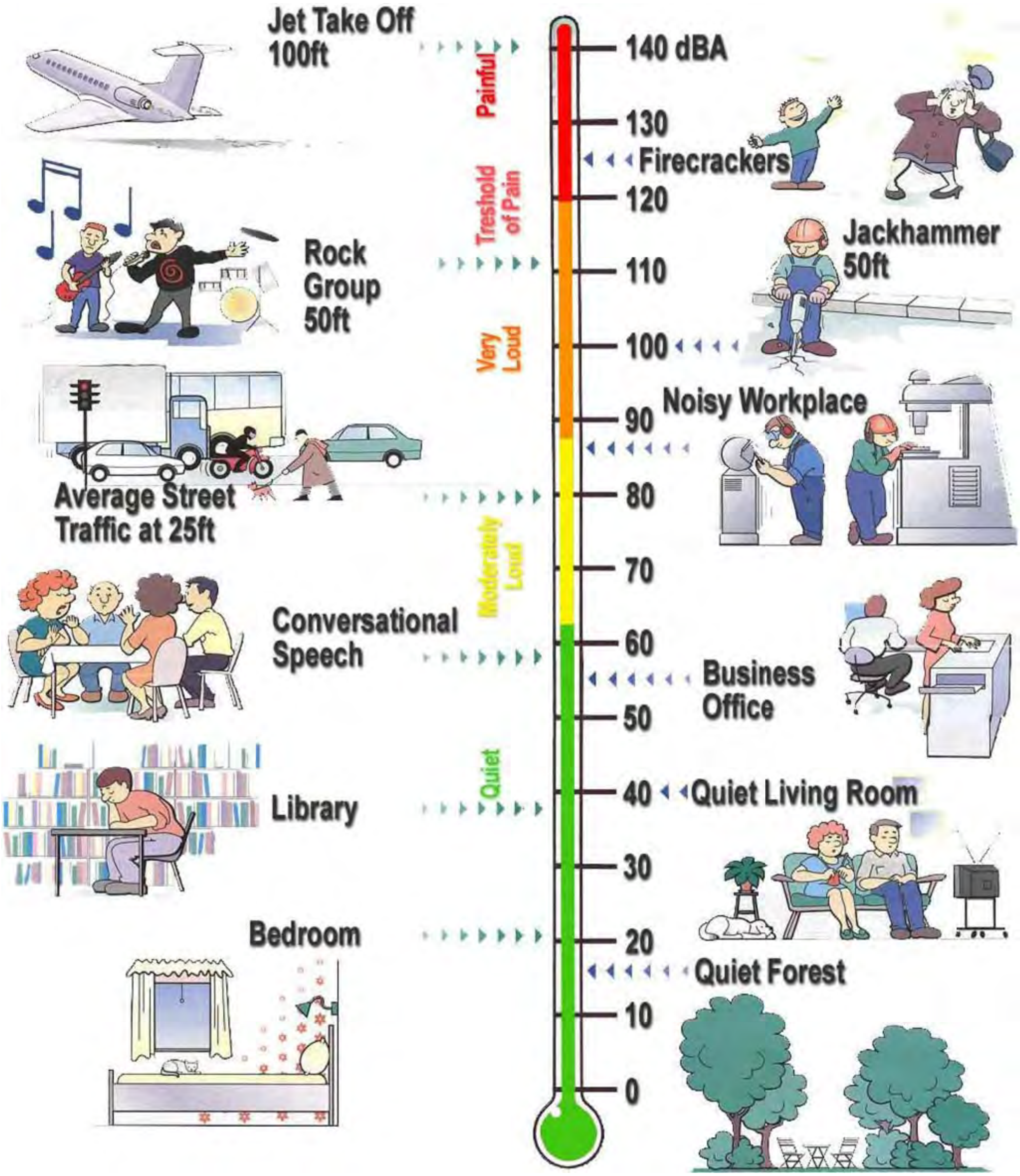
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water.

Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or “side-to-side and perpendicular to the direction of propagation”.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

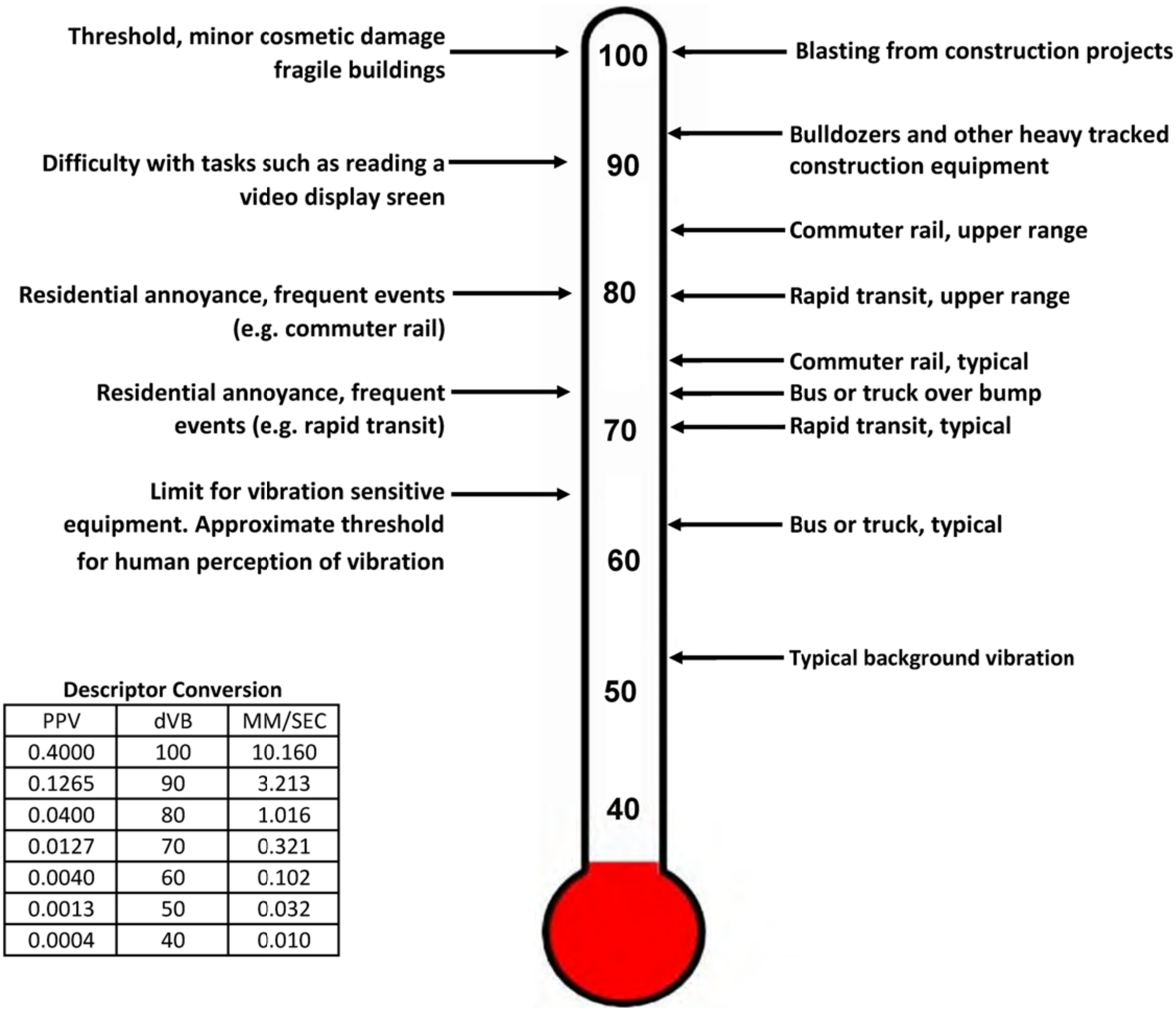
Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation “VdB” for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.



Source: Bruel & Kjaer 2001

Figure 3
Weighted Sound Levels in Common Environments



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is generally bordered by a utility easement to the north; N Palm Canyon Drive to the east; W Chino Drive to the south; and Belardo Road to the west of the project site.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the existing single-family residential uses located approximately 50 feet to the west (across Belardo Road), the multi-family residential uses located approximately 30 feet to the north (across the utility easement), the rehabilitation center use located approximately 60 feet to the south (across Chino Drive), and the transient lodging use located approximately 170 feet to the northeast of the project site (across intersection of N Palm Canyon Drive and E Granvia Valmonte) of the project site.

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section S1.4 2014 Class 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, five (5) 15-minute daytime noise measurements were taken between 11:22 AM and 2:21 PM on March 11, 2022. In addition, one (1) long-term 24-hour noise measurement was also taken from March 11, 2022 to March 12, 2022. Field worksheets and noise measurement output data are included in Appendix C.

As shown in Figure 5, the noise meter was placed at the following locations:

- STNM1: represents the existing noise environment of the multi-family residences located to the north of the project site (600 N Belardo Road, Palm Springs). The noise meter was placed just south of the wall along the southern property line of the multi-family residential uses.
- STNM2: represents the existing noise environment of the single-family residential uses to the west of the project site (224 W Chino Drive, Palm Springs). The noise meter was placed just east of the eastern single-family residential property line along the western side of Belardo Road.
- STNM3: represents the existing noise environment of the commercial and rehabilitation center uses located to the south of the project site boundary (222 W Chino Drive, Palm Springs). The noise meter was placed just south of Chino Drive near the associated commercial buildings and parking lots.
- STNM4: represents the existing noise environment of the art gallery use located to the east of the project site along the eastern side of N Palm Canyon Drive (550 N Palm Canyon Drive, Palm Springs). The noise meter was placed just east of N Palm Canyon Drive near the art gallery building.
- STNM5: represents the existing noise environment of the hotel and commercial uses located to the northeast of the project site along E Granvia Valmonte (622 N Palm Canyon Drive, Palm Springs). The noise meter was placed just north of E Granvia Valmonte along the southern property line of the hotel use.
- LTNM1: represents the existing noise environment of the project site. The noise meter was placed within the northwestern corner of the project site near to existing multi-family residential sues to the north and single-family residential uses to the east of the project site boundaries.

Table 1 provides a summary of the short-term ambient noise data. Table 2 provides hourly interval ambient noise data from the long-term noise measurement. Short-term ambient noise levels were measured between 45 and 60.7 dBA L_{eq}. Long-term hourly noise measurement ambient noise levels ranged from 41.9 to 55.1 dBA L_{eq}. The dominant noise source was vehicle traffic associated with N Palm Canyon Drive, W Chino Drive, Belardo Road, E Granvia Valmonte, and other surrounding roadways.

Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
STNM1	11:22 AM	45.0	56.4	37.6	50.5	48.0	45.4	43.8
STNM2	12:43 PM	53.7	73.2	38.6	62.7	56.9	50.6	46.9
STNM3	1:11 PM	50.0	64.8	41.2	56.6	53.5	50.3	47.6
STNM4	1:40 PM	60.7	79.2	46.0	68.6	63.3	60.3	57.6
STNM5	2:06 PM	58.5	78.7	47.6	65.0	60.8	57.0	54.8

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on March 11, 2022.

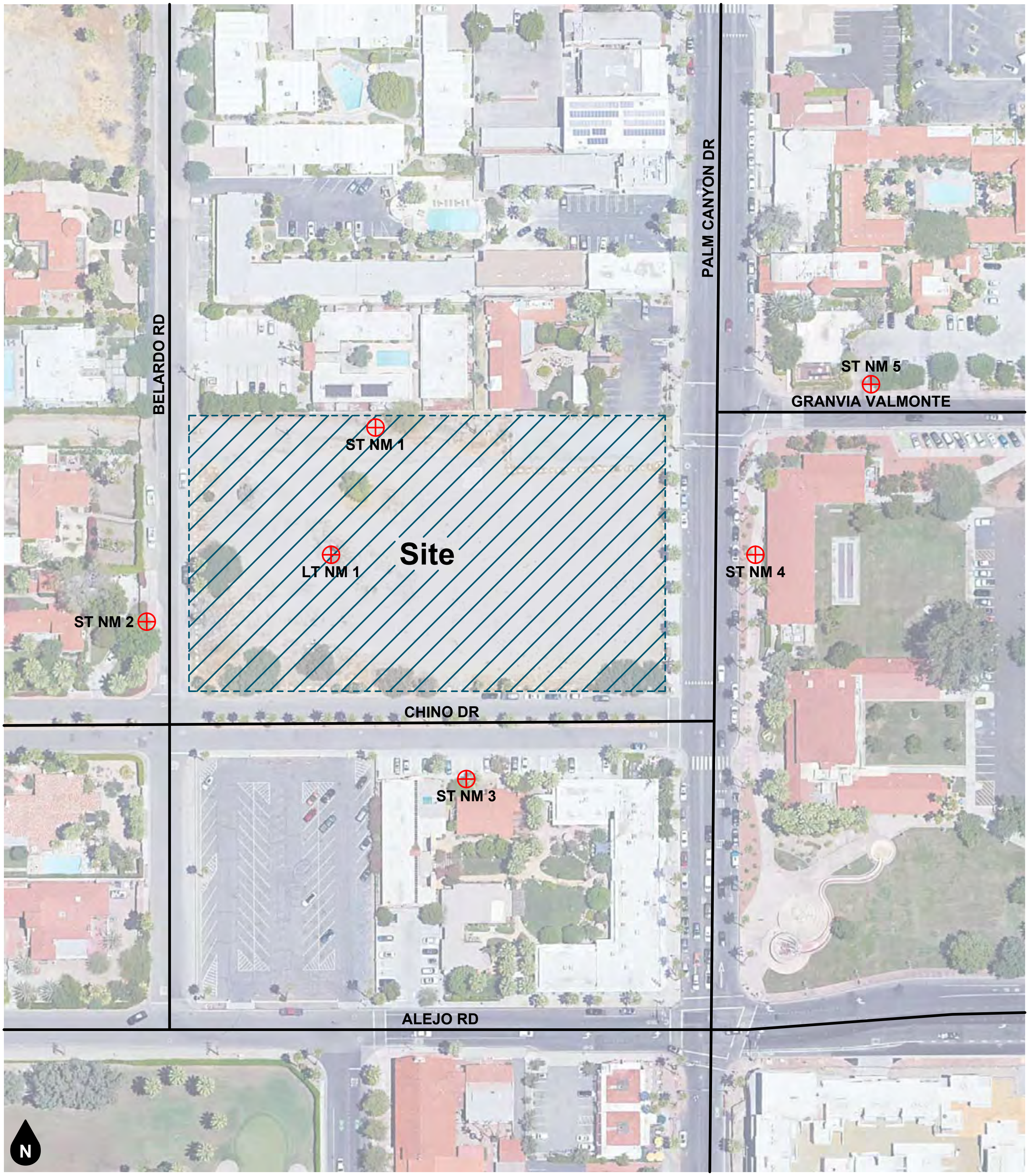
Table 2
Long-Term Noise Measurement Summary (dBA)

24-Hour Ambient Noise[1,2]								
Hourly Measurements	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
Overall Summary	4:00 PM	49.2	83.3	34.7	55.3	51.4	48.2	45.6
1	4:00 PM	48.4	67.8	38.4	54.6	51.3	48.4	46.5
2	5:00 PM	48.1	66.8	37.2	55.0	50.6	47.3	45.3
3	6:00 PM	44.7	63.8	37.4	51.9	47.7	44.2	42.3
4	7:00 PM	46.5	67.5	38.0	52.2	48.9	46.6	44.4
5	8:00 PM	53.7	76.4	42.4	60.5	54.5	50.5	48.6
6	9:00 PM	52.0	71.8	45.0	58.0	53.7	51.1	49.3
7	10:00 PM	48.7	63.4	39.8	55.5	51.4	48.9	47.1
8	11:00 PM	55.1	83.3	39.1	62.7	53.0	49.7	47.3
9	12:00 AM	47.0	64.3	37.6	53.6	49.8	46.9	44.8
10	1:00 AM	47.6	69.1	38.0	53.9	49.8	46.9	44.6
11	2:00 AM	46.2	66.2	34.7	54.2	49.2	44.7	41.6
12	3:00 AM	41.9	53.9	34.7	48.9	45.7	41.9	39.8
13	4:00 AM	44.1	59.1	36.7	51.0	47.1	43.9	41.9
14	5:00 AM	47.8	64.3	36.9	53.5	50.9	48.6	46.2
15	6:00 AM	50.7	71.1	41.8	55.5	53.3	51.0	48.7
16	7:00 AM	50.1	67.6	39.7	57.0	52.9	50.1	48.1
17	8:00 AM	47.0	61.3	37.5	54.1	50.0	47.2	45.0
18	9:00 AM	50.0	76.1	36.8	56.2	51.1	46.8	44.3
19	10:00 AM	46.7	62.5	37.3	53.1	50.1	46.9	44.6
20	11:00 AM	48.4	65.9	39.1	56.3	51.7	48.0	45.6
21	12:00 PM	47.7	67.6	38.8	54.9	50.1	46.6	44.4
22	1:00 PM	48.1	67.8	39.5	55.7	51.5	47.6	45.1
23	2:00 PM	48.6	69.3	39.9	54.5	51.7	48.3	46.1
24	3:00 PM	48.1	65.5	39.2	54.8	51.4	48.1	45.9

Notes:

(1) See Figure 5 for noise measurement locations. Noise measurement was performed over a 24-hour duration.

(2) Noise measurement performed from March 11, 2022 to March 12, 2022.



Legend

Noise Measurement Location

NM 1

ST NM Short-Term Noise Measurement

LT NM Long-Term Noise Measurement

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Palm Springs has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 3).

California Code of Regulations

California Code, Chapter 12, Section 1206.4 Allowable Interior Noise Levels, states that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (Ldn) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

California, State of, Building Code 5.507.4.1, Exterior noise transmission, requires wall and roof-ceiling assemblies that are exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 when located within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source.

The 2019 California Green Building Standards, Section 5.507.4.3 Interior sound transmission, require wall and floorceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

LOCAL REGULATIONS

City of Palm Springs General Plan

The City of Palm Springs has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 3).

Applicable policies and standards governing environmental noise in the City are set forth in the General Plan Noise Element. Those applicable to the proposed project are presented below:

Goal NS1 Protect residential areas and other sensitive land uses from impacts generated by exposure to excessive noise.

Policy NS1.1 Continue to enforce acceptable noise standards consistent with health and quality of life goals established by the City and employ noise abatement measures, including the noise ordinance, applicable building codes, and subdivision and zoning regulations.

Policy NS1.2 Encourage the application of site planning and architectural design techniques that reduce noise impacts on proposed and existing projects.

Policy NS1.3 Utilize maximum anticipated, or "worst case," noise conditions as the basis for land use decisions and design controls as a means of preventing future incompatibilities.

Policy NS1.4 Evaluate the compatibility of proposed land uses with the existing noise environment when preparing, revising, or reviewing development proposals.

Policy NS1.5 Protect noise-sensitive land uses such as schools, hospitals, and convalescent homes from unacceptable noise levels from both existing and future noise sources.

Policy N-1.6 Require mitigation where sensitive uses are to be placed along transportation routes to ensure compliance with state noise standards.

Policy N-1.7 Allow new developments in areas exposed to noise levels greater than 60 dB CNEL only if appropriate mitigation measures are included such that applicable noise standards are met.

Policy N-1.8 Include measures within project design that will assure that adequate interior noise levels are attained as required by the California Building Standards Code (Title 24), California Noise Insulation Standards (Title 25) and pertinent sections of the California Building Code and the City's Municipal Code.

Policy N-1.10 Minimize noise spillover from commercial uses into adjacent residential neighborhoods.

Goal NS2 Minimize, to the greatest extent possible, the impact of transportation related noise on residential areas and other sensitive land uses.

Policy NS2.1 Require noise-attenuating project design or sound barriers to reduce the level of traffic-generated noise on residential and other noise sensitive land uses to acceptable levels.

Policy NS2.4 Require that new development minimize the noise impacts of trips it generates on residential neighborhoods by locating driveways and parking away from the habitable portions of dwellings to the greatest extent possible.

Policy NS2.5 Require that development generating increased traffic and subsequent increases in the ambient noise levels adjacent to noisesensitive land uses provide appropriate mitigation to reduce the impact of noise.

Policy NS2.17 Restrict early-morning trash pickup to less-sensitive land use areas where possible and rotate early morning pickup areas where restrictions are not possible.

Policy NS2.24 Maximum compatibility between aircraft operations at Palm Springs International Airport and noise-sensitive land uses within the environs of the airport shall be achieved through compliance with the Noise Compatibility Plan of the FAR Part 150 Noise Compatibility Study.

Goal NS3 Minimize, to the greatest extent possible, the impact of non-transportation-related stationary and temporary noise on residential areas and other sensitive land uses.

Policy NS3.1 Require that automobile and truck access to commercial properties—including loading and trash areas—located adjacent to residential parcels be located at the maximum practical distance from the residential parcel.

Policy NS3.2 Require that parking for commercial uses adjacent to residential areas be enclosed within a structure or separated by a solid wall with quality landscaping as a visual buffer.

Policy NS3.3 Require that parking lots and structures be designed to minimize noise impacts on-site and on adjacent uses, including the use of materials that mitigate sound transmissions and configuration of interior spaces to minimize sound amplification and transmission.

Policy NS3.4 Minimize, to the greatest extent possible, noise impacts on adjacent residential areas from live entertainment, amplified music, or other noise associated with nearby commercial or restaurant uses.

Policy NS3.9 Encourage commercial uses that abut residential properties to employ techniques to mitigate noise impacts from truck deliveries, such as the use of a sound wall or enclosure of the delivery area.

Policy NS3.10 Require that construction activities that impact adjacent residential units comply with the hours of operation and noise levels identified in the City Noise Ordinance.

Policy NS3.11 Require that construction activities incorporate feasible and practical techniques which minimize the noise impacts on adjacent uses, such as the use of mufflers and intake silencers no less effective than originally equipped.

Policy NS3.12 Encourage the use of portable noise barriers for heavy equipment operations performed within 100 feet of existing residences, or make applicants provide evidence as to why the use of such barriers is infeasible.

City of Palm Springs Municipal Code

Section 11.74.031 Noise Level Limit

The noise level or sound level referred to in this section shall mean the higher of the following:

1. Actual measured ambient noise level; or
2. That noise level limit as determined in Table 4.

If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus five dB shall apply.

Section 11.74.032 Time Duration Correction Table

The time duration allowances set forth in the Table 5 shall apply to those noise level limits set forth in Section 11.74.031 during the daytime hours. The provisions of this section shall not apply to construction equipment used in connection with emergency work.

Section 11.74.034 Maximum Permissible Sound Levels by Receiving Land Use

1. The noise standards for the various categories of land use identified in Section 11.74.031 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

2. No person shall operate or cause to be operated any source of sound at any location which causes the noise level, when measured on any other property, to exceed the limits set forth in Sections 11.74.031 and 11.74.032.

3. If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus five dB, shall apply.

Section 11.74.035 Maximum Permissible Dwelling Interior Sound Levels

1. The interior noise standards for multifamily residential dwellings as presented in Table 6 shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their open position.

2. No person shall operate or cause to be operated within a dwelling unit, any source of sound or allow the creation of any noise which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed:

    a. The noise standard as specified in subsection (1) of this section for a cumulative period of more than five minutes in any hour; or

    b. The noise standard plus five dB for a cumulative period of more than one minute in any hour; or

c. The noise standard plus the ten dB or the maximum measured ambient for any period of time.

d. If the measured ambient noise level differs from that permissible within any of the allowable interior noise level categories above, the allowable interior noise level shall be adjusted in five-dB increments in each category as appropriate to reflect the measured ambient noise level.

Section 11.74.042 Construction

a. It shall be unlawful for any person to operate, permit, use or cause to operate, any of the following between the hours of 8:00 PM to 8:00 AM in residential zones and between the hours of 8:00 PM to 7:00 AM in all other zones:

2. Loading and unloading vehicles such as trash collectors, fork lifts, or cranes within one thousand feet of a residence;

4. Non-emergency exterior hardscape and landscape activities, including without limitation tree trimming, re-seeding, lawn mowing, leaf blowing, dust and debris clearing, and any other landscaping or nonemergency exterior hardscape maintenance activities which would utilize any motorized saw, sander, drill, grinder, leaf-blower, lawn mower, hedge trimmer, edger, or any other similar tool or device.

Section 11.74.043 Lound, Unusual Noises

The following acts, among others, are declared to be loud, disturbing, and unnecessary noises in violation of this section, but said enumeration shall not be deemed to be exclusive:

j. *Vibration.* Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or one hundred fifty feet from the source if on a public space or public right-of-way, is unlawful.

Section 11.74.042 Construction

It shall be unlawful for any person within the city to operate construction tools or equipment in the performance of any outside construction or repair work on buildings, structures, or projects except in accordance with Section 8.04.220, of the City's Municipal Code (below).

Section 8.04.220 Limitation of Hours of Construction

a) No person shall be engaged or employed nor shall any person cause any other person to be engaged or employed in any work of construction, erection, alteration, repair, addition to, or improvement of any realty, building or structure, except during the hours of 7:00 AM to 7:00 PM on weekdays and 8:00 AM to 5:00 PM on Saturdays, if the noise or other sound produced by such work is of such intensity or quality that it disturbs the peace and quiet of any other person of normal sensitivity. Construction work is not permitted on Sundays and holidays (incudes Thanksgiving Day, Christmas Day, New Year's Day, July 4th, Labor Day and Memorial Day). For new construction, the permitted hours of construction shall be conspicuously posted on site.

b) Any person doing or causing work prohibited by subsection (a) of this section, after being informed orally or in writing that such work has caused noise or sounds which disturb any other person's peace and quiet, shall immediately cease such work and shall thereafter perform such work only within the times permitted in subsection (a) of this section.

Exceptions:

1) Emergency repair of existing installations, equipment, or appliances;

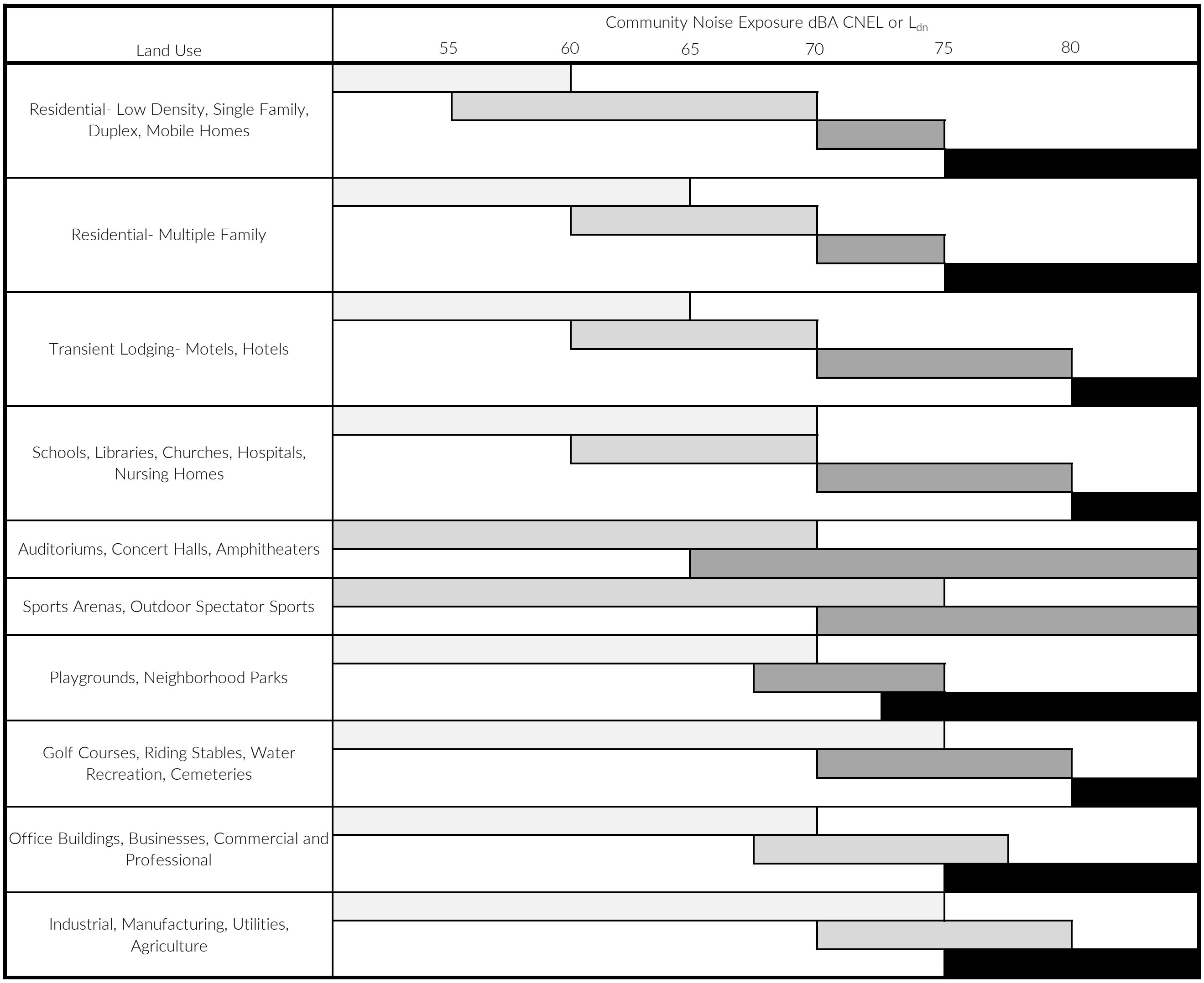
2) Construction work complying with the terms of a written early work permit which may be issued by the building official upon a showing of sufficient need due to circumstances of an unusual or compelling nature;

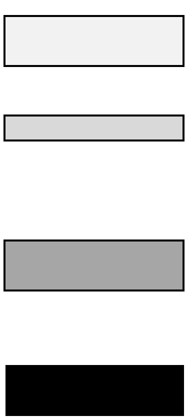
3) Work being conducted in the public right-of-way under the authority of the engineering department shall be allowed on a daily basis between 7:00 AM and 3:30 PM except weekends and holidays unless otherwise approved by the city engineer;

4) Public service-related maintenance work including, but not limited to, street and sidewalk maintenance and cleaning, public golf course maintenance and public park maintenance;

5) Activities conducted as part of the implementation of an approved fugitive dust control program.

Table 3
City of Palm Springs Community Noise Exposure Level Ldn or CNEL, dBA





Normally Acceptable:	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable:	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.
Normally Unacceptable:	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.
Clearly Unacceptable:	New construction or development should generally not be undertaken. Construction costs to make th eindoor environment acceptable would be prohibitve and the outdoor environment would not be usable.

Source: City of Palm Springs General Plan Noise Element Figure 8-2, 2007.

Table 4
City of Palm Springs Noise Level Limits

Zone	Time	Sound Level (A-weighted) Decibels
Residential Low Density	7:00 AM to 6:00 PM	50
	6:00 PM to 10:00 PM	45
	10:00 PM to 7:00 AM	40
Residential High Density	7:00 AM to 6:00 PM	60
	6:00 PM to 10:00 PM	55
	10:00 PM to 7:00 AM	50
Commercial	7:00 AM to 6:00 PM	60
	6:00 PM to 10:00 PM	55
	10:00 PM to 7:00 AM	50
Industrial	7:00 AM to 6:00 PM	70
	6:00 PM to 10:00 PM	60
	10:00 PM to 7:00 AM	55

Source: City of Palm Springs Municipal Code Section 11.74.031(2).

Table 5
City of Palm Springs Time Duration Correction Table

Duration of Sound	dB(A) Allowance
Up to 30 minutes per hour	+ 3
Up to 15 minutes per hour	+ 6
Up to 10 minutes per hour	+ 8
Up to 5 minutes per hour	+ 11
Up to 2 minutes per hour	+ 15
Up to 1 minutes per hour	+ 18
Up to 30 seconds per hour	+ 21
Up to 15 seconds per hour	+ 24

Source: City of Palm Springs Municipal Code Section 11.74.032.

Table 6
City of Palm Springs Time Duration Correction Table

Land Use	Time Interval	Allowable Interior Noise Level (dBA)
Multifamily Residential	10:00 PM to 7:00 AM	35
	7:00 AM to 10:00 PM	45

Source: City of Palm Springs Municipal Code Section 11.74.035(1).

Table 7
Construction Vibration Damage Criteria

Building/Structural Category	PPV, in/sec	Approximate Lv*
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extemely susceptible to vibration damage	0.1	90

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).

*RMS velocity in decibels, VdB re 1 micro-in/sec

Table 8
Ground-Borne Vibration (GBV) Impact Criteria for General Vibration Assessment

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)		
	Frequent Events	Occasional Events	Events
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB*	65 VdB*	65 VdB*
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).
*This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a Detailed Vibration Analysis must be performed.

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2022). For construction noise purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Sound emission levels associated with typical construction equipment as well as typical usage factors provided in Table 9 were utilized for modeling purposes. Construction noise worksheets are provided in Appendix D.

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRAFFIC NOISE PREDICTION MODEL

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emissions Levels.[1] Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification (i.e., collector, secondary, major or arterial), the roadway active width (i.e., distance between the center of the outermost travel lanes on each side of the roadway), travel speed, truck mix (i.e., percentage of automobiles, medium trucks, and heavy trucks in the traffic volume), roadway grade and site conditions (hard or soft ground surface relating to the absorption of the ground, pavement, or landscaping). Research conducted by Caltrans identifies that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model.[2] Therefore, surfaces adjacent to all modeled roadways were assumed to have a “soft site”. Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing average daily traffic volumes for Belardo Road and Palm Canyon Drive were obtained from the City of Palm Springs General Plan Update Traffic Analysis, Table 3.2 Existing Arterial Daily Level of Service (May 25, 2007). Average daily vehicle trips associated with the proposed project were estimated from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2021) (see Appendix E). As trip distribution is unknown, to be conservative, it was assumed 100 percent of project trips would travel on both Belardo Road and Palm Canyon Drive. Vehicle/truck mixes and D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling[3]. Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

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[1] California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.

[2] California Department of Transportation. Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report. June 1995. FHWA/CA/TL-95/23.

[3] Riverside, County Department of Public Health, Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, Steven Hinde, REHS, CIH, Senior Industrial Hygienist, November 23, 2009.

SOUNDPLAN NOISE MODEL

The SoundPLAN acoustical modeling software was utilized to model future roadway noise levels at the proposed sensitive receptors (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, drive-thru menus, car wash equipment, vacuums, etc.) and much more. The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. In addition to the information provided below, noise modeling data is provided in Appendix F.

Roadway parameters utilized in the noise model include location, traffic volume, speed and vehicle mix (autos, medium trucks, and heavy trucks). It is important to evaluate potential impacts of the noisiest possible future conditions. These conditions occur when the maximum number of vehicles pass at the greatest speed. This scenario usually corresponds to Level of Service C (LOS C) Conditions, or about 75% of buildout capacity. Roadways that may generate enough traffic noise under buildout conditions to affect the proposed project include Palm Canyon Drive. The City of Palm Springs General Plan Figure 4-1, Circulation Plan, identifies Palm Canyon Drive as a Major Thoroughfare (4-lane divided) roadway. Per the City of Palm Springs General Plan Update Traffic Analysis Table 4.2, the roadway capacity of Palm Canyon Drive from Tachevah Drive to Alejo Road is 35,900 vehicles per day. Therefore, Palm Canyon Drive is expected to accommodate up to approximately 26,925 vehicles per day at Level of Service C. The D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling.[4]

[4] Riverside, County Department of Public Health, Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, Steven Hinde, REHS, CIH, Senior Industrial Hygienist, November 23, 2009.

Table 9 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 9 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014
http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

6. IMPACT ANALYSIS

This impact discussion analyzes the potential for noise and/or groundborne vibration impacts to cause the exposure of a person to, or generation of, noise levels in excess of established City of Palm Springs standards related to construction, operation, and transportation noise related impacts to, or from, the proposed project.

IMPACTS RELATED TO CONSTRUCTION NOISE

The construction phases for the proposed project are anticipated to include site preparation, grading, building construction, paving and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities are anticipated to begin no sooner than the beginning of November 2022 and be completed by early May 2024.

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. The existing single-family residential uses to the west, multi-family residential uses to the north, and the transient lodging use to the northeast of the project site property lines may be affected by short-term noise impacts associated with construction noise.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 10. Worksheets for each phase are included as Appendix D.

A comparison of existing noise levels and project construction noise levels at the closest receptor locations are presented in Table 9. STNM1 was chosen to represent noise levels at the property lines of the multi-family residential uses located to the north and northwest of the project site, STNM2 was chosen to represent noise levels at the property lines of the single-family residential uses to the west and southwest of the project site, STNM3 was chosen to represent noise levels at the property line of the rehabilitation center to the south of the project site, STNM4 was chosen to represent noise levels at the property line of the art gallery use to the east of the project site, and STNM5 was chosen to represent noise levels at the property line of the hotel use to the northeast of the project site.

Modeled unmitigated construction noise levels ranged between 55.3 and 76.1 dBA L_{eq} at the nearest sensitive receptors to the project site (see Table 10). The expected duration of each phase and the loudest sound level at the nearest sensitive receptor (multi-family residential to north) is presented below:

Phase	Number of Days	Maximum Leq
Site Preparation	5	75.4
Grading	9	76.1
Building Construction	346	73.5
Paving	16	73.7
Architectural Coating	30	64.2

As discussed earlier, construction noise sources are regulated within the City of Palm Springs Municipal Code Section 8.04.220 which prohibits construction other than during the hours of 7:00 AM to 7:00 PM on weekdays and 8:00 AM to 5:00 PM on Saturdays. In addition, construction work is not permitted on Sundays and holidays (incudes Thanksgiving Day, Christmas Day, New Year's Day, July 4th, Labor Day and Memorial

Day). The proposed project will comply with the allowed hours of construction specified in Section 8.04.220 of the City of Palm Springs' Municipal Code.

Impacts would be less than significant, and no mitigation is required. However, the following best management practices are recommended to further reduce construction noise, emanating from the proposed project:

Suggested Best Management Practices

1. Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. Place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. As applicable, shut off all equipment when not in use.

4. Locate equipment staging in areas that create the greatest distance between construction-related noise/vibration sources and existing sensitive receptors.

5. Direct away and shield jackhammers, pneumatic equipment, and all other portable stationary noise sources from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks. Entryways should be located on the northern side.

6. Amplified music and/or voice will not be allowed on the project site.

7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per Section 8.04.220 of the City of Palm Springs' Municipal Code.

NOISE IMPACTS TO OFF-SITE RECEPTORS DUE TO PROJECT GENERATED TRIPS

During operation, the proposed project is expected to generate approximately 238 average weekday daily vehicle trips with 11 trips during the AM peak-hour and 20 trips during the PM peak-hour. A project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 11. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions and is demonstrated in Table 11.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 11.

As shown in Table 12, modeled Existing traffic noise levels range between 62-62 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 73-73 dBA CNEL at the right-of-way of each modeled roadway segment.

As stated previously, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if the project-related traffic would increase the CNEL at any noise-sensitive receptor by an audible amount of 3 dBA and cause the noise level at the receiving land use to exceed the noise standards detailed in the Noise Element of the Palm Springs 2007 General Plan.

Project generated vehicle trips are anticipated to increase noise levels between approximately 0.06 and 0.32 dB at the nearest sensitive receptors. Therefore, a change in noise level would be considered less than significant. No mitigation is required.

TRAFFIC NOISE IMPACTS TO THE PROPOSED PROJECT

The City of Palm Springs General Plan identifies exterior noise levels up to 65 dBA CNEL as normally acceptable and up to 70 dBA CNEL as conditionally acceptable for multi-family residential uses (see Table 3). In addition, commercial uses are considered normally acceptable with exterior noise levels up to 70 dBA CNEL and conditionally acceptable up to 77.5 dBA CNEL. According to the footnotes in Table 2, proposed land uses that fall into the "conditionally acceptable" category should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Roadway parameters utilized in the noise model include location, traffic volume, speed and vehicle mix (autos, medium trucks, and heavy trucks). It is important to evaluate potential impacts of the noisiest possible future conditions. These conditions occur when the maximum amount of vehicles pass at the greatest speed. This scenario usually corresponds to Level of Service C (LOS C) Conditions, or about 75% of buildout capacity. Roadways that may generate enough traffic noise under buildout conditions to affect the proposed project include Palm Canyon Drive. The City of Palm Springs General Plan Figure 4-1, Circulation Plan, identifies Palm Canyon Drive as a Major Thoroughfare (4-lane divided) roadway. Per the City of Palm Springs General Plan Update Traffic Analysis Table 4.2, the roadway capacity of Palm Canyon Drive from Tachevah Drive to Alejo Road is 35,900 vehicles per day. Therefore, Palm Canyon Drive is expected to accommodate up to approximately 26,925 vehicles per day at Level of Service C. The D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling.[5]

As shown on Figures 6, future traffic noise levels from Palm Canyon Drive are expected to range between37 and 75 dBA CNEL at the proposed residential and retail/office units closest to N. Palm Canyon Drive. As shown on Figure 7, there will be ample space available between the proposed buildings where future noise levels are expected to be 65 dBA CNEL or less for outdoor recreational uses.

In order to ensure interior noise levels do not exceed 45 dBA CNEL, the project developer will ensure that all windows and sliding glass doors that are exposed to noise levels that exceed 65 dBA, as indicated on Figure 7), will have STC ratings between 26-33 as shown in Table 14.

The project would be consistent with the City's normally acceptable exterior noise standards for multi-family residential uses and commercial uses. Impacts to the proposed project would be less than significant.

NOISE IMPACTS TO ON AND OFF-SITE RECEPTORS DUE TO ON-SITE OPERATIONAL NOISE

Sensitive receptors that may be affected by project operational noise include the proposed residential uses as well as the existing residential uses to the north, northwest, west, and southwest, rehabilitation center to the south, and transient lodging uses to the northeast.

[5] Riverside, County Department of Public Health, Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, Steven Hinde, REHS, CIH, Senior Industrial Hygienist, November 23, 2009.

Mixed use developments tend to have noise/land use conflicts associated with mechanical equipment, early morning delivery noise, loading and unloading of delivery vehicles, heavy truck backup beepers, and refrigeration equipment. Other noise sources may include:

- Noise from gas powered leaf blowers, especially when operated in the early morning
- Back up beepers on delivery trucks and garbage trucks
- Automobile car alarms
- Idling cars/trucks, trucks, doors closing, and starting engine noise
- Loud activities (i.e., loud music, banging, etc. associated with retail uses).
- Exterior restaurant/bar patron conversations that occur on outdoor patios.

The proposed parking area includes 42 garage residential parking spaces and 16 surface guest/retail parking lot spaces. Therefore, the majority of the parking spaces are enclosed, would reduce parking lot associated noise levels at proposed and existing residential uses.

The project will be required to comply Section 11.74.042 of the City's Municipal Code which prohibits loading and unloading of vehicles, such as trash collectors, fork lifts, or cranes, within one thousand feet of a residence and non-emergency exterior hardscape and landscape activities, including without limitation tree trimming, re-seeding, lawn mowing, leaf blowing, dust and debris clearing, and any other land-scaping or nonemergency exterior hardscape maintenance activities which would utilize any motorized saw, sander, drill, grinder, leaf-blower, lawn mower, hedge trimmer, edger, or any other similar tool or device, between the hours of 8:00 PM to 8:00 AM in residential zones and between the hours of 8:00 PM to 7:00 AM in all other zones.

Per Title 24 California Building Code the project will be constructed in compliance with the California Building Code (CBC) noise insulation standards. The following outlines the minimum building requirements for multi-family attached residential dwelling units as it relates to noise isolation for common separating assemblies:

1. Walls, partitions, and floor/ceiling assembly designs must provide a minimum STC of 50, based on lab tests. Field tested assemblies must provide a minimum noise isolation class (NIC) of 45.
2. Floor/ceiling assembly designs must provide for a minimum impact insulation class (IIC) of 50, based on lab tests. Field tested assemblies must provide a minimum FIIC of 45.
3. Penetrations or openings in sound rated assemblies must be sealed, lined, insulated, or otherwise treated to maintain required ratings.
4. Interior noise levels due to exterior sources must not exceed a community noise equivalent level (CNEL) or a day-night level (LDN) of 45 dBA, in any habitable room.

Thus, the design of party walls and floor/ceiling assemblies for multi-family attached residential dwelling units must be based on laboratory tested assemblies which test at a sound transmission class of 50 STC, or better.

On-site operational noise impacts between the proposed residential and commercial land uses would be less than significant with compliance of existing state and local building regulations. This impact would be less than significant. No mitigation is required.

Groundborne Vibration Impacts

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 14, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

Architectural Damage

Vibration generated by construction activity generally has the potential to damage structures. This damage could be structural damage, such as cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. (California Department of Transportation, 2020)

Table 7 identifies the threshold at which there is a risk to "architectural" damage to reinforced-concrete, steel or timber (no plaster) buildings as a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings as a PPV of 0.3, at non-engineered timber and masonry buildings as a PPV of 0.2 and at buildings extremely susceptible to vibration damage as a PPV of 0.1. Therefore, impacts would be significant if construction activities result in groundborne vibration of 0.2 PPV or higher at residential structures and/or a PPV of 0.3 or higher at commercial structures. Calculated project generated construction vibration levels are shown in Table 15.

The nearest off-site structures to the project property lines include the commercial structures located approximately 32 feet to the north, 82 feet to the south, and 95 feet to the east and the residential structures located approximately 40 feet to the north, 95 feet to the west and northwest, and 127 feet to the southwest. As shown in Table 15, at 32 feet, the closest off-site commercial structure, use of a vibratory roller would be expected to generate a PPV of 0.145 in/sec and a bulldozer would be expected to generate a PPV of 0.061 in/sec. In addition, at 40 feet, the closest off-site residential structure, use of a vibratory roller would be expected to generate a PPV of 0.104 in/sec and a bulldozer would be expected to generate a PPV of 0.044 in/sec. Therefore, use of either a vibratory roller or a bulldozer would not cause architectural damage to the receptors to the west and not mitigation is required.

Impacts from vibration generated damage would less than significant. Vibration worksheets are provided in Appendix G.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential. (California Department of Transportation, 2020)

As shown in Table 8, vibration becomes strongly perceptible to sensitive receptors at a level of 72 VdB and at a level of 75 VdB at daytime institutional uses. A vibratory roller could generate up to 72 VdB at a distance of 136 feet from the source and a large bulldozer could generate 72 VdB at a distance of 80 feet from the source. In addition, a vibratory roller could generate up to 75 VdB at a distance of 108 feet from the source and a large bulldozer could generate 75 VdB at a distance of 63 feet from the source. Calculated project generated construction vibration levels are shown in Table 15.

The closest buildings to the project site include commercial buildings located as close as 32 feet from the project property lines. The FTA adopted standards associated with human annoyance for groundborne vibration impacts for three land-use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. Therefore, as commercial uses are not considered a vibration-sensitive land use, no further analysis in regard to annoyance is necessary.

The closest residential buildings to the project site include the multi-family residential dwelling units located approximately 40 feet to the north and the single-family residential buildings located as close as approximately 95 feet to the west and northwest and 127 feet to the southwest of the project site property lines. Furthermore, the commercial use to the south, with buildings located as close as approximately 82 feet from the project's southern property line, is a rehabilitation center; therefore, for purposes of this analysis it was assumed to fit under Category 1 as a residential sensitive receptor. In addition, the commercial use to the east, with buildings as close as approximately 95 feet from the project's eastern property line, is an art gallery with associated classes; therefore, for purposes of this analysis, it was assumed to fit under Category 3 (see Table 8). As shown in Table 15, the threshold for annoyance due to vibration (72 VdB at offsite residential sensitive uses and 75 VdB at off-site institutional sensitive uses) could theoretically be exceeded at existing residential receptors to the north, west, northwest, and southwest and commercial uses to the east and south of the project site, and residents may be temporarily annoyed. However, the impact would only occur during daytime hours and will be temporary. The impact would be less than significant. No mitigation is required.

Table 10
Construction Noise Levels (dBA L_{eq})

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)
Site Preparation	Residential to North	45.0	75.4
	Residential to Northwest	45.0	69.2
	Residential to West	53.7	70.5
	Residential to Southwest	53.7	68.9
	Rehabilitation Center to South	50.0	74.4
	Art Gallery to East	60.7	69.6
	Hotel to Northeast	58.5	66.5
Grading	Residential to North	45.0	76.1
	Residential to Northwest	45.0	70
	Residential to West	53.7	71.3
	Residential to Southwest	53.7	69.7
	Rehabilitation Center to South	50.0	75.2
	Art Gallery to East	60.7	70.4
	Hotel to Northeast	58.5	67.2
Building Construction	Residential to North	45.0	73.5
	Residential to Northwest	45.0	67.4
	Residential to West	53.7	68.7
	Residential to Southwest	53.7	67.0
	Rehabilitation Center to South	50.0	72.6
	Art Gallery to East	60.7	67.7
	Hotel to Northeast	58.5	64.6
Paving	Residential to North	45.0	73.7
	Residential to Northwest	45.0	67.6
	Residential to West	53.7	68.9
	Residential to Southwest	53.7	67.2
	Rehabilitation Center to South	50.0	72.7
	Art Gallery to East	60.7	67.9
	Hotel to Northeast	58.5	64.8
Architectural Coating	Residential to North	45.0	64.2
	Residential to Northwest	45.0	58.1
	Residential to West	53.7	59.4
	Residential to Southwest	53.7	57.8
	Rehabilitation Center to South	50.0	63.3
	Art Gallery to East	60.7	58.5
	Hotel to Northeast	58.5	55.3

Notes:

(1) Construction noise worksheets are provided in Appendix D.

(2) Per measured existing ambient noise levels. STNM1 was chosen to represent noise levels at the property lines of the multi-family residential uses located to the north and northwest, STNM2 was chosen to represent noise levels at the property lines of the single-family residential uses to the west and southwest, STNM3 was chosen to represent noise levels at the property line of the rehabilitation center to the south, STNM4 was chosen to represent noise levels at the property line of the art gallery use to the east, and STNM5 was chosen to represent noise levels at the property line of the hotel use to the northeast of the project site.

Table 11
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing	Existing Plus Project		
Belardo Road	In vicinity of Project Site	3,100	3,338	25	Soft
Palm Canyon Drive	In vicinity of Project Site	16,600	16,838	35	Soft

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Vehicle Distribution (Heavy Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:

(1) Existing average daily traffic volumes for Belardo Road and Palm Canyon Drive were obtained from the City of Palm Springs General Plan Update Traffic Analysis, Table 3.2 Existing Arterial Daily Level of Service (May 25, 2007). Average daily vehicle trips associated with the proposed project were estimated from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2021) (see Appendix E). As trip distribution is unknown, to be conservative, it was assumed 100 percent of project trips would travel on both Belardo Road and Palm Canyon Drive.

(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 12
Change in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 5 dB or More?
Belardo Road	In vicinity of Project Site	25	62.0	62.3	0.32	Yes	No
Palm Canyon Drive	In vicinity of Project Site	55	73.2	73.2	0.06	Yes	No

Notes:

(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.

(2) Right of way per the City of Palm Springs General Plan Circulation Element, Figure 4-2 Typical Street Cross Sections.

(3) Per the City of Palm Springs normally acceptable standard for single-family detached residential dwelling units (see Table 3).

Table 13
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec

Table 14
Construction Vibration Levels at the Nearest Receptors

Receptor Location	Distance from Property Line to Nearest Structure (feet)	Equipment	Vibration Level[1]	Threshold Exceeded?[2]
Architectural Damage Analysis				
Commercial to North	32	Vibratory Roller	0.145	No
	32	Large Bulldozer	0.061	No
Multi-Family Residential to North	40	Vibratory Roller	0.104	No
	40	Large Bulldozer	0.044	No
Single-Family Residential to West & Northwest	95	Vibratory Roller	0.028	No
	95	Large Bulldozer	0.012	No
Commercial to South	82	Vibratory Roller	0.035	No
	82	Large Bulldozer	0.015	No
Commercial to East	95	Vibratory Roller	0.028	No
	95	Large Bulldozer	0.012	No
Single-Family Residential to Southwest	127	Vibratory Roller	0.018	No
	127	Large Bulldozer	0.008	No
Annoyance Analysis				
Multi-Family Residential to North	40	Vibratory Roller	88	Yes
	40	Large Bulldozer	81	Yes
Single-Family Residential to West & Northwest	95	Vibratory Roller	77	Yes
	95	Large Bulldozer	70	No
Commercial to South[3]	82	Vibratory Roller	79	Yes
	82	Large Bulldozer	72	No
Commercial to East[3]	95	Vibratory Roller	77	Yes
	95	Large Bulldozer	70	No
Single-Family Residential to Southwest	127	Vibratory Roller	73	Yes
	127	Large Bulldozer	66	No

Notes:

(1) Vibration levels are provided in PPV in/sec for architectural damage and VdB for annoyance.

(2) The FTA identifies the threshold at which there is a risk to "architectural" damage to non-engineered timber and masonry buildings as a PPV of 0.2 in/sec (see Table 5). In addition, the FTA identifies a vibration annoyance threshold of 72 VdB for residential uses and 75 VdB for daytime institutional uses (see Table 8). Per the FTA Transit Noise and VIbration Impact Assessment Manual (September 2018), commercial uses are not considered vibration-sensitive land uses; therefore, the annoyance threshold does not apply to commercial uses.

(3) The existing land uses to the south include commercial uses; however, one of the uses is a rehabilitation center. As the rehabilitation center could include residential/hospital type uses, although this is a commercial use, it was assumed to fit under FTA Category 2 (residences and buildings where people normally sleep, see Table 8) and assumed to be potentially senstive to vibration.

(4) The existing land use to the east is an art gallery that also includes art classes; therefore, although this is a commercial use, it was assumed to fit under FTA Category 3 (institutional mainly daytime uses, see Table 8) and assumed to be potentially senstive to vibration.

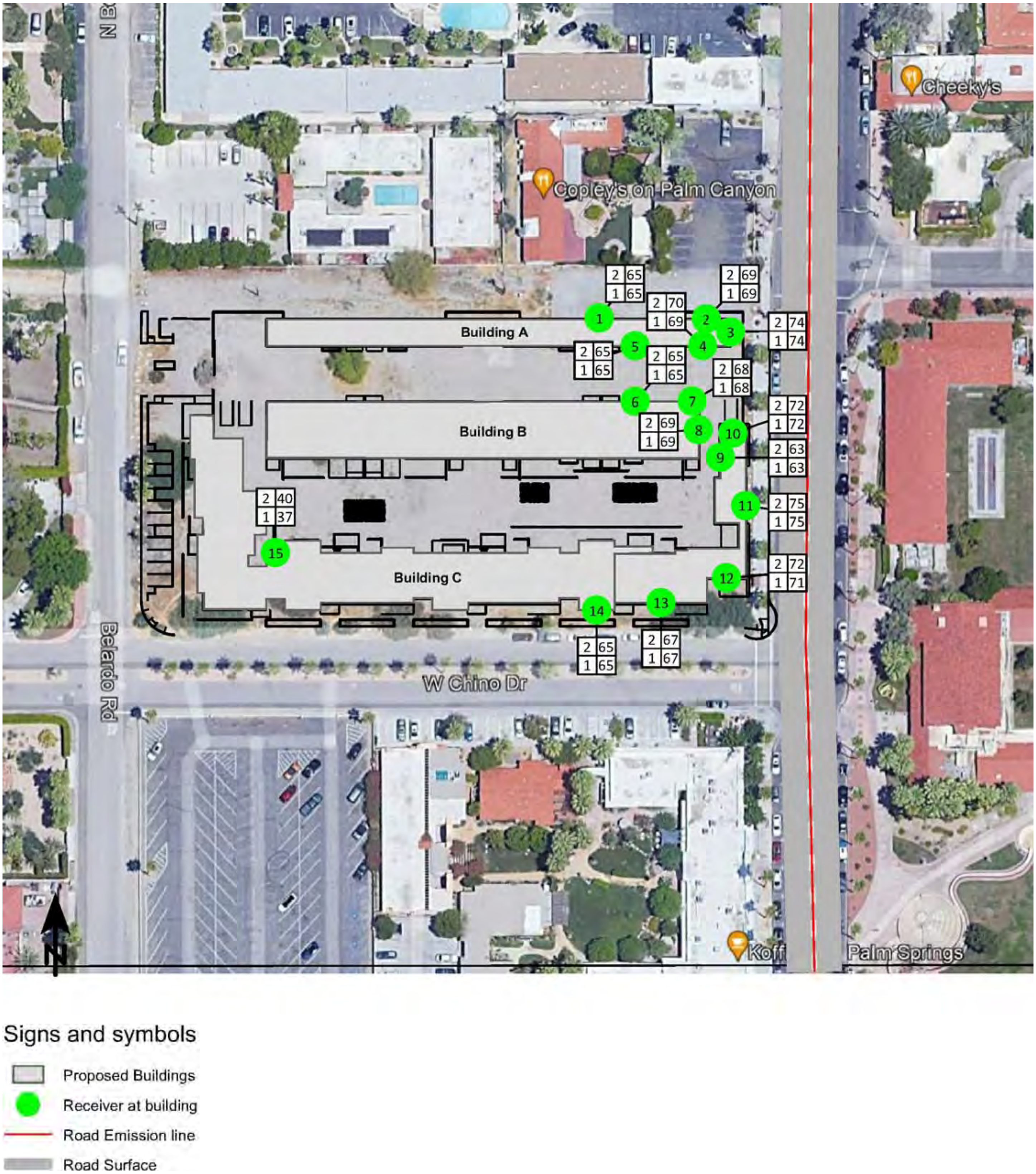

Figure 6
Future Traffic Noise Levels

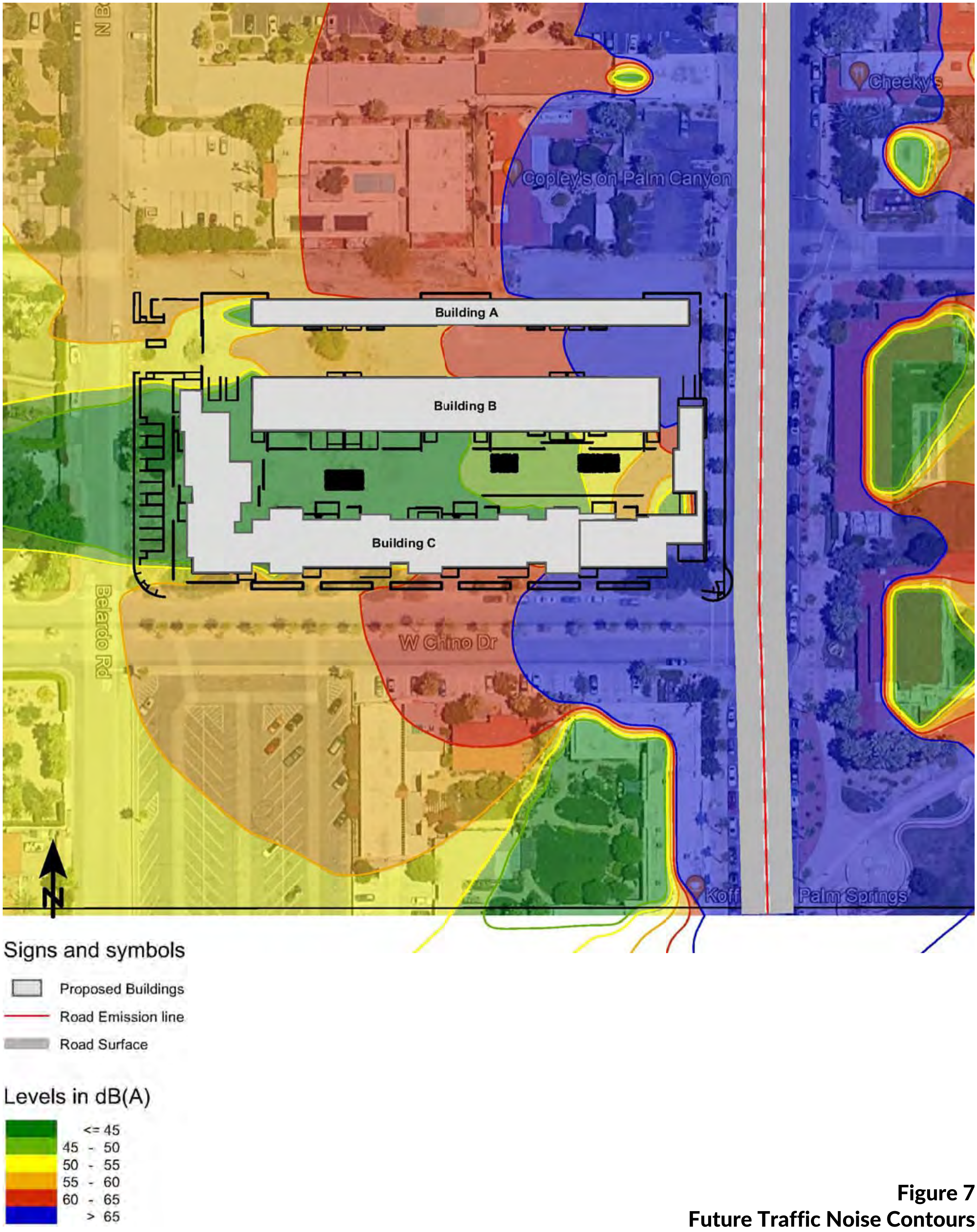

Figure 7
Future Traffic Noise Contours

7. IMPACTS - CEQA THRESHOLDS

Will the project result in the:

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant Impact With Mitigation:

The construction phases for the proposed project are anticipated to include site preparation, grading, building construction, paving and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities are anticipated to begin no sooner than the beginning of November 2022 and be completed by early May 2024.

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. The existing single-family residential uses to the west, multi-family residential uses to the north, and the transient lodging use to the northeast of the project site property lines may be affected by short-term noise impacts associated with construction noise.

Construction noise associated with the proposed project was calculated utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 10. Worksheets for each phase are included as Appendix D.

A comparison of existing noise levels and project construction noise levels at the closest receptor locations are presented in Table 9. STNM1 was chosen to represent noise levels at the property lines of the multi-family residential uses located to the north and northwest of the project site, STNM2 was chosen to represent noise levels at the property lines of the single-family residential uses to the west and southwest of the project site, STNM3 was chosen to represent noise levels at the property line of the rehabilitation center to the south of the project site, STNM4 was chosen to represent noise levels at the property line of the art gallery use to the east of the project site, and STNM5 was chosen to represent noise levels at the property line of the hotel use to the northeast of the project site.

Modeled unmitigated construction noise levels ranged between 55.3 and 76.1 dBA L_{eq} at the nearest sensitive receptors to the project site (see Table 10). The expected duration of each phase and the loudest sound level at the nearest sensitive receptor (multi-family residential to north) is presented below:

Phase	Number of Days	Maximum Leq
Site Preparation	5	75.4
Grading	9	76.1
Building Construction	346	73.5
Paving	16	73.7
Architectural Coating	30	64.2

As discussed earlier, construction noise sources are regulated within the City of Palm Springs Municipal Code Section 8.04.220 which prohibits construction other than during the hours of 7:00 AM to 7:00 PM on weekdays and 8:00 AM to 5:00 PM on Saturdays. In addition, construction work is not permitted on Sundays and holidays (incudes Thanksgiving Day, Christmas Day, New Year's Day, July 4th, Labor Day and Memorial Day). The proposed project will comply with the allowed hours of construction specified in Section 8.04.220 of the City of Palm Springs' Municipal Code.

Impacts would be less than significant, and no mitigation is required. However, the following best management practices are recommended to further reduce construction noise, emanating from the proposed project:

Suggested Best Management Practices

1. Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. Place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. As applicable, shut off all equipment when not in use.

4. Locate equipment staging in areas that create the greatest distance between construction-related noise/vibration sources and existing sensitive receptors.

5. Direct away and shield jackhammers, pneumatic equipment, and all other portable stationary noise sources from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks. Entryways should be located on the northern side.

6. Amplified music and/or voice will not be allowed on the project site.

7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per Section 8.04.220 of the City of Palm Springs' Municipal Code.

b) Generation of excessive groundborne vibration of groundborne noise levels?

Less Than Significant Impact:

There are several types of construction equipment that can cause vibration levels high enough to cause architectural damage and/or annoyance to persons in the vicinity. For example, as shown in Table 13, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (0.089 PPV) at a distance of 25 feet (two of the most vibratory pieces of construction equipment).

Available guidelines from the Federal Transit Administration (FTA) are utilized to assess impacts due to ground-borne vibration. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. As shown in Table 7, the threshold at which there is a risk to "architectural" damage to reinforced-concrete, steel or timber (no plaster) buildings is a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings a PPV of 0.3, at non-engineered timber and masonry buildings a PPV of 0.2 and at buildings extremely susceptible to vibration damage a PPV of 0.1. The FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories:

(1) Vibration Category 1 – High Sensitivity,
(2) Vibration Category 2 – Residential, and
(3) Vibration Category 3 – Institutional.

The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration criteria associated with human annoyance for these three land-use categories are shown in Table 8. Table 8 shows that 72 VdB is the threshold for annoyance from groundborne vibration at residential sensitive receptors and 75 VdB at institutional sensitive receptors.

As stated previously, for conservative purposes, this construction vibration analysis compares the estimated vibration levels generated during construction of the project to the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings.

The nearest off-site structures to the project property lines include the commercial structures located approximately 32 feet to the north, 82 feet to the south, and 95 feet to the east and the residential structures located approximately 40 feet to the north, 95 feet to the west and northwest, and 127 feet to the southwest. As shown in Table 14, at 32 feet, the closest off-site commercial structure, use of a vibratory roller would be expected to generate a PPV of 0.145 in/sec and a bulldozer would be expected to generate a PPV of 0.061 in/sec. In addition, at 40 feet, the closest off-site residential structure, use of a vibratory roller would be expected to generate a PPV of 0.104 in/sec and a bulldozer would be expected to generate a PPV of 0.044 in/sec. Therefore, use of either a vibratory roller or a bulldozer would not cause architectural damage to the receptors to the west and not mitigation is required. Impacts from vibration generated damage would less than significant.

As shown in Table 8, vibration becomes strongly perceptible to sensitive receptors at a level of 72 VdB and at a level of 75 VdB at daytime institutional uses. A vibratory roller could generate up to 72 VdB at a distance of 136 feet from the source and a large bulldozer could generate 72 VdB at a distance of 80 feet from the source. In addition, a vibratory roller could generate up to 75 VdB at a distance of 108 feet from the source and a large bulldozer could generate 75 VdB at a distance of 63 feet from the source. Calculated project generated construction vibration levels are shown in Table 14.

The closest buildings to the project site include commercial buildings located as close as 32 feet from the project property lines.; however, commercial uses are not considered a vibration-sensitive land use, no further analysis in regard to annoyance is necessary.

The closest residential buildings to the project site include the multi-family residential dwelling units located approximately 40 feet to the north and the single-family residential buildings located as close as approximately 95 feet to the west and northwest and 127 feet to the southwest of the project site property lines. Furthermore, the commercial use to the south, with buildings located as close as approximately 82 feet from the project's southern property line, is a rehabilitation center; therefore, for purposes of this analysis it was assumed to fit under Category 1 as a residential sensitive receptor. In addition, the commercial use to the east, with buildings as close as approximately 95 feet from the project's eastern property line, is an art gallery with associated classes; therefore, for purposes of this analysis, it was assumed to fit under Category 3 as an institutional sensitive receptor (see Table 8). As shown in Table 13, the threshold for annoyance due to vibration (72 VdB at offsite residential sensitive uses and 75 VdB at off-site institutional sensitive uses) could theoretically be exceeded at existing sensitive receptors surrounding the project site, and people may be temporarily annoyed. However, the impact would only occur during daytime hours and will be temporary. The impact would be less than significant. No mitigation is required.

Operation of the proposed project will involve the movement of passenger vehicles and trucks. Driving surfaces associated with the project will be paved and will generally be smooth. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020). Groundborne vibration levels associated with passenger vehicles is much lower. The movement of vehicles on the project site would not result in the generation of excessive groundborne vibration or groundborne noise. Impacts would be less than significant. No mitigation is required.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?*

Less than Significant Impact:

The closest airport to the project site is the Palm Spring International Airport with runways located as close as approximately 1.72 miles to the northeast of the project site. Per the City of Palm Springs General Plan, (Figure 6-8) Airport Compatibility Plan, the project site is not located in an airport compatibility zone. Furthermore, the noise compatibility contours provided in the Riverside County Airport Land Use Compatibility Plan (RCALUCP) show that the project site is well outside the 60 dBA CNEL noise contour for the Palm Springs International Airport. Therefore, although the project is within two miles of a public airport, the project would not expose people residing or working in the project area to excessive noise levels associated with airports.

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APPENDICES

Appendix A

List of Acronyms

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
Lp	Sound Pressure Level
LOS C	Level of Service C
Lw	Sound Power Level
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

DEFINITIONS OF ACOUSTICAL TERMS

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	L_{max} is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. L_{min} is the minimum level.
Lp	Sound pressure level. The sound pressure level is a measure for the effect of the energy of an acoustic source (or a collection of sources) and depends on the distance to the source(s) and acoustic properties of the surroundings of the source. Given a well defined operation condition, the sound power level of a machine is a fixed value, were the sound pressure level always depends on position and environment.
Lw	Sound power level. The sound power level indicates the total acoustic energy that a machine, or piece of equipment, radiates to its environment.
Offensive/ Offending/	The noise that intrudes over and above the existing ambient noise at a given location. The relative

Intrusive Noise	intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEET

Noise Measurement
Field Data

Project Name: RIOS Project, City of Palm Springs

Date: March 11, 2022

Project #: 19476

Noise Measurement #: STNM1 Run Time: 15 minutes (1 x 15 minutes)

Technician: Ian Edward Gallagher

Nearest Address or Cross Street: 600 Belardo Road, Palm Springs, CA 92262

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: Multi-family residential to north (past block wall), vacant project site to south, & Belardo Rd to west.

Weather: Clear skies, sunshine. Sunset: 5:51 PM

Settings: SLOW FAST

Temperature: 70 deg F **Wind:** 8 mph **Humidity:** 5% **Terrain:** Flat

Start Time: 11:22 AM **End Time:** 11:37 AM **Run Time:**

Leq: 45 dB

Lmax 56.4 dB

L2 50.5 dB

L8 48.0 dB

L25 45.4 dB

L50 43.8 dB

Primary Noise Source: Traffic noise from vehicles traveling along N Palm Canyon Dr, W Chino Dr & Belardo Rd.

Secondary Noise Sources: Bird song, residential ambiance, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE). Parking lot ambiance.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/11/2022		

Noise Measurement
Field Data

PHOTOS:

STNM1 looking W towards Belardo Road. Multi family residence 600 Belardo Road, Palm Springs on other side of block wall to right of image.

STNM1 looking S towards W Chino Drive and parking lot next to building 515 N Palm Canyon Drive.

Summary			
File Name on Meter	LxT_Data.076.s		
File Name on PC	LxT_0003099-20220311 112243-LxT_Data.076.ldbin		
Serial Number	0003099		
Model	SoundTrack LxT®		
Firmware Version	2.404		
User	Ian Edward Gallagher		
Location	STNM1 33°49'54.76"N 116°32'52.47"W		
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Measurement	
Start	2022-03-11 11:22:43
Stop	2022-03-11 11:37:43
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-03-11 11:22:11
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.8 dB

Results		
LAeq	45.0	
LAE	74.6	
EA	3.185 µPa²h	
EA8	101.907 µPa²h	
EA40	509.536 µPa²h	
LZpeak (max)	2022-03-11 11:30:59	91.4 dB
LASmax	2022-03-11 11:29:25	56.4 dB
LASmin	2022-03-11 11:33:11	37.6 dB

		Statistics	
LCeq	62.1 dB	**LA2.00**	50.5 dB
LAeq	45.0 dB	**LA8.00**	48.0 dB
LCeq - LAeq	17.0 dB	**LA25.00**	45.4 dB
LAIeq	47.2 dB	**LA50.00**	43.8 dB
LAeq	45.0 dB	**LA66.60**	42.8 dB
LAIeq - LAeq	2.2 dB	**LA90.00**	40.6 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.076.s	Computer's File Name	LxT_0003099-20220311 112243-LxT_Data.076.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM1 33°49'54.76"N 116°32'52.47"W
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 11:22:43	Duration	0:15:00.0		
End Time	2022-03-11 11:37:43	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	45.0 dB		
LAE	74.6 dB	SEA	--- dB
EA	3.2 µPa²h	LAFTM5	48.8 dB
EA8	101.9 µPa²h		
EA40	509.5 µPa²h		
LZ_{peak}	91.4 dB	2022-03-11 11:30:59	
LAS_{max}	56.4 dB	2022-03-11 11:29:25	
LAS_{min}	37.6 dB	2022-03-11 11:33:11	
LA_{eq}	45.0 dB		
LC_{eq}	62.1 dB	LC_{eq} - LA_{eq}	17.0 dB
LAI_{eq}	47.2 dB	LAI_{eq} - LA_{eq}	2.2 dB

Exceedances	Count	Duration
LAS > 65.0 dB	0	0:00:00.0
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

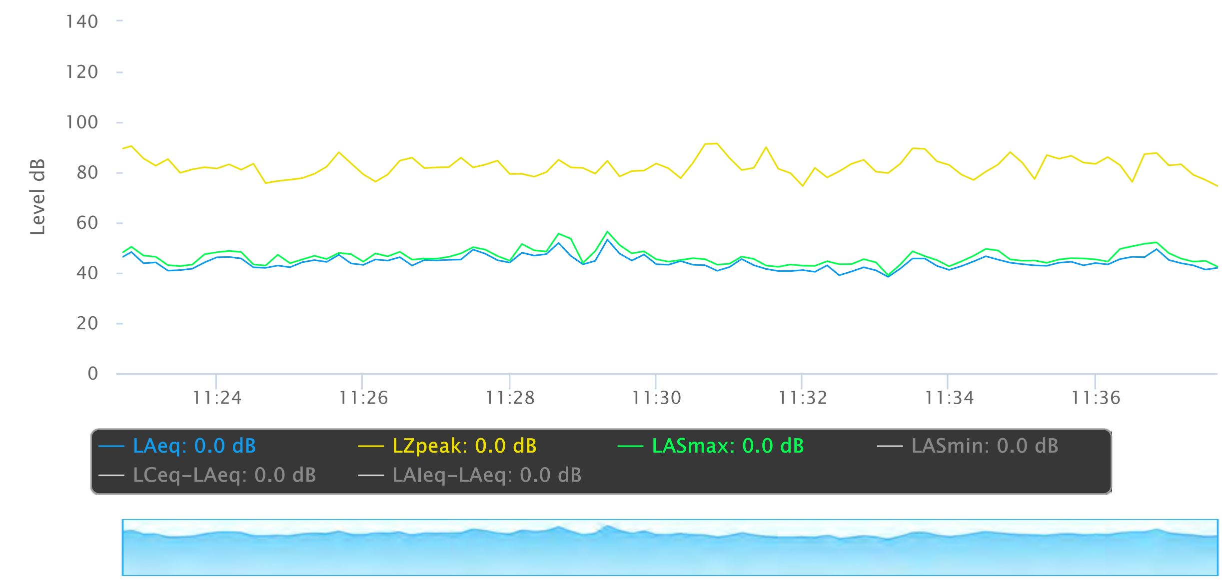
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	45.0 dB		62.1 dB		--- dB	
$Ls_{(max)}$	56.4 dB	2022-03-11 11:29:25	--- dB		--- dB	
$LS_{(min)}$	37.6 dB	2022-03-11 11:33:11	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		91.4 dB	2022-03-11 11:30:59

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

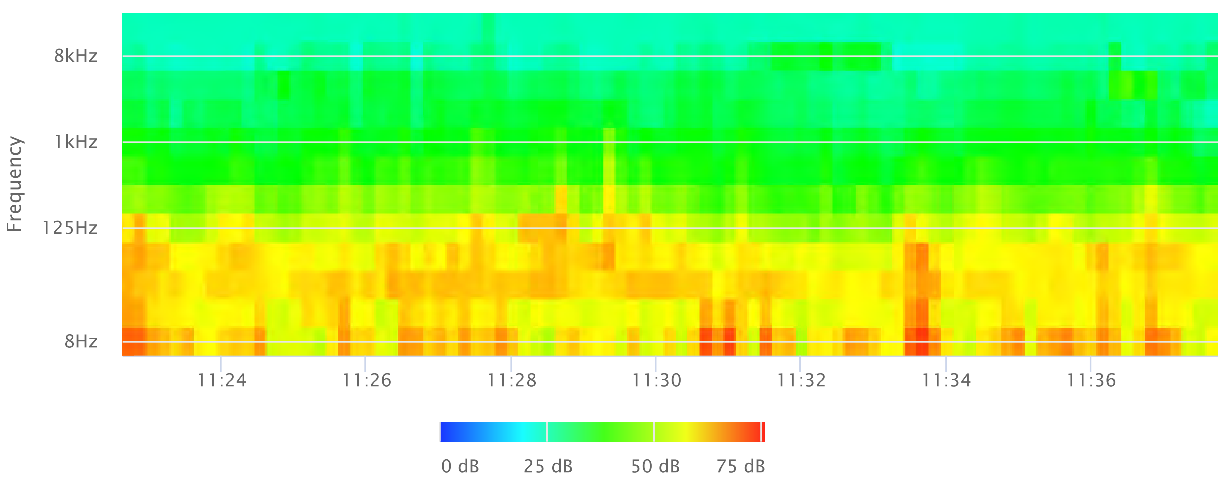
Statistics

LAS 2.0	50.5 dB
LAS 8.0	48.0 dB
LAS 25.0	45.4 dB
LAS 50.0	43.8 dB
LAS 66.6	42.8 dB
LAS 90.0	40.6 dB

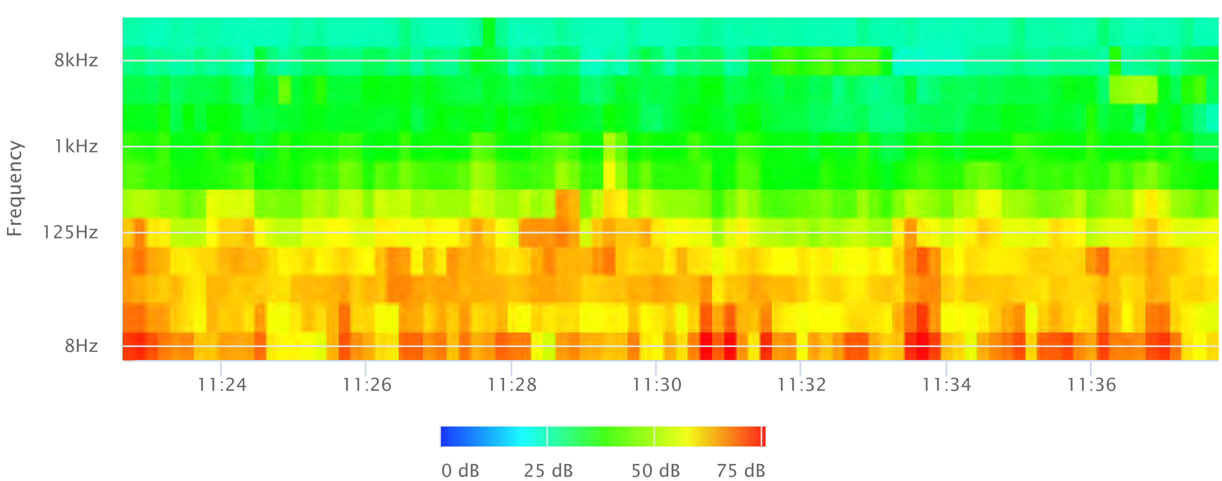
Time History



OBA 1/1 Leq



OBA 1/1 Lmax



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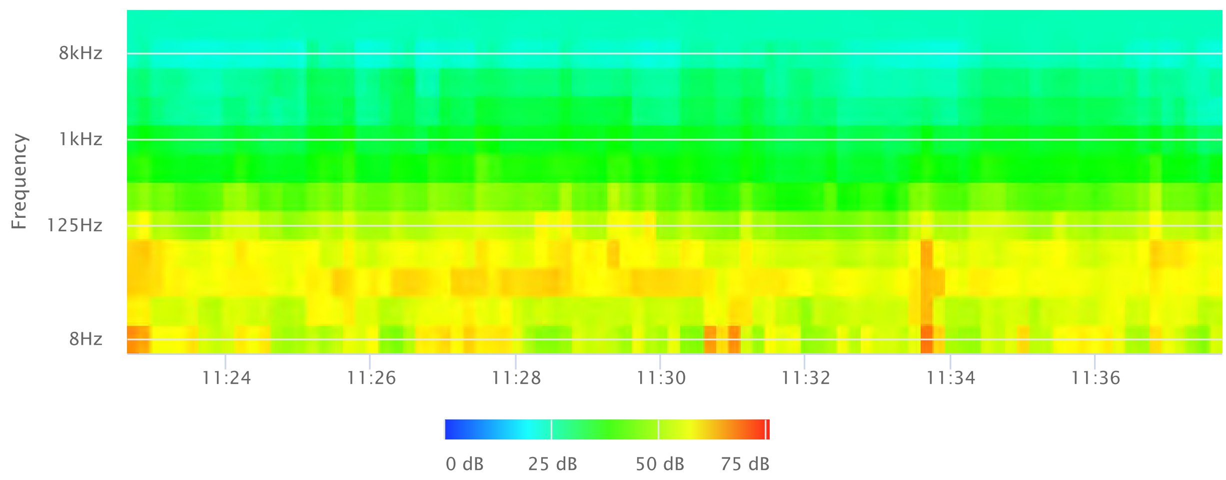
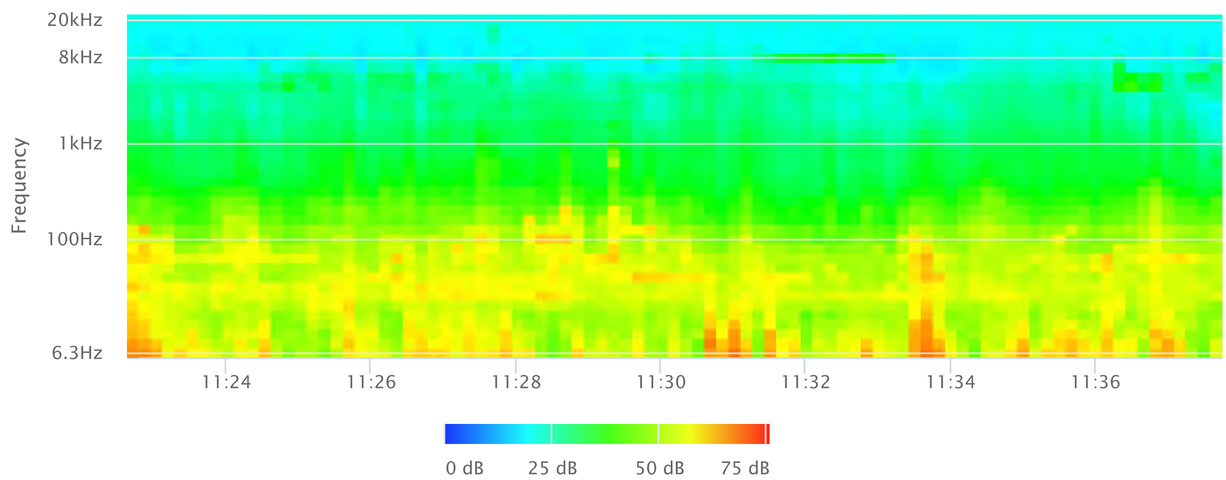
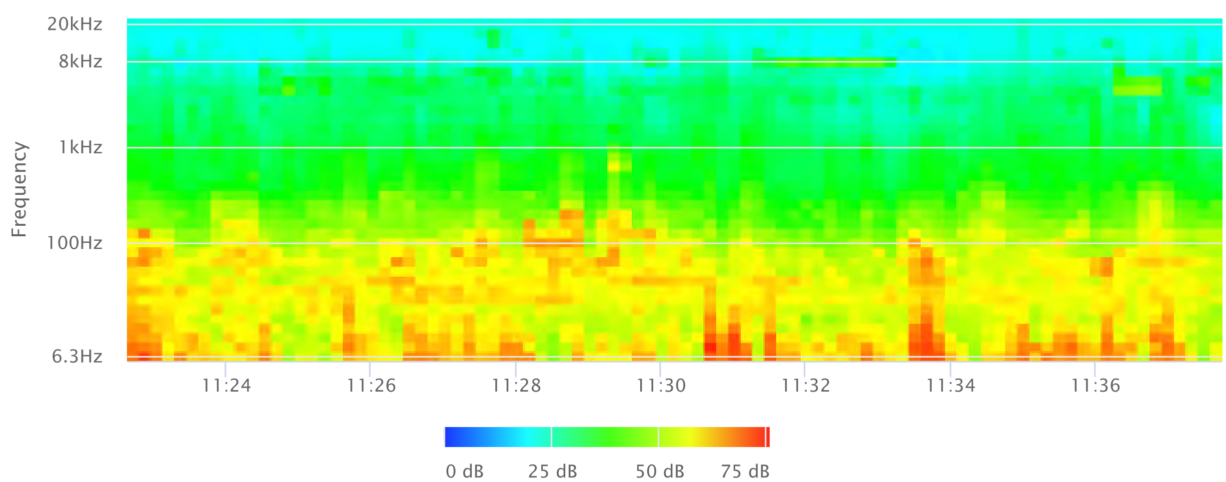


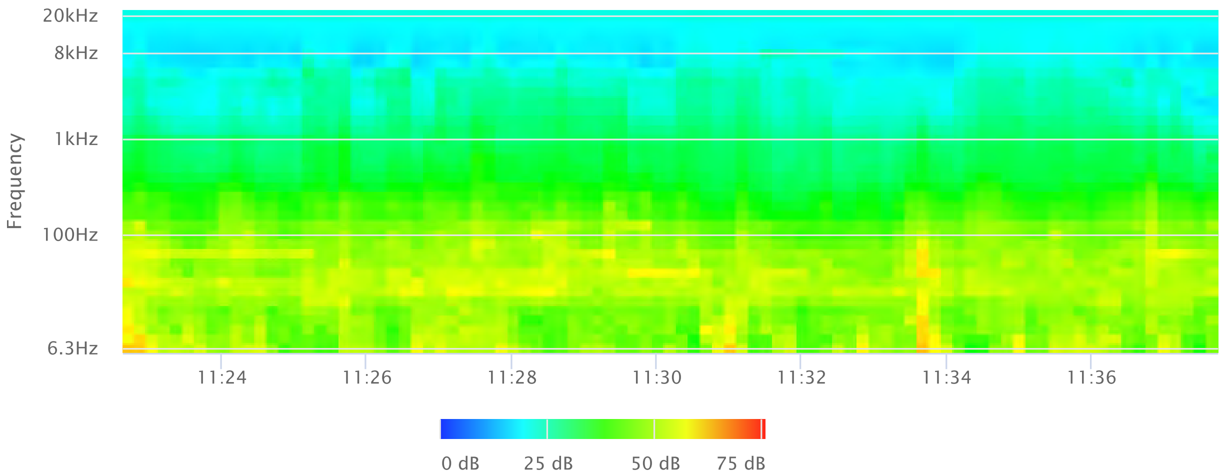
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin



20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
11:24
11:26
11:28
11:30
11:32
11:34
11:36
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: RIOS Project, City of Palm Springs **Date:** March 11, 2022

Project #: 19476

Noise Measurement #: STNM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 222 W Chino Drive, Palm Springs, CA 92262

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: Belardo Rd to east w/ vacant project site further east, W Chino Dr to south, & single-family residential to west (other side of block wall).

Weather: Clear skies, sunshine. Sunset: 5:51 PM **Settings:** SLOW FAST

Temperature: 70 deg F **Wind:** 8 mph **Humidity:** 5% **Terrain:** Flat

Start Time: 12:43 PM **End Time:** 12:58 PM **Run Time:**

Leq:	53.7	dB
Lmax	73.2	dB
L2	62.7	dB
L8	56.9	dB
L25	50.6	dB
L50	46.9	dB

Primary Noise Source: Traffic noise from the 40 vehicles passing through Belardo Rd & W Chino Drive intersection during 15 minute measurement. Traffic noise from other roads.

Secondary Noise Sources: Bird song, residential ambiance, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE). Parking lot ambiance.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/11/2022		

Noise Measurement
Field Data

PHOTOS:

STNM2 looking S towards Belardo Road & W Chino Drive intersection.

STNM2 looking N along Belardo Road, along E wall of residence 222 W Chino Drive, Palm Springs.

Summary			
File Name on Meter	LxT_Data.077.s		
File Name on PC	LxT_0003099-20220311 124324-LxT_Data.077.ldbin		
Serial Number	0003099		
Model	SoundTrack LxT®		
Firmware Version	2.404		
User	Ian Edward Gallagher		
Location	STNM2 33°49'52.74"N 116°32'54.79"W		
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		
Measurement			
Start	2022-03-11 12:43:24		
Stop	2022-03-11 12:58:24		
Duration	00:15:00.0		
Run Time	00:15:00.0		
Pause	00:00:00.0		
Pre-Calibration	2022-03-11 12:42:52		
Post-Calibration	None		
Overall Settings			
RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamplifier	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Frequency Weighting	Z Weighting		
OBA Max Spectrum	Bin Max		
Overload	122.9 dB		
Results			
LAeq	53.7		
LAE	83.3		
EA	23.673 µPa²h		
EA8	757.530 µPa²h		
EA40	3.788 mPa²h		
LZpeak (max)	2022-03-11 12:48:29	98.6 dB	
LASmax	2022-03-11 12:58:22	73.2 dB	
LASmin	2022-03-11 12:57:48	38.6 dB	

		Statistics	
LCeq	65.7 dB	**LA2.00**	62.7 dB
LAeq	53.7 dB	**LA8.00**	56.9 dB
LCeq - LAeq	11.9 dB	**LA25.00**	50.6 dB
LAIeq	55.8 dB	**LA50.00**	46.9 dB
LAeq	53.7 dB	**LA66.60**	45.4 dB
LAIeq - LAeq	2.1 dB	**LA90.00**	42.7 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.077.s	Computer's File Name	LxT_0003099-20220311 124324-LxT_Data.077.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM2 33°49'52.74"N 116°32'54.79"W
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 12:43:24	Duration	0:15:00.0		
End Time	2022-03-11 12:58:24	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	53.7 dB		
LAE	83.3 dB	SEA	--- dB
EA	23.7 µPa²h	LAFTM5	58.7 dB
EA8	757.5 µPa²h		
EA40	3.8 mPa²h		
LZ_{peak}	98.6 dB	2022-03-11 12:48:29	
LAS_{max}	73.2 dB	2022-03-11 12:58:22	
LAS_{min}	38.6 dB	2022-03-11 12:57:48	
LA_{eq}	53.7 dB		
LC_{eq}	65.7 dB	LC_{eq} - LA_{eq}	11.9 dB
LAI_{eq}	55.8 dB	LAI_{eq} - LA_{eq}	2.1 dB

Exceedances	Count	Duration
LAS > 65.0 dB	2	0:00:06.5
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

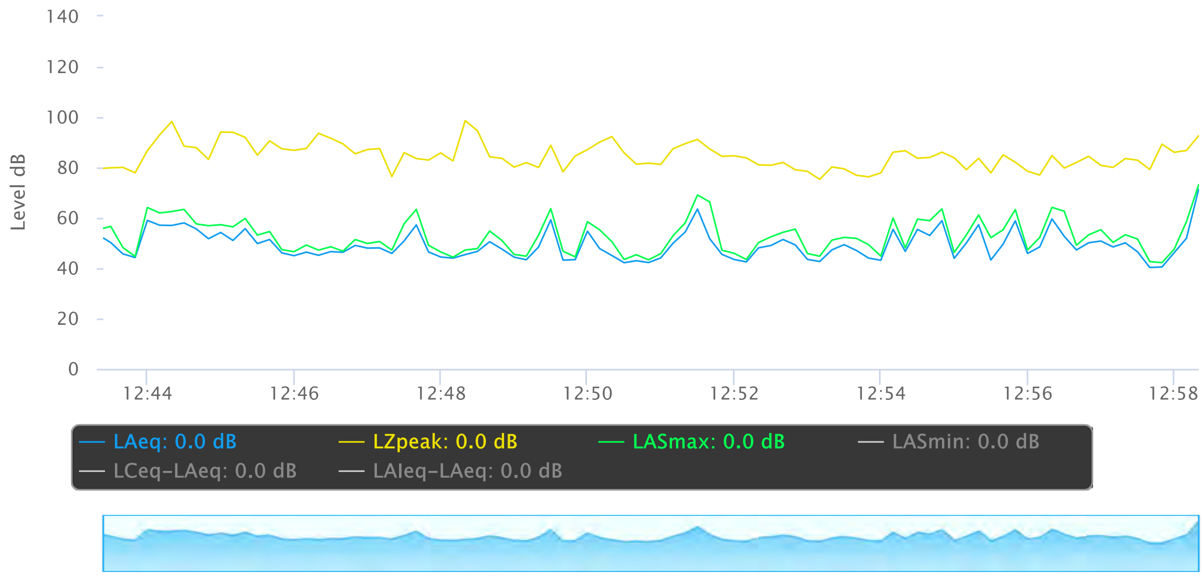
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	53.7 dB		65.7 dB		--- dB	
$Ls_{(max)}$	73.2 dB	2022-03-11 12:58:22	--- dB		--- dB	
$LS_{(min)}$	38.6 dB	2022-03-11 12:57:48	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		98.6 dB	2022-03-11 12:48:29

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

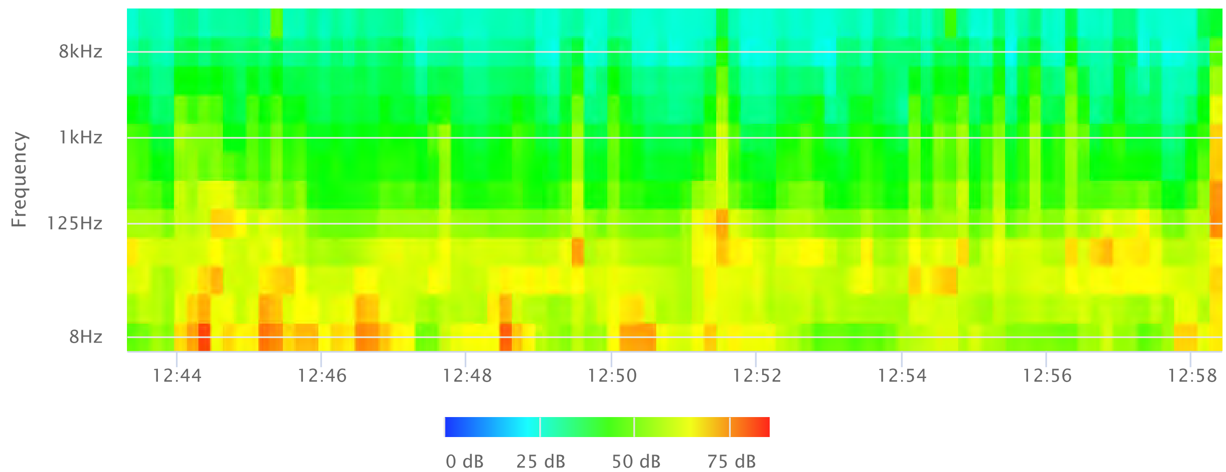
Statistics

LAS 2.0	62.7 dB
LAS 8.0	56.9 dB
LAS 25.0	50.6 dB
LAS 50.0	46.9 dB
LAS 66.6	45.4 dB
LAS 90.0	42.7 dB

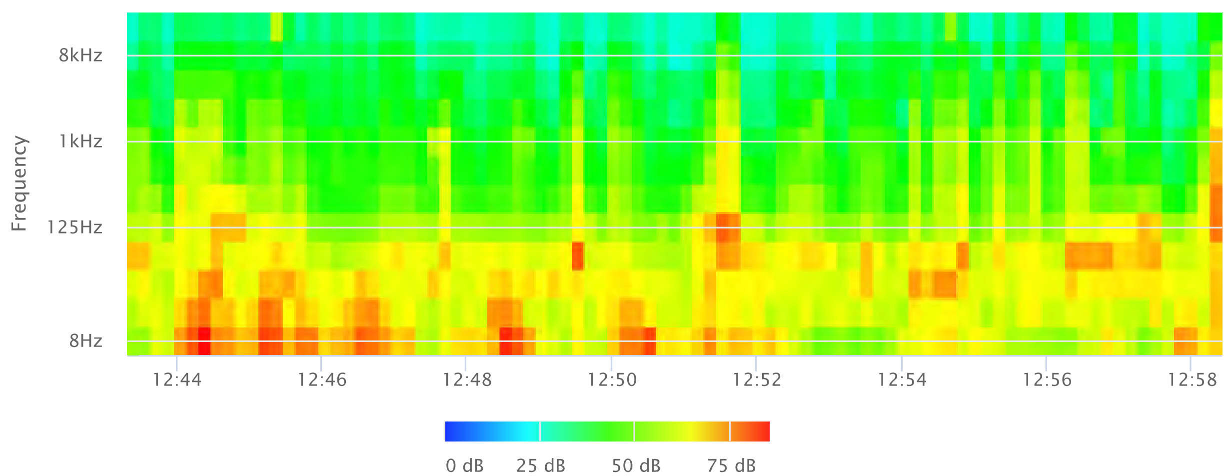
Time History



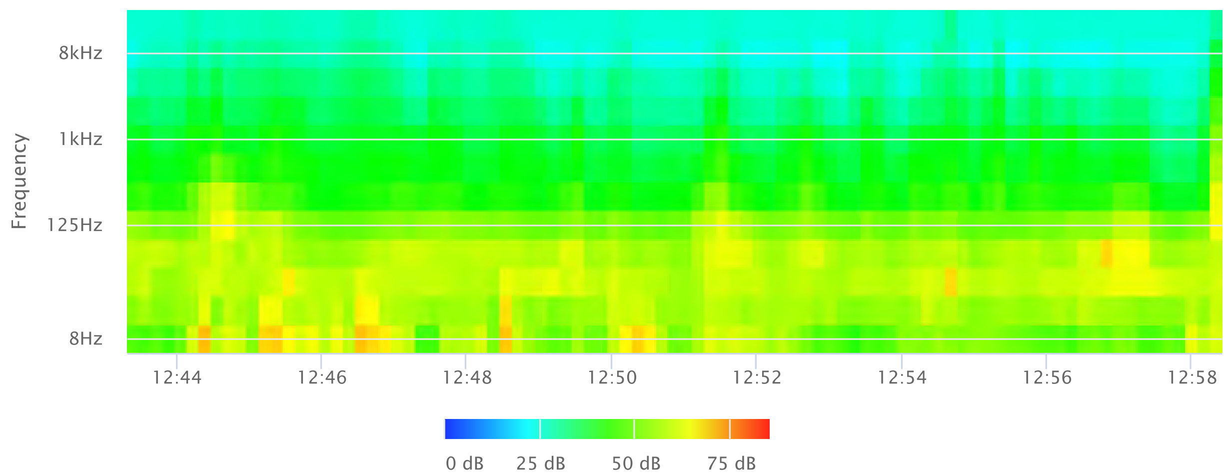
OBA 1/1 Leq



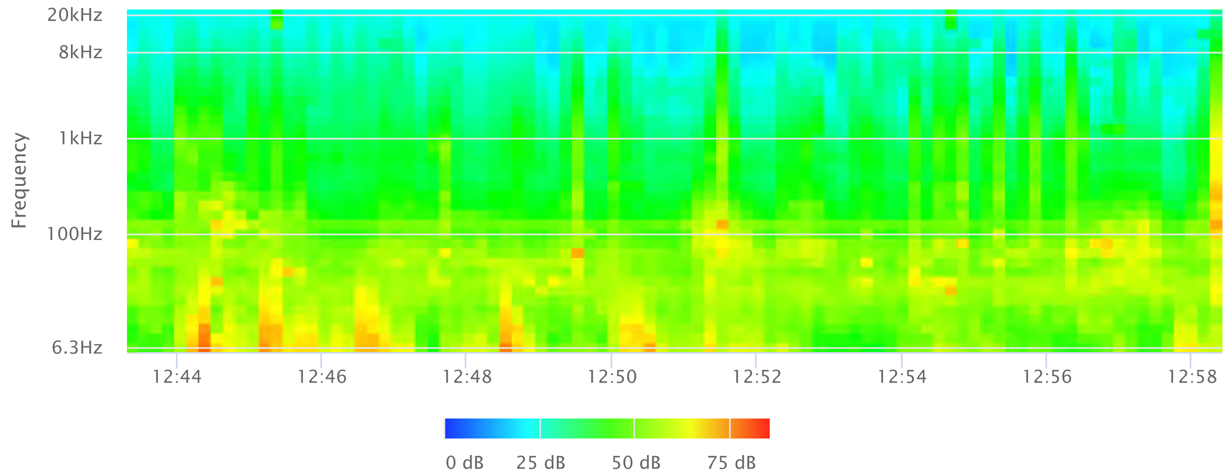
OBA 1/1 Lmax



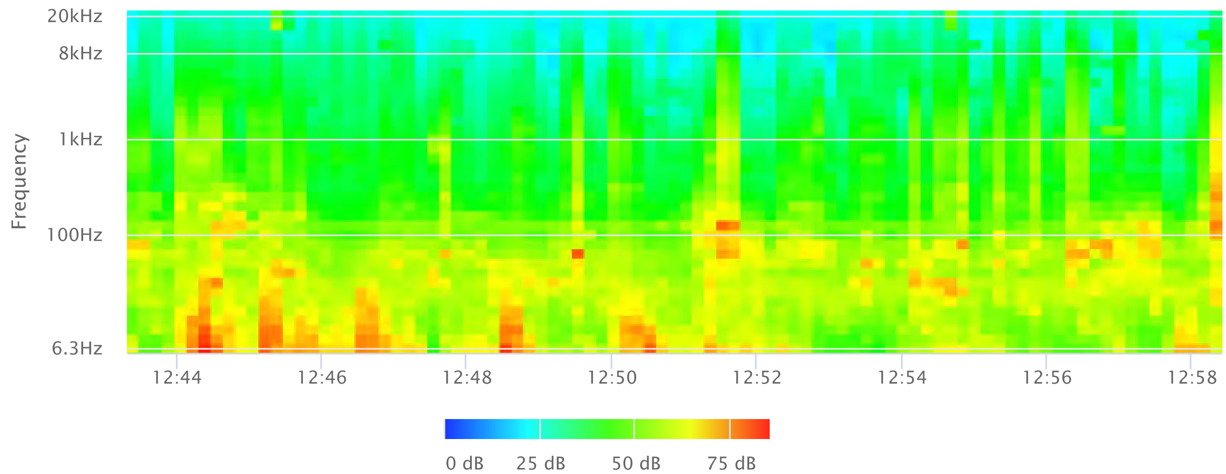
OBA 1/1 Lmin



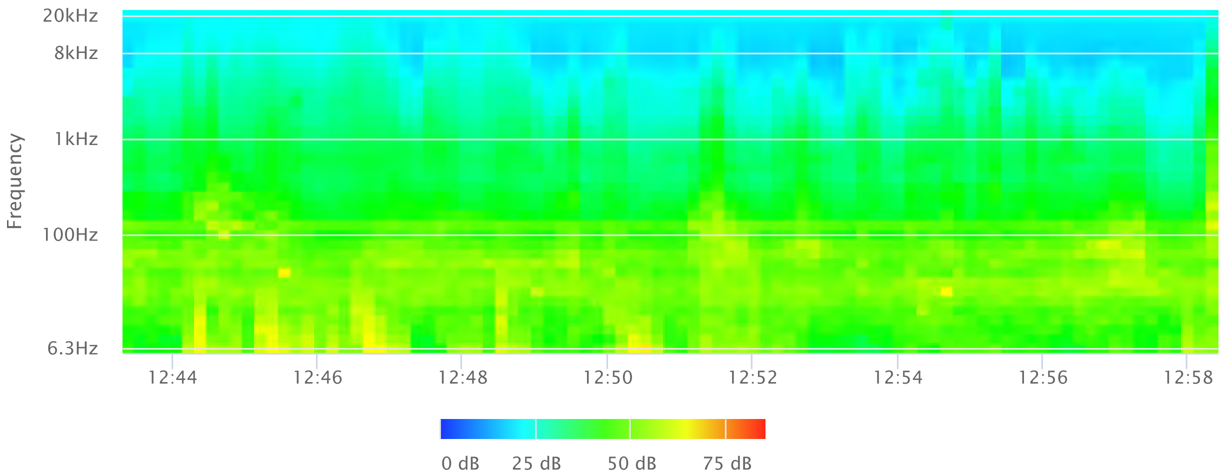
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin



20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
12:44
12:46
12:48
12:50
12:52
12:54
12:56
12:58
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: RIOS Project, City of Palm Springs **Date:** March 11, 2022

Project #: 19476

Noise Measurement #: STNM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 515 N Palm Canyon Drive C, Palm Springs, CA 92262

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: Parking lot to north w/ Belardo Rd further north, & commercial and rehabilitation uses to south/east/west.

Weather: Clear skies, sunshine. Sunset: 5:51 PM **Settings:** SLOW FAST

Temperature: 70 deg F **Wind:** 8 mph **Humidity:** 5% **Terrain:** Flat

Start Time: 1:11 PM **End Time:** 1:26 PM **Run Time:**

Leq:	50	dB
Lmax	64.8	dB
L2	56.6	dB
L8	53.5	dB
L25	50.3	dB
L50	47.6	dB

Primary Noise Source: Traffic noise from the 32 vehicles passing microphone traveling along W Chino Drive during 15 minute measurement. Traffic noise from other roads.

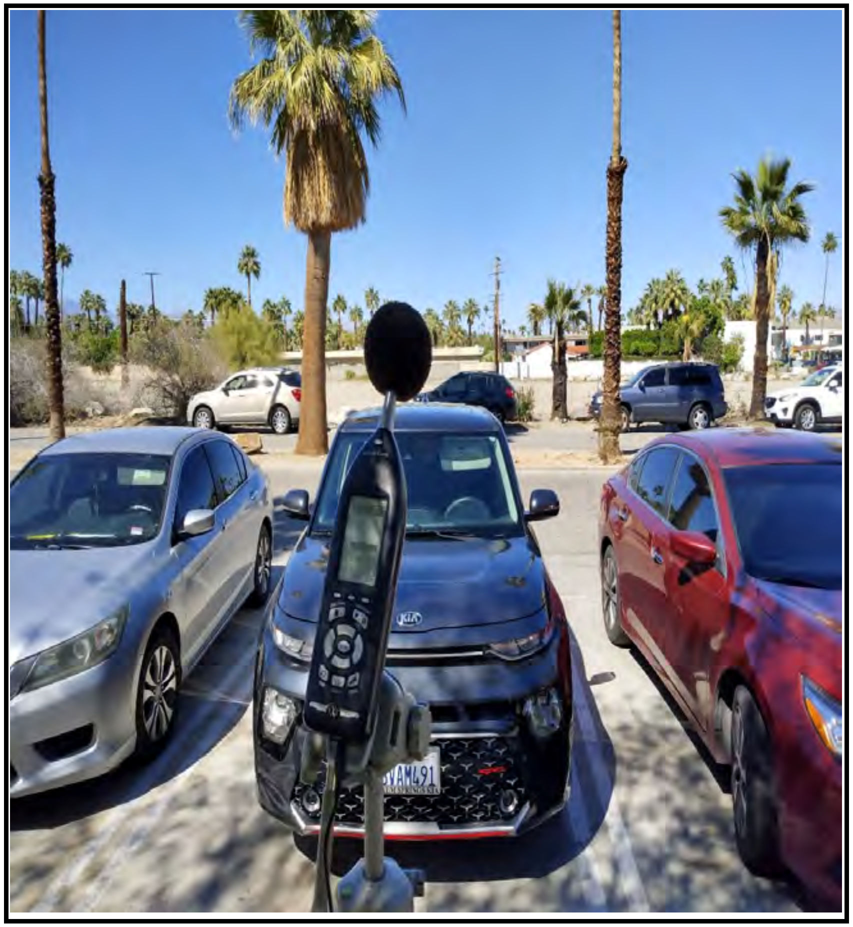
Secondary Noise Sources: Bird song, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE).

NOISE METER: SoundTrack LXT Class 1
MAKE: Larson Davis
MODEL: LXT1
SERIAL NUMBER: 3099
FACTORY CALIBRATION DATE: 11/17/2021
FIELD CALIBRATION DATE: 3/11/2022

CALIBRATOR: Larson Davis CA 250
MAKE: Larson Davis
MODEL: CA 250
SERIAL NUMBER: 2723
FACTORY CALIBRATION DATE: 11/18/2021

Noise Measurement
Field Data

PHOTOS:



STNM3 looking N across W Chino Drive towards project site.

STNM3 looking SE towards building 515 N Palm Canyon Drive C, Palm Springs.

Summary		
File Name on Meter	LxT_Data.078.s	
File Name on PC	LxT_0003099-20220311 131117-LxT_Data.078.ldbin	
Serial Number	0003099	
Model	SoundTrack LxT®	
Firmware Version	2.404	
User	Ian Edward Gallagher	
Location	STNM3 33°49'51.41"N 116°32'51.40"W	
Job Description	!5 minute noise measurement (1 x 15 minutes)	
Note	Ganddini 19476 RIOS Project, Palm Springs	
Measurement		
Start	2022-03-11 13:11:17	
Stop	2022-03-11 13:26:17	
Duration	00:15:00.0	
Run Time	00:15:00.0	
Pause	00:00:00.0	
Pre-Calibration	2022-03-11 13:11:01	
Post-Calibration	None	
Overall Settings		
RMS Weight	A Weighting	
Peak Weight	Z Weighting	
Detector	Slow	
Preamplifier	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Frequency Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Overload	122.8 dB	
Results		
LAeq	50.0	
LAE	79.6	
EA	10.101 µPa²h	
EA8	323.219 µPa²h	
EA40	1.616 mPa²h	
LZpeak (max)	2022-03-11 13:22:26	94.4 dB
LASmax	2022-03-11 13:26:00	64.8 dB
LASmin	2022-03-11 13:25:36	41.2 dB

		Statistics	
LCeq	65.1 dB	**LA2.00**	56.6 dB
LAeq	50.0 dB	**LA8.00**	53.5 dB
LCeq - LAeq	15.1 dB	**LA25.00**	50.3 dB
LAIeq	55.2 dB	**LA50.00**	47.6 dB
LAeq	50.0 dB	**LA66.60**	46.1 dB
LAIeq - LAeq	5.2 dB	**LA90.00**	44.1 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.078.s	Computer's File Name	LxT_0003099-20220311 131117-LxT_Data.078.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM3 33°49'51.41"N 116°32'51.40"W
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 13:11:17	Duration	0:15:00.0		
End Time	2022-03-11 13:26:17	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	50.0 dB		
LAE	79.6 dB	SEA	--- dB
EA	10.1 μPa²h	LAFTM5	56.6 dB
EA8	323.2 μPa²h		
EA40	1.6 mPa²h		
LZ_{peak}	94.4 dB	2022-03-11 13:22:26	
LAS_{max}	64.8 dB	2022-03-11 13:26:00	
LAS_{min}	41.2 dB	2022-03-11 13:25:36	
LA_{eq}	50.0 dB		
LC_{eq}	65.1 dB	LC_{eq} - LA_{eq}	15.1 dB
LAI_{eq}	55.2 dB	LAI_{eq} - LA_{eq}	5.2 dB

Exceedances	Count	Duration
LAS > 65.0 dB	0	0:00:00.0
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

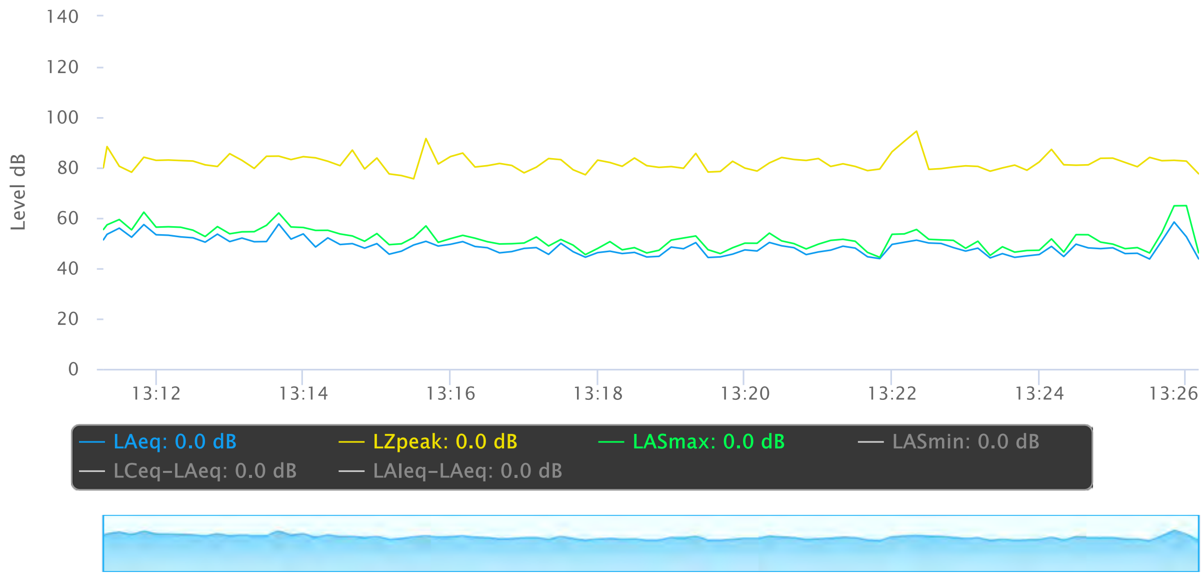
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	50.0 dB		65.1 dB		--- dB	
$Ls_{(max)}$	64.8 dB	2022-03-11 13:26:00	--- dB		--- dB	
$LS_{(min)}$	41.2 dB	2022-03-11 13:25:36	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		94.4 dB	2022-03-11 13:22:26

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

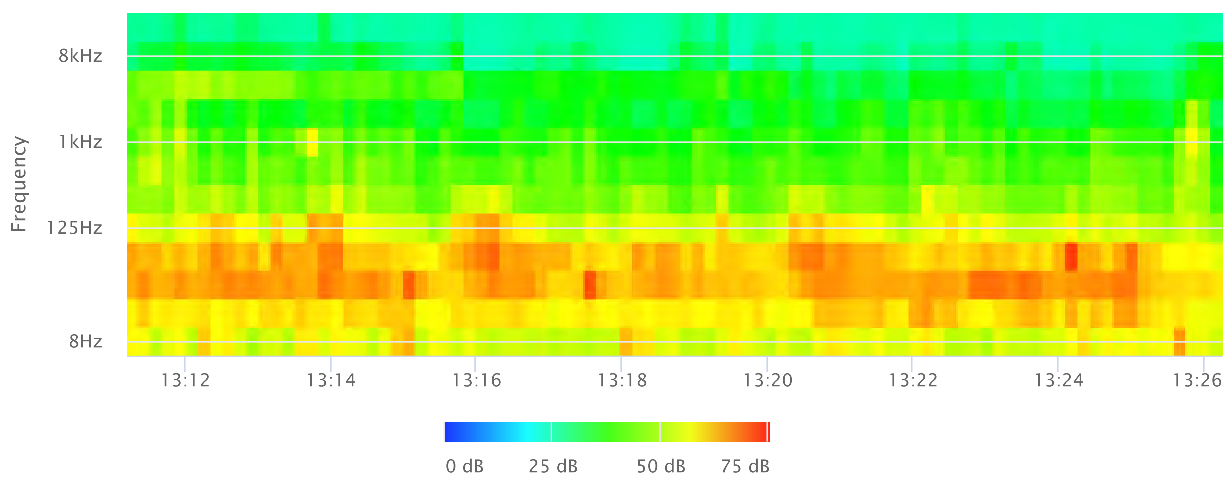
Statistics

LAS 2.0	56.6 dB
LAS 8.0	53.5 dB
LAS 25.0	50.3 dB
LAS 50.0	47.6 dB
LAS 66.6	46.1 dB
LAS 90.0	44.1 dB

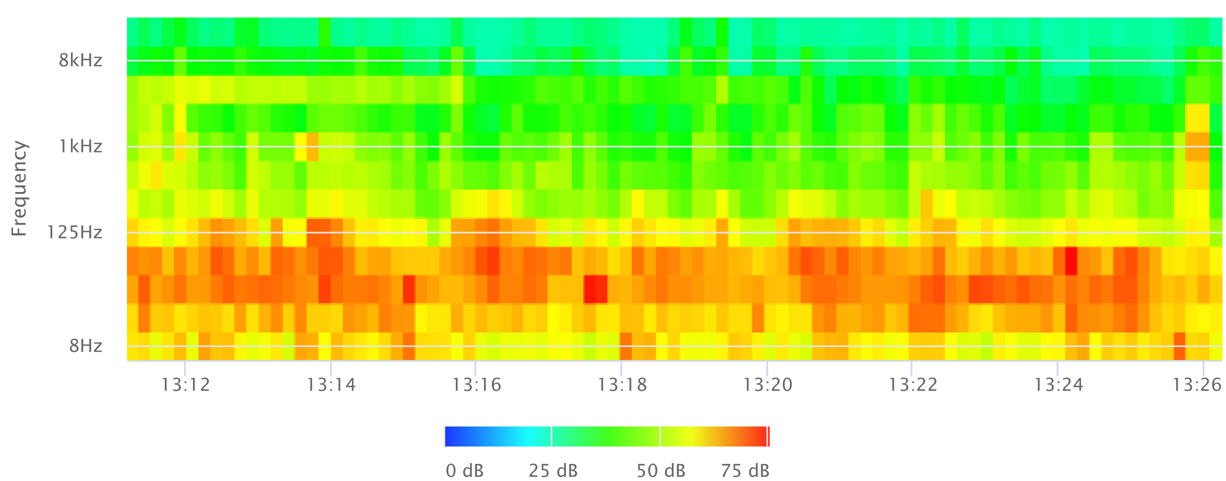
Time History



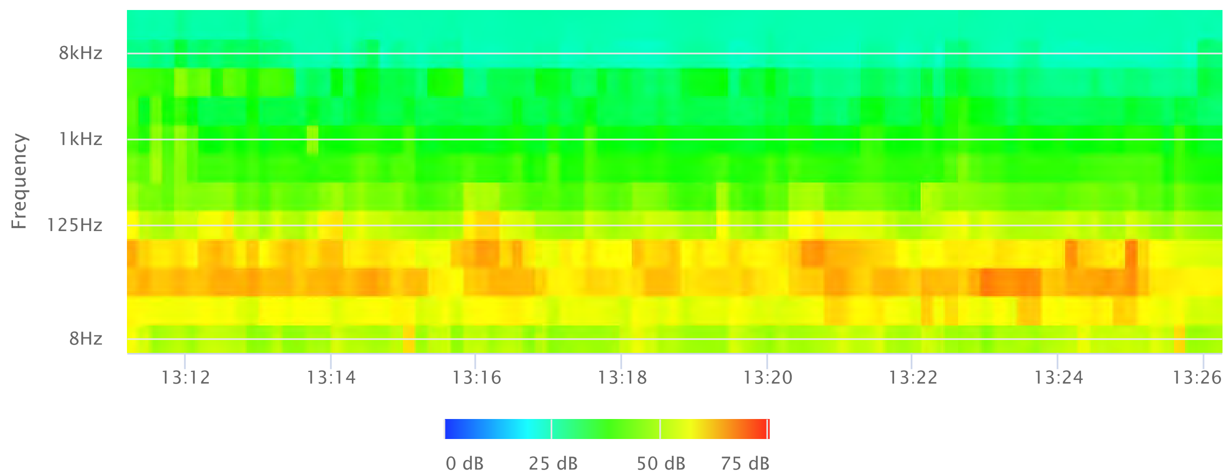
OBA 1/1 Leq



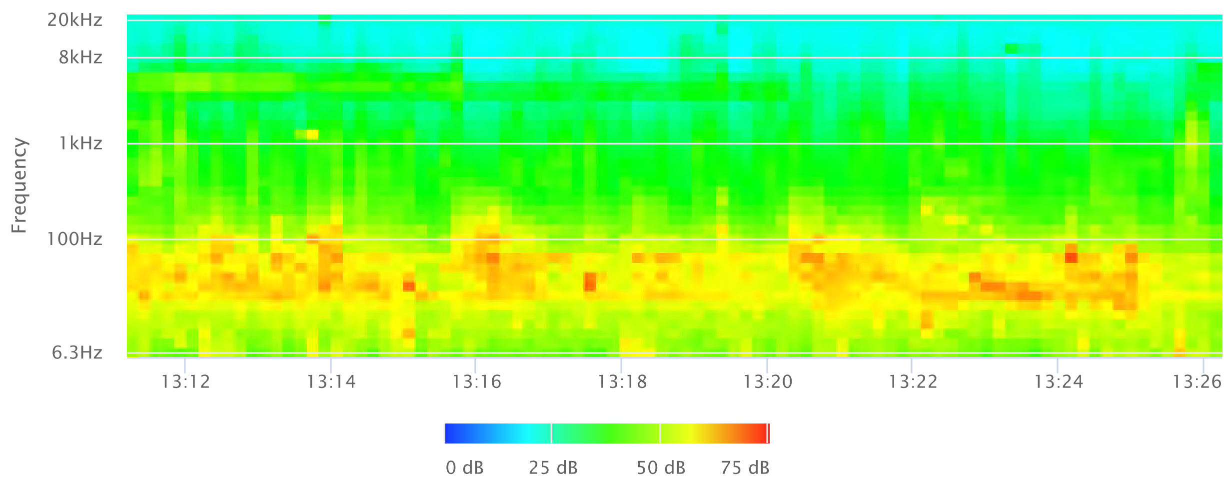
OBA 1/1 Lmax



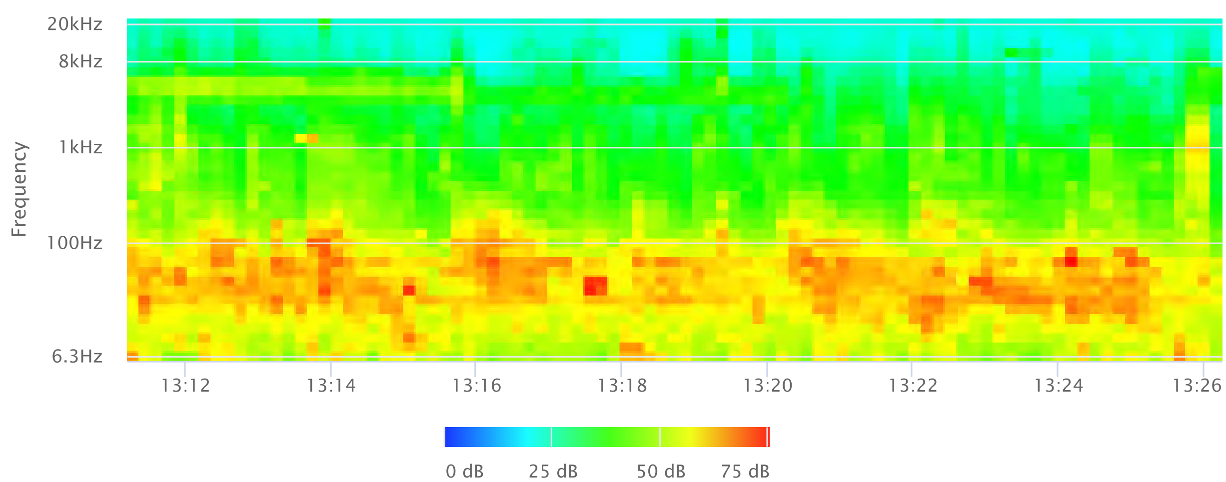
OBA 1/1 Lmin



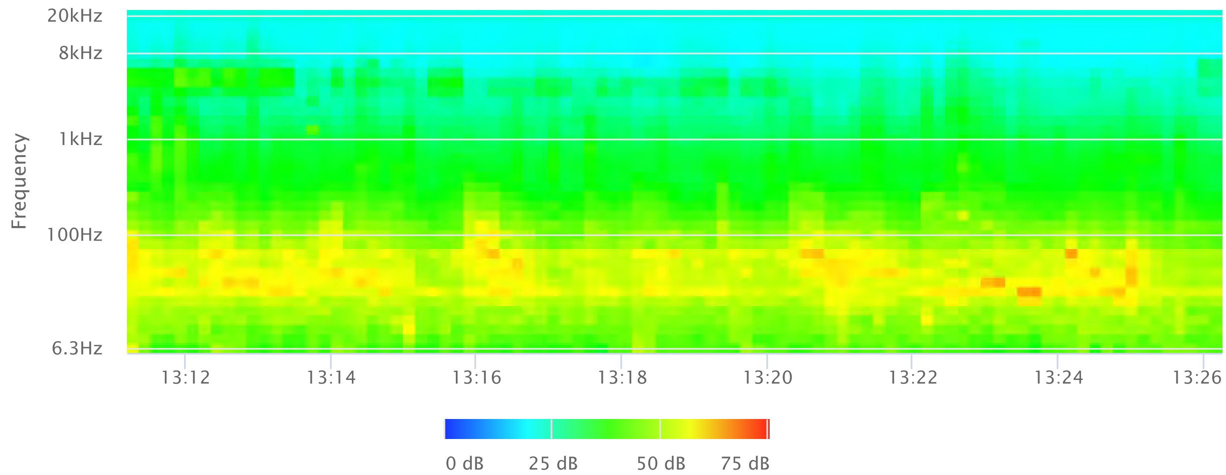
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin



20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:12
13:14
13:16
13:18
13:20
13:22
13:24
13:26
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name:	RIOS Project, City of Palm Springs	**Date:**	March 11, 2022
Project #:	19476		
Noise Measurement #:	STNM4 Run Time: 15 minutes (1 x 15 minutes)	**Technician:**	Ian Edward Gallagher
Nearest Address or Cross Street:	550 N Palm Canyon Drive, Palm Springs, CA 92262		

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: Art gallery to east & N Palm Canyon Dr to west w/ project site further west.

Weather: Clear skies, sunshine. Sunset: 5:51 PM

Settings: SLOW FAST

Temperature: 70 deg F **Wind:** 8 mph **Humidity:** 5% **Terrain:** Flat

Start Time: 1:40 PM **End Time:** 1:55 PM **Run Time:**

Leq:	60.7	dB
Lmax	79.2	dB
L2	68.6	dB
L8	63.3	dB
L25	60.3	dB
L50	57.6	dB

Primary Noise Source: Traffic noise from the 228 vehicles passing microphone traveling along N Palm Canyon Drive during 15 minute measurement. Traffic noise from other roads.

Secondary Noise Sources: Bird song, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE).

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/11/2022		

PHOTOS:

STNM4 looking ESE from sidewalk towards building 550 N Palm Canyon Drive, Palm Springs.

STNM4 looking W across N Palm Canyon Dr towards project site.

Summary	
File Name on Meter	LxT_Data.079.s
File Name on PC	LxT_0003099-20220311 134016-LxT_Data.079.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM4 33°49'53.30"N 116°32'47.96"W
Job Description	!5 minute noise measurement (1 x 15 minutes)
Note	Ganddini 19476 RIOS Project, Palm Springs

Measurement	
Start	2022-03-11 13:40:16
Stop	2022-03-11 13:55:16
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2022-03-11 13:40:04
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.7 dB

Results		
LAeq	60.7	
LAE	90.2	
EA	117.135 µPa²h	
EA8	3.748 mPa²h	
EA40	18.742 mPa²h	
LZpeak (max)	2022-03-11 13:51:18	102.4 dB
LASmax	2022-03-11 13:51:18	79.2 dB
LASmin	2022-03-11 13:51:43	46.0 dB

		Statistics	
LCeq	72.6 dB	**LA2.00**	68.6 dB
LAeq	60.7 dB	**LA8.00**	63.3 dB
LCeq - LAeq	11.9 dB	**LA25.00**	60.3 dB
LAIeq	64.5 dB	**LA50.00**	57.6 dB
LAeq	60.7 dB	**LA66.60**	55.8 dB
LAIeq - LAeq	3.8 dB	**LA90.00**	52.2 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.079.s	Computer's File Name	LxT_0003099-20220311 134016-LxT_Data.079.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM4 33°49'53.30"N 116°32'47.96"W
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 13:40:16	Duration	0:15:00.0		
End Time	2022-03-11 13:55:16	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	60.7 dB		
LAE	90.2 dB	SEA	--- dB
EA	117.1 μPa²h	LAFTM5	66.9 dB
EA8	3.7 mPa²h		
EA40	18.7 mPa²h		
LZ_{peak}	102.4 dB	2022-03-11 13:51:18	
LAS_{max}	79.2 dB	2022-03-11 13:51:18	
LAS_{min}	46.0 dB	2022-03-11 13:51:43	
LA_{eq}	60.7 dB		
LC_{eq}	72.6 dB	LC_{eq} - LA_{eq}	11.9 dB
LAI_{eq}	64.5 dB	LAI_{eq} - LA_{eq}	3.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	9	0:00:51.6
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

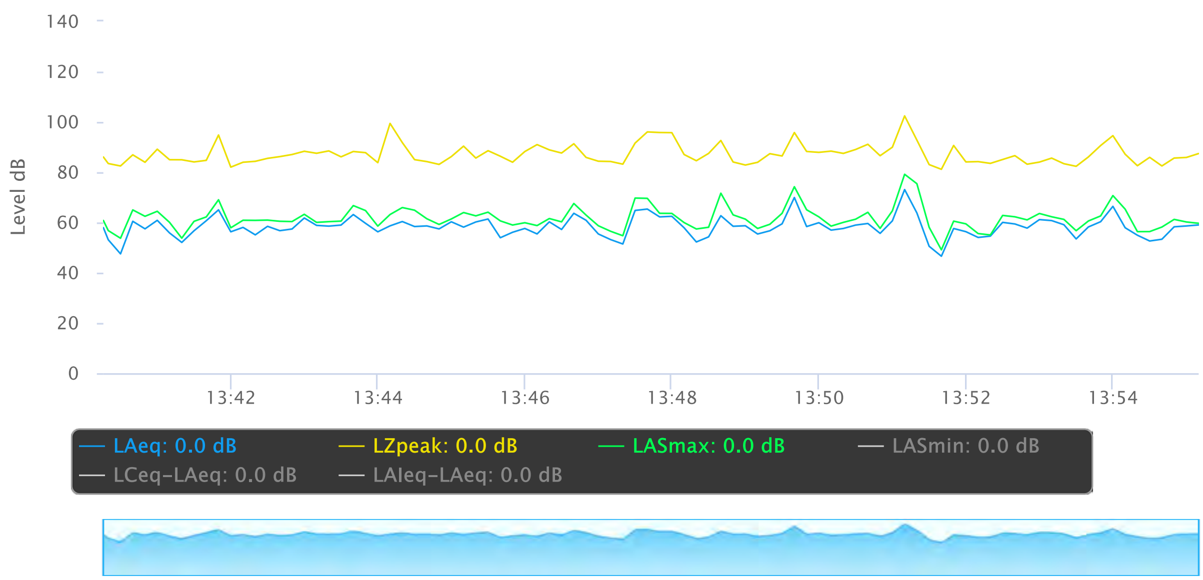
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.7 dB		72.6 dB		--- dB	
$Ls_{(max)}$	79.2 dB	2022-03-11 13:51:18	--- dB		--- dB	
$LS_{(min)}$	46.0 dB	2022-03-11 13:51:43	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		102.4 dB	2022-03-11 13:51:18

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

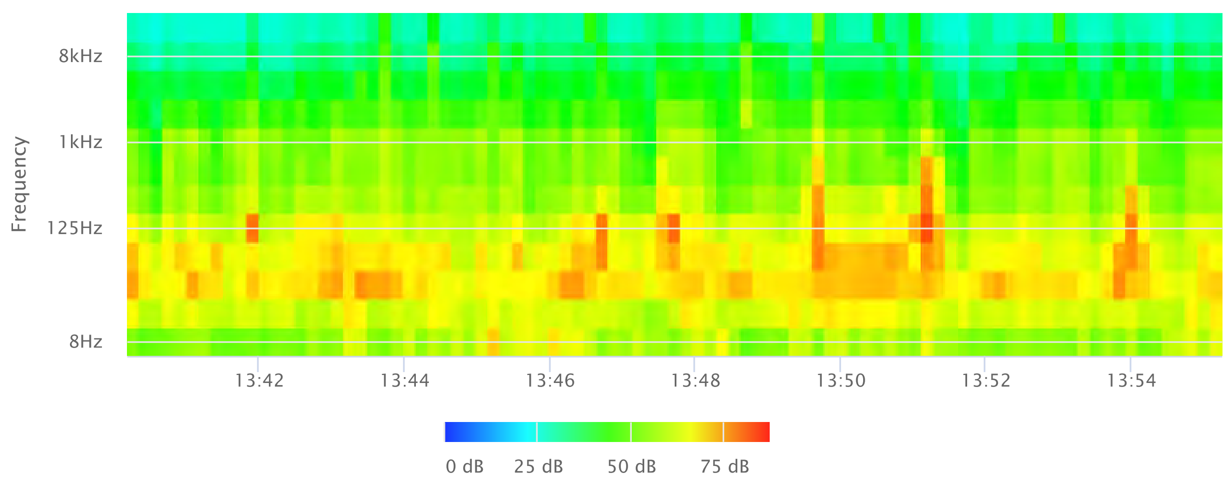
Statistics

LAS 2.0	68.6 dB
LAS 8.0	63.3 dB
LAS 25.0	60.3 dB
LAS 50.0	57.6 dB
LAS 66.6	55.8 dB
LAS 90.0	52.2 dB

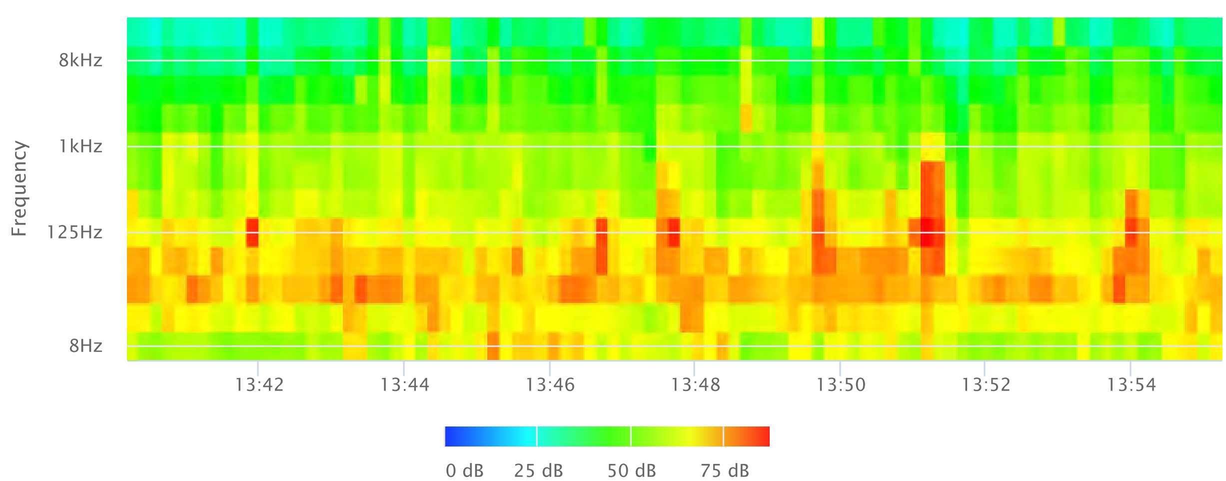
Time History



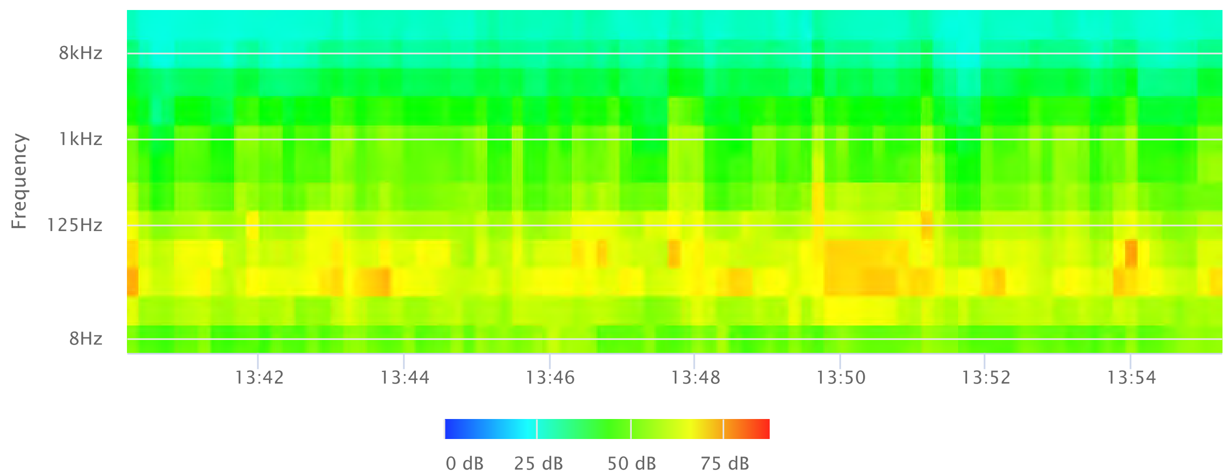
OBA 1/1 Leq



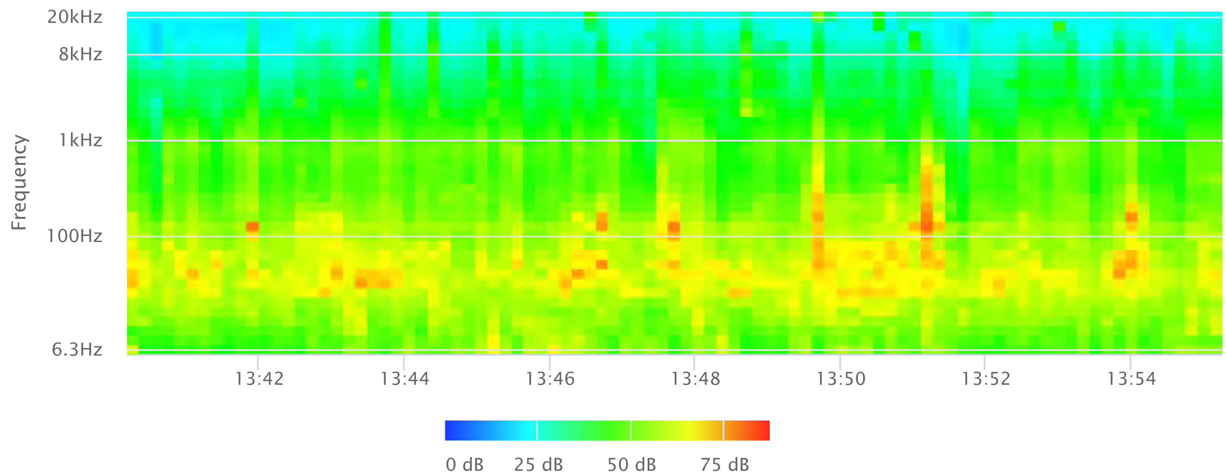
OBA 1/1 Lmax



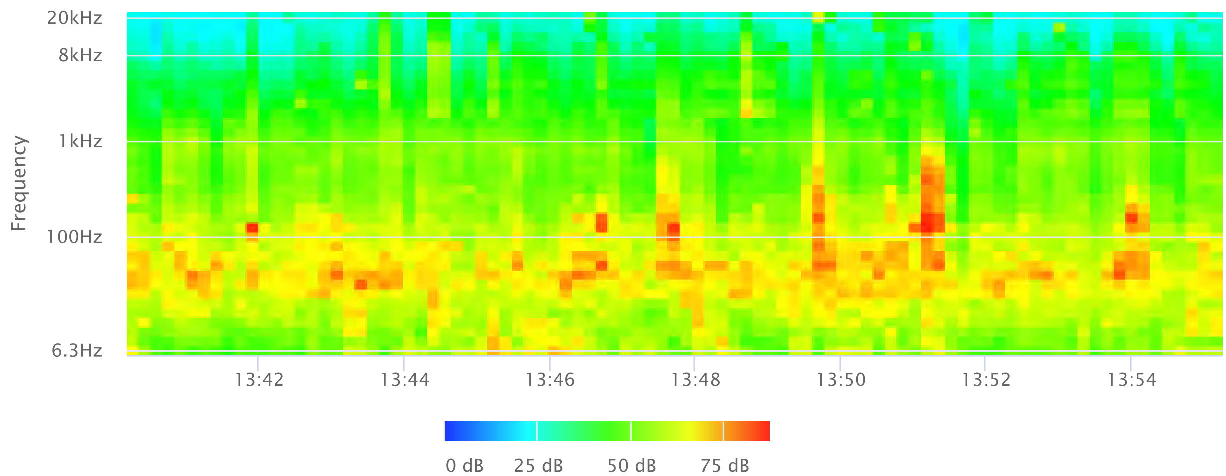
OBA 1/1 Lmin



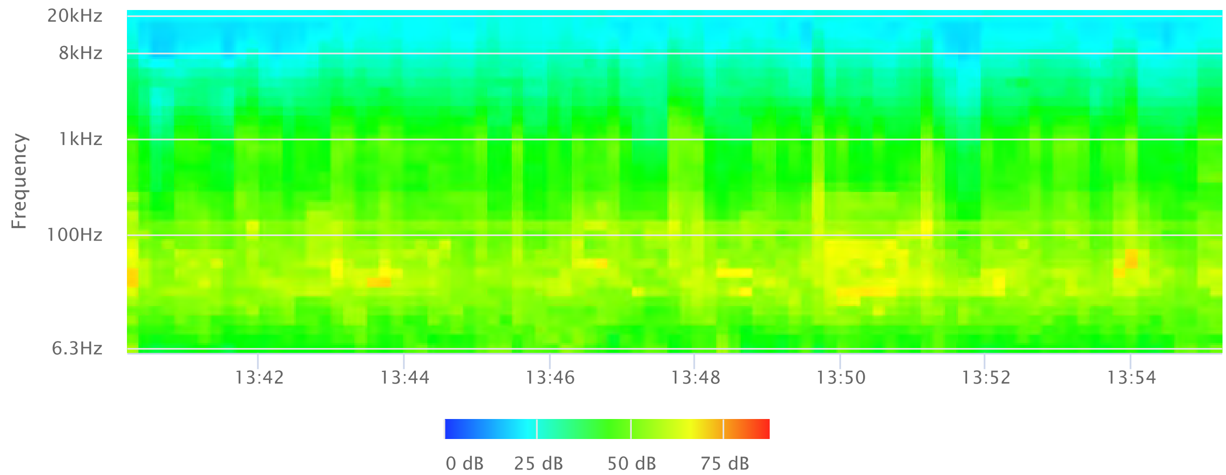
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:42
13:44
13:46
13:48
13:50
13:52
13:54
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: RIOS Project, City of Palm Springs **Date:** March 11, 2022

Project #: 19476

Noise Measurement #: STNM5 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 622 N Palm Canyon Drive, Palm Springs, CA 92262

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: E Granvia Valmonte to south w/ art gallery & associated parking further south, hotel & restaurant uses to north w/ associated parking/driveway, & N Palm Canyon Drive to west.

Weather: Clear skies, sunshine. Sunset: 5:51 PM **Settings:** SLOW FAST

Temperature: 70 deg F **Wind:** 8 mph **Humidity:** 5% **Terrain:** Flat

Start Time: 2:06 PM **End Time:** 2:21 PM **Run Time:**

Leq: 58.5 dB

Lmax 78.7 dB

L2 65.0 dB

L8 60.8 dB

L25 57.0 dB

L50 54.8 dB

Primary Noise Source: Traffic noise from the 18 vehicles passing microphone traveling along E Granvia Valmonte during 15 minute measurement. Traffic noise from other roads.

Secondary Noise Sources: Bird song, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE).

NOISE METER: SoundTrack LXT Class 1
MAKE: Larson Davis
MODEL: LXT1
SERIAL NUMBER: 3099
FACTORY CALIBRATION DATE: 11/17/2021
FIELD CALIBRATION DATE: 3/11/2022

CALIBRATOR: Larson Davis CA 250
MAKE: Larson Davis
MODEL: CA 250
SERIAL NUMBER: 2723
FACTORY CALIBRATION DATE: 11/18/2021

Noise Measurement
Field Data

PHOTOS:

STNM5 looking W along E Granvia Valmonte towards N Palm Canyon Drive intersection.

STNM5 looking S across E Granvia Valmonte towards NE cormer of building 550 N Palm Canyon Drive, Palm Springs.

Summary		
File Name on Meter	LxT_Data.080.s	
File Name on PC	LxT_0003099-20220311 140633-LxT_Data.080.ldbin	
Serial Number	0003099	
Model	SoundTrack LxT®	
Firmware Version	2.404	
User	Ian Edward Gallagher	
Location	STNM5 33°49'55.03"N 116°32'46.68"W	
Job Description	!5 minute noise measurement (1 x 15 minutes)	
Note	Ganddini 19476 RIOS Project, Palm Springs	
Measurement		
Start	2022-03-11 14:06:33	
Stop	2022-03-11 14:21:33	
Duration	00:15:00.0	
Run Time	00:15:00.0	
Pause	00:00:00.0	
Pre-Calibration	2022-03-11 14:06:05	
Post-Calibration	None	
Overall Settings		
RMS Weight	A Weighting	
Peak Weight	Z Weighting	
Detector	Slow	
Preamplifier	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Frequency Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Overload	122.9 dB	
Results		
LAeq	58.5	
LAE	88.0	
EA	70.321 µPa²h	
EA8	2.250 mPa²h	
EA40	11.251 mPa²h	
LZpeak (max)	2022-03-11 14:13:44	101.3 dB
LASmax	2022-03-11 14:13:43	78.7 dB
LASmin	2022-03-11 14:11:23	47.6 dB

		Statistics	
LCeq	70.3 dB	**LA2.00**	65.0 dB
LAeq	58.5 dB	**LA8.00**	60.8 dB
LCeq - LAeq	11.8 dB	**LA25.00**	57.0 dB
LAIeq	61.0 dB	**LA50.00**	54.8 dB
LAeq	58.5 dB	**LA66.60**	53.9 dB
LAIeq - LAeq	2.6 dB	**LA90.00**	51.6 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.080.s	Computer's File Name	LxT_0003099-20220311 140633-LxT_Data.080.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM5 33°49'55.03"N 116°32'46.68"W
Job Description	!5 minute noise measurement (1 x 15 minutes)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 14:06:33	Duration	0:15:00.0		
End Time	2022-03-11 14:21:33	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	58.5 dB		
LAE	88.0 dB	SEA	--- dB
EA	70.3 µPa²h	LAFTM5	64.0 dB
EA8	2.3 mPa²h		
EA40	11.3 mPa²h		
LZ_{peak}	101.3 dB	2022-03-11 14:13:44	
LAS_{max}	78.7 dB	2022-03-11 14:13:43	
LAS_{min}	47.6 dB	2022-03-11 14:11:23	
LA_{eq}	58.5 dB		
LC_{eq}	70.3 dB	LC_{eq} - LA_{eq}	11.8 dB
LAI_{eq}	61.0 dB	LAI_{eq} - LA_{eq}	2.6 dB

Exceedances	Count	Duration
LAS > 65.0 dB	5	0:00:26.3
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

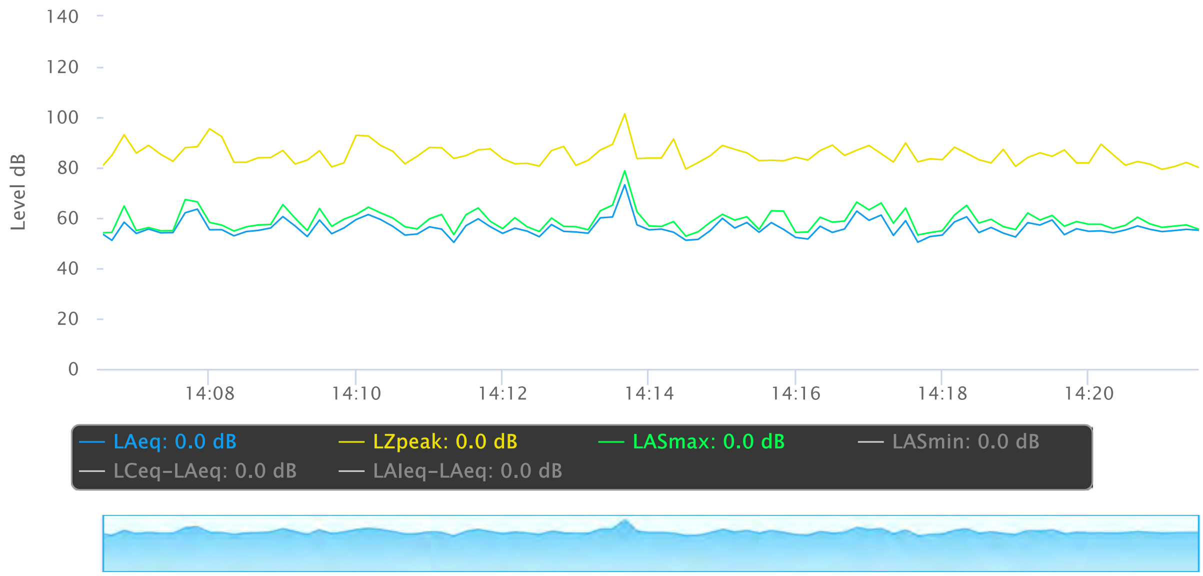
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.5 dB		70.3 dB		--- dB	
$Ls_{(max)}$	78.7 dB	2022-03-11 14:13:43	--- dB		--- dB	
$LS_{(min)}$	47.6 dB	2022-03-11 14:11:23	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		101.3 dB	2022-03-11 14:13:44

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

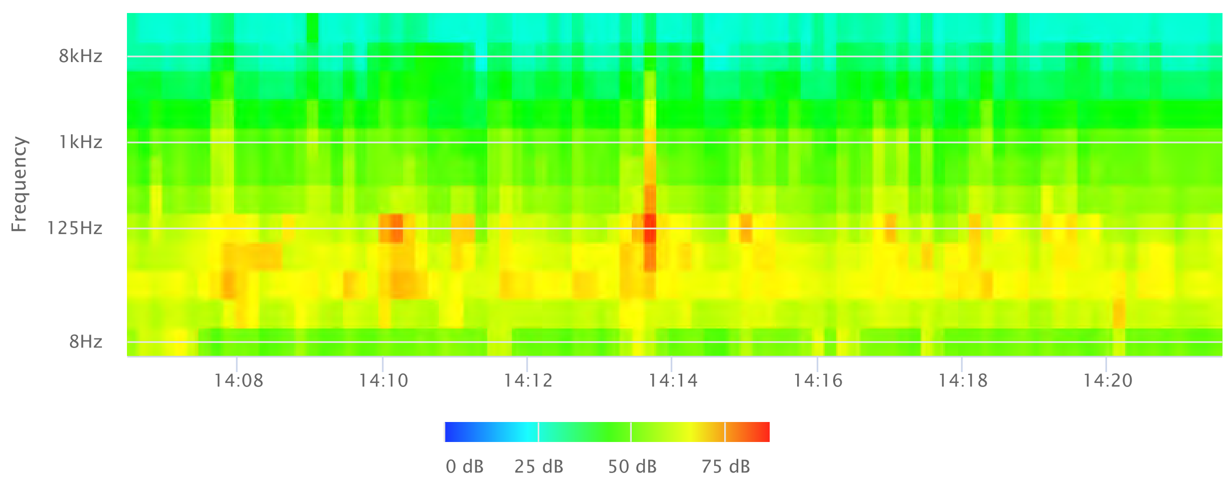
Statistics

LAS 2.0	65.0 dB
LAS 8.0	60.8 dB
LAS 25.0	57.0 dB
LAS 50.0	54.8 dB
LAS 66.6	53.9 dB
LAS 90.0	51.6 dB

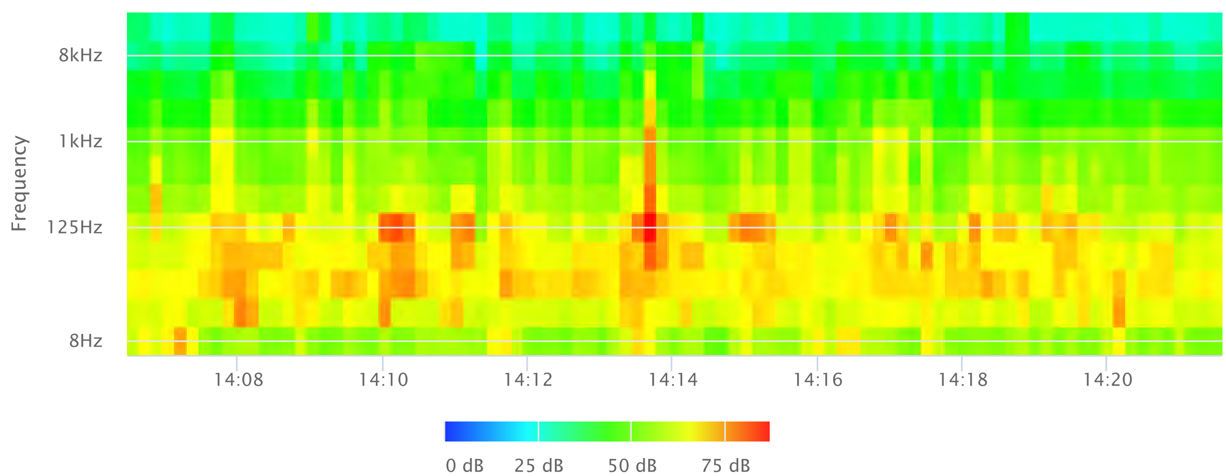
Time History



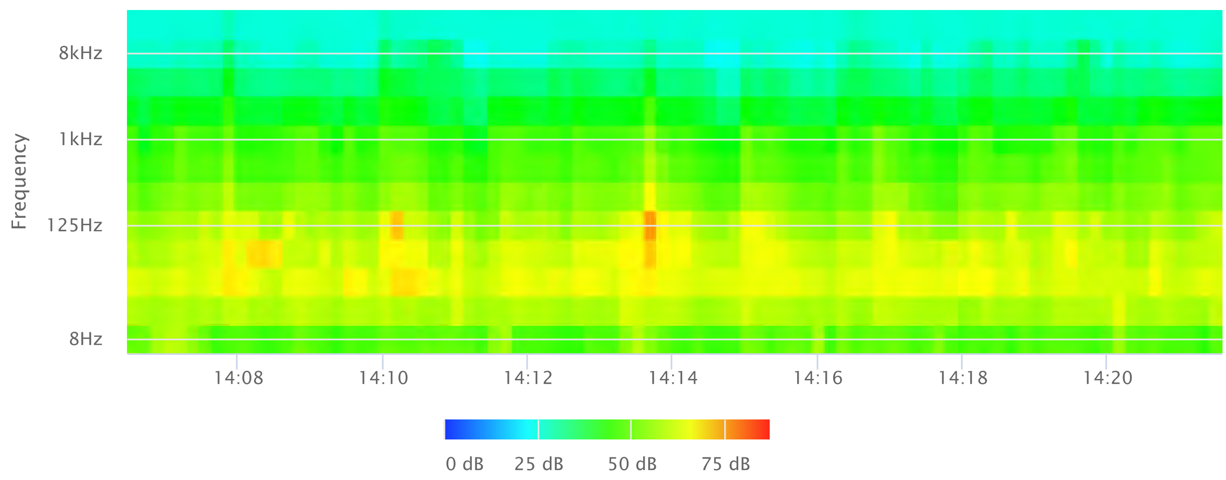
OBA 1/1 Leq



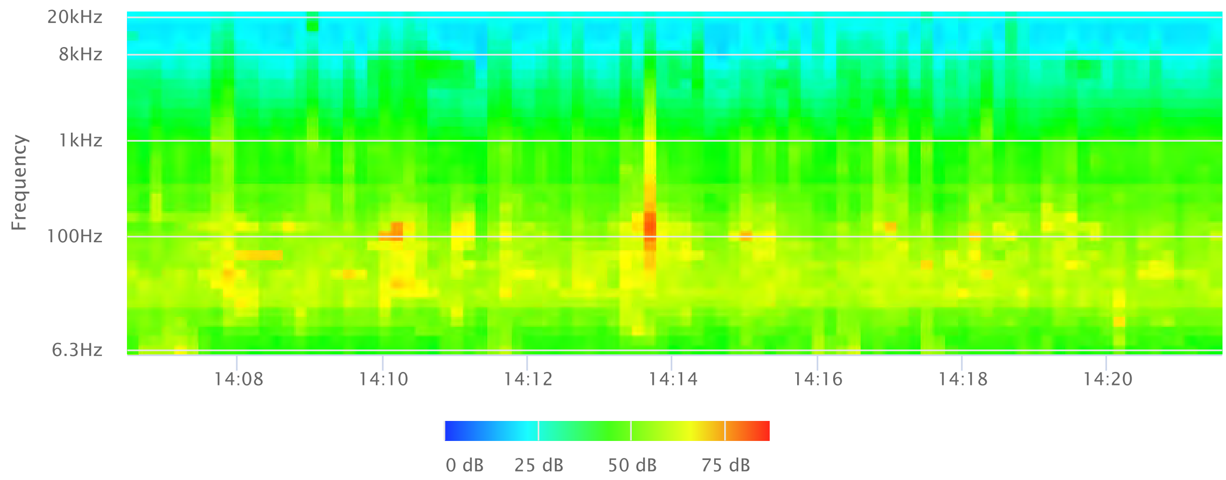
OBA 1/1 Lmax



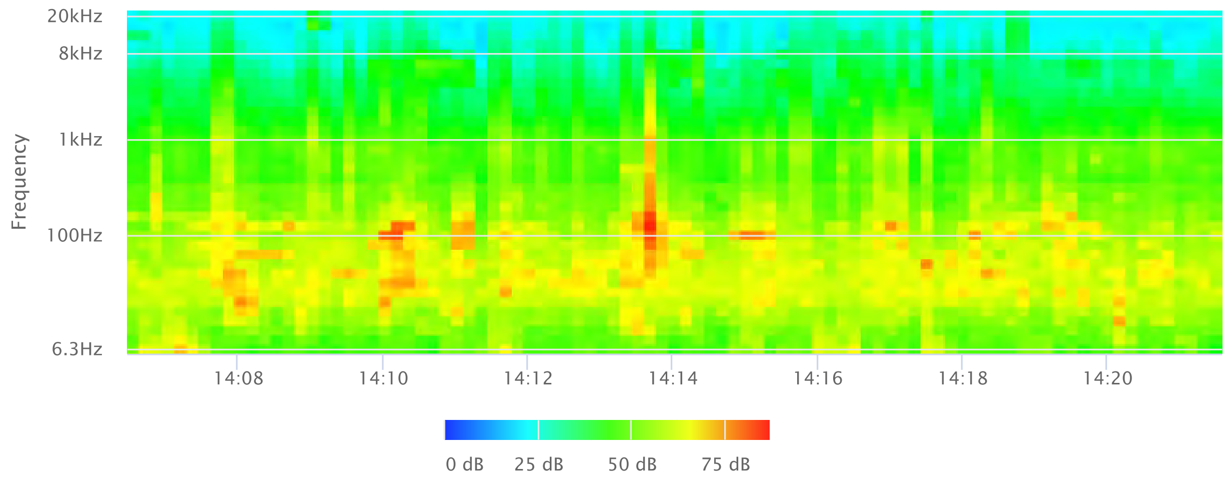
OBA 1/1 Lmin



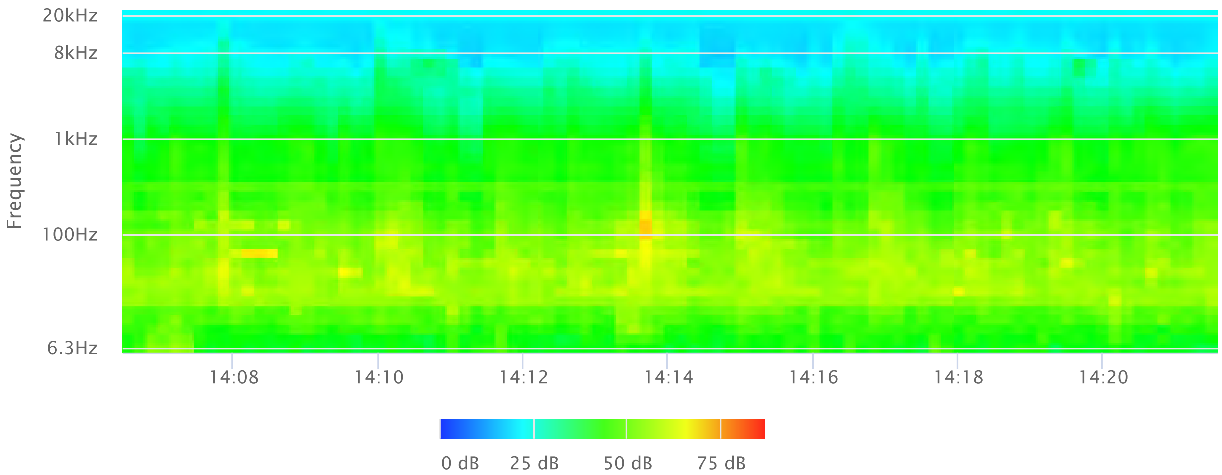
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
14:08
14:10
14:12
14:14
14:16
14:18
14:20
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: RIOS Project, City of Palm Springs **Date:** March 11, 2022

Project #: 19476

Noise Measurement #: LTNM1 Run Time: 24 hours (24 x 1 hours) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 600 Belardo Road, Palm Springs, CA 92262

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant lot with large rocks, trees & bushes & surrounded by alley to north, Belardo Rd to west, Chino Dr to south, & Palm Canyon Dr to east. Noise Measurement Site: Taken at NW corner of site, vacant site to south/southeast/east, vacant alley to north w/ multi-family residential further north, & Belardo Rd to west w/ single-fmaily residential further west.

Weather: Clear skies. Sunset/rise: 5:51 PM/ 6:02 AM **Settings:** SLOW FAST

Temperature: 54-86 deg F **Wind:** 2-8 mph **Humidity:** 5-25% **Terrain:** Flat

Start Time: 4:00 PM **End Time:** 4:00 PM **Run Time:**

Leq:	49.2	dB
Lmax	83.3	dB
L2	55.3	dB
L8	51.4	dB
L25	48.2	dB
L50	45.6	dB

Primary Noise Source: Traffic noise from vehicles traveling along N Palm Canyon Dr, W Chino Dr & Belardo Road

Secondary Noise Sources: Bird song by day, noise from pedestrians, leaf rustle from 8mph breeze, air traffic from Palm Springs Airport (to ENE). Residential ambiance.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/11/2022		

PHOTOS:

LTNM1 looking NW at microphone located in bush (~6 feet above ground).

LTNM1 looking SE from NW corner of site towards microphone located in bush.

Summary	
File Name on Meter	LxT_Data.081.s
File Name on PC	LxT_0003099-20220311 160000-LxT_Data.
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	LTNM1 33°49'54.11"N 116°32'53.67"W
Job Description	24 hour noise measurement (24 x 1 hours)
Note	Ganddini 19476 RIOS Project, Palm Springs

Measurement	
Start	2022-03-11 16:00:00
Stop	2022-03-12 16:00:00
Duration	24:00:00.0
Run Time	24:00:00.0
Pause	00:00:00.0
Pre-Calibration	2022-03-11 15:30:06
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	122.8 dB

Results		
LAeq	49.2	
LAE	98.6	
EA	801.356 µPa²h	
EA8	267.119 µPa²h	
EA40	1.336 mPa²h	
LApeak (max)	2022-03-11 23:39:40	96.3 dB
LASmax	2022-03-11 23:39:40	83.3 dB
LASmin	2022-03-12 02:59:52	34.7 dB

		Statistics	
LCeq	62.6 dB	**LA2.00**	55.3 dB
LAeq	49.2 dB	**LA8.00**	51.4 dB
LCeq - LAeq	13.4 dB	**LA25.00**	48.2 dB
LAIeq	51.8 dB	**LA50.00**	45.6 dB
LAeq	49.2 dB	**LA90.00**	40.8 dB
LAIeq - LAeq	2.6 dB	**LA99.00**	37.5 dB
Overload Count	0		

Record #	Date	Time	Run Duration	Run Time	Pause	LAeq	LASmin	LASmin Time	LASmax	LASmax Time	LAS2.00	LAS8.00	LAS25.00	LAS50.00	LAS90.00	LAS99.00
1	2022-03-11	16:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.4	38.4	16:06:45	67.8	16:18:06	54.6	51.3	48.4	46.5	43.2	41.1
2	2022-03-11	17:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.1	37.2	17:51:29	66.8	17:02:51	55.0	50.6	47.3	45.3	41.6	38.5
3	2022-03-11	18:00:00	01:00:00.0	01:00:00.0	00:00:00.0	44.7	37.4	18:02:12	63.8	18:56:21	51.9	47.7	44.2	42.3	39.8	38.4
4	2022-03-11	19:00:00	01:00:00.0	01:00:00.0	00:00:00.0	46.5	38.0	19:05:22	67.5	19:04:53	52.2	48.9	46.6	44.4	41.0	39.4
5	2022-03-11	20:00:00	01:00:00.0	01:00:00.0	00:00:00.0	53.7	42.4	20:01:22	76.4	20:50:09	60.5	54.5	50.5	48.6	45.9	43.8
6	2022-03-11	21:00:00	01:00:00.0	01:00:00.0	00:00:00.0	52.0	45.0	21:32:05	71.8	21:34:52	58.0	53.7	51.1	49.3	46.9	45.7
7	2022-03-11	22:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.7	39.8	22:27:54	63.4	22:04:51	55.5	51.4	48.9	47.1	44.2	41.7
8	2022-03-11	23:00:00	01:00:00.0	01:00:00.0	00:00:00.0	55.1	39.1	23:56:11	83.3	23:39:40	62.7	53.0	49.7	47.3	43.4	40.5
9	2022-03-12	00:00:00	01:00:00.0	01:00:00.0	00:00:00.0	47.0	37.6	00:48:44	64.3	00:41:17	53.6	49.8	46.9	44.8	41.7	39.7
10	2022-03-12	01:00:00	01:00:00.0	01:00:00.0	00:00:00.0	47.6	38.0	01:58:10	69.1	01:33:31	53.9	49.8	46.9	44.6	41.0	39.0
11	2022-03-12	02:00:00	01:00:00.0	01:00:00.0	00:00:00.0	46.2	34.7	02:59:52	66.2	02:20:59	54.2	49.2	44.7	41.6	38.6	36.6
12	2022-03-12	03:00:00	01:00:00.0	01:00:00.0	00:00:00.0	41.9	34.7	03:05:29	53.9	03:21:43	48.9	45.7	41.9	39.8	36.7	35.4
13	2022-03-12	04:00:00	01:00:00.0	01:00:00.0	00:00:00.0	44.1	36.7	04:18:50	59.1	04:52:17	51.0	47.1	43.9	41.9	38.8	37.3
14	2022-03-12	05:00:00	01:00:00.0	01:00:00.0	00:00:00.0	47.8	36.9	05:11:28	64.3	05:51:17	53.5	50.9	48.6	46.2	40.4	38.4
15	2022-03-12	06:00:00	01:00:00.0	01:00:00.0	00:00:00.0	50.7	41.8	06:08:10	71.1	06:27:35	55.5	53.3	51.0	48.7	45.1	43.1
16	2022-03-12	07:00:00	01:00:00.0	01:00:00.0	00:00:00.0	50.1	39.7	07:55:33	67.6	07:16:20	57.0	52.9	50.1	48.1	44.5	41.7
17	2022-03-12	08:00:00	01:00:00.0	01:00:00.0	00:00:00.0	47.0	37.5	08:57:54	61.3	08:13:04	54.1	50.0	47.2	45.0	41.3	39.4
18	2022-03-12	09:00:00	01:00:00.0	01:00:00.0	00:00:00.0	50.0	36.8	09:12:52	76.1	09:18:19	56.2	51.1	46.8	44.3	40.6	38.3
19	2022-03-12	10:00:00	01:00:00.0	01:00:00.0	00:00:00.0	46.7	37.3	10:32:07	62.5	10:20:04	53.1	50.1	46.9	44.6	41.6	39.7
20	2022-03-12	11:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.4	39.1	11:42:09	65.9	11:33:25	56.3	51.7	48.0	45.6	42.5	40.5
21	2022-03-12	12:00:00	01:00:00.0	01:00:00.0	00:00:00.0	47.7	38.8	12:35:25	67.6	12:59:27	54.9	50.1	46.6	44.4	41.9	40.2
22	2022-03-12	13:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.1	39.5	13:18:51	67.8	13:14:03	55.7	51.5	47.6	45.1	42.0	40.3
23	2022-03-12	14:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.6	39.9	14:26:03	69.3	14:56:02	54.5	51.7	48.3	46.1	43.1	41.2
24	2022-03-12	15:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.1	39.2	15:59:59	65.5	15:16:00	54.8	51.4	48.1	45.9	43.2	41.3

Measurement Report

Report Summary

Meter's File Name	LxT_Data.081.s	Computer's File Name	LxT_0003099-20220311 160000-LxT_Data.081.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	LTNM1 33°49'54.11"N 116°32'53.67"W
Job Description	24 hour noise measurement (24 x 1 hours)		
Note	Ganddini 19476 RIOS Project, Palm Springs		

Start Time	2022-03-11 16:00:00	Duration	24:00:00.0		
End Time	2022-03-12 16:00:00	Run Time	24:00:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	49.2 dB		
LAE	98.6 dB	SEA	--- dB
EA	801.4 μPa²h	LAFTM5	54.0 dB
EA8	267.1 μPa²h		
EA40	1.3 mPa²h		
LA_{peak}	96.3 dB	2022-03-11 23:39:40	
LAS_{max}	83.3 dB	2022-03-11 23:39:40	
LAS_{min}	34.7 dB	2022-03-12 02:59:52	
LA_{eq}	49.2 dB		
LC_{eq}	62.6 dB	LC_{eq} - LA_{eq}	13.4 dB
LAI_{eq}	51.8 dB	LAI_{eq} - LA_{eq}	2.6 dB

Exceedances	Count	Duration
LAS > 65.0 dB	36	0:03:06.7
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	--- dB	--- dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	--- dB	--- dB	--- dB	--- dB

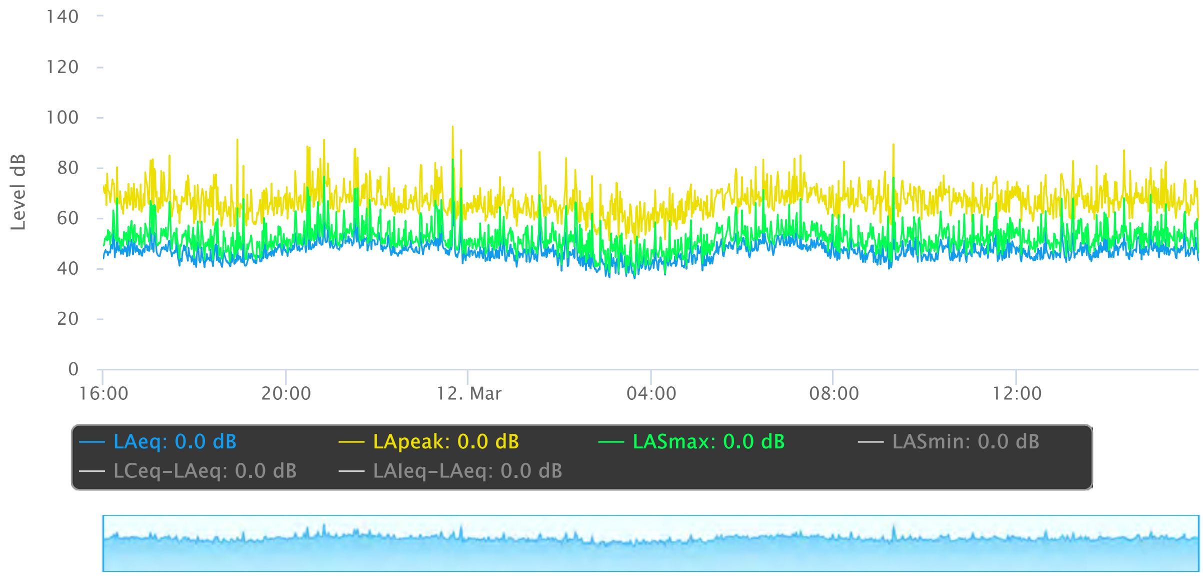
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	49.2 dB		62.6 dB		--- dB	
$Ls_{(max)}$	83.3 dB	2022-03-11 23:39:40	--- dB		--- dB	
$LS_{(min)}$	34.7 dB	2022-03-12 02:59:52	--- dB		--- dB	
$L_{Peak(max)}$	96.3 dB	2022-03-11 23:39:40	--- dB		--- dB	

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

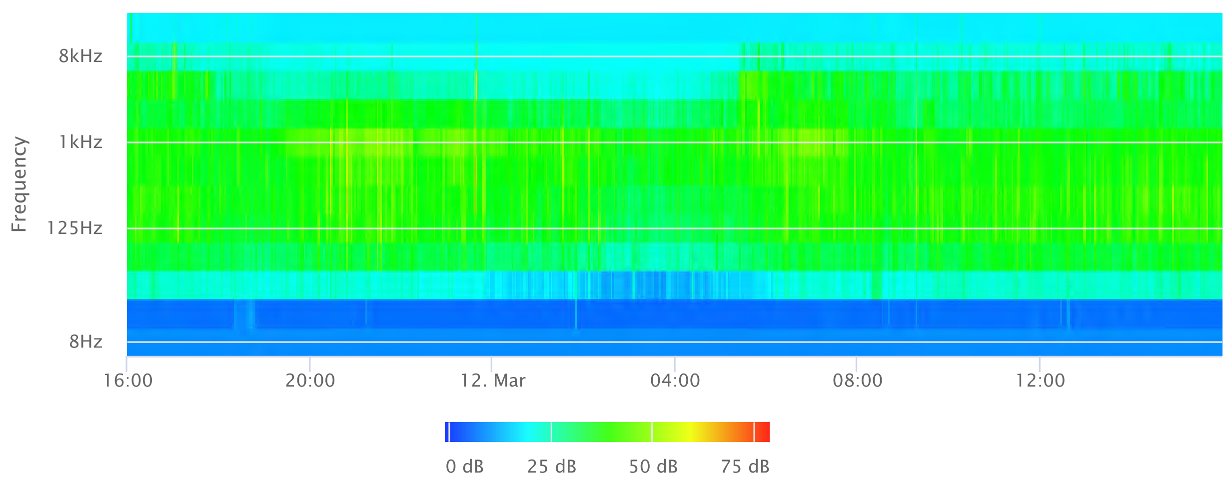
Statistics

LAS 2.0	55.3 dB
LAS 8.0	51.4 dB
LAS 25.0	48.2 dB
LAS 50.0	45.6 dB
LAS 90.0	40.8 dB
LAS 99.0	37.5 dB

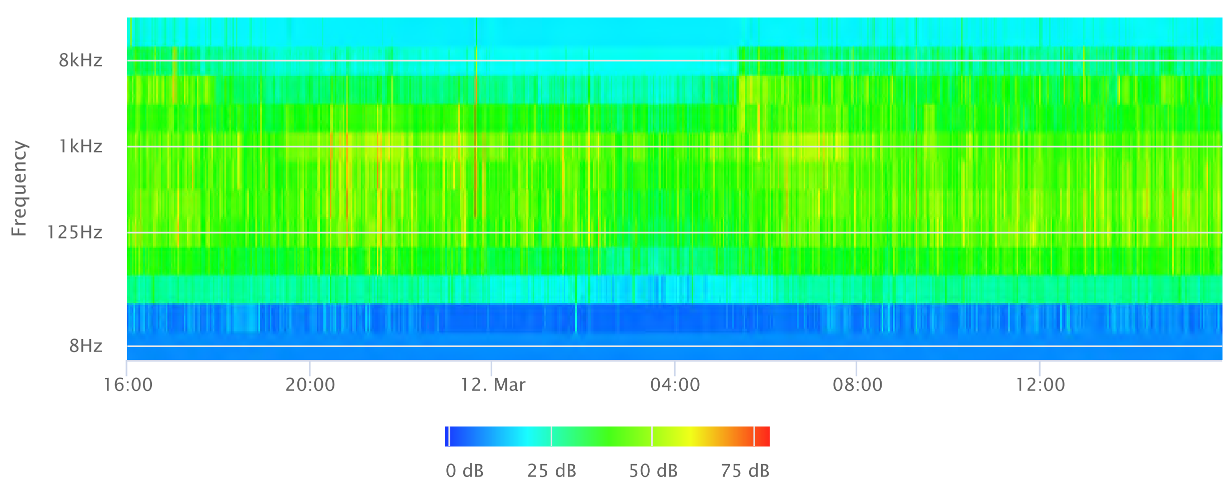
Time History



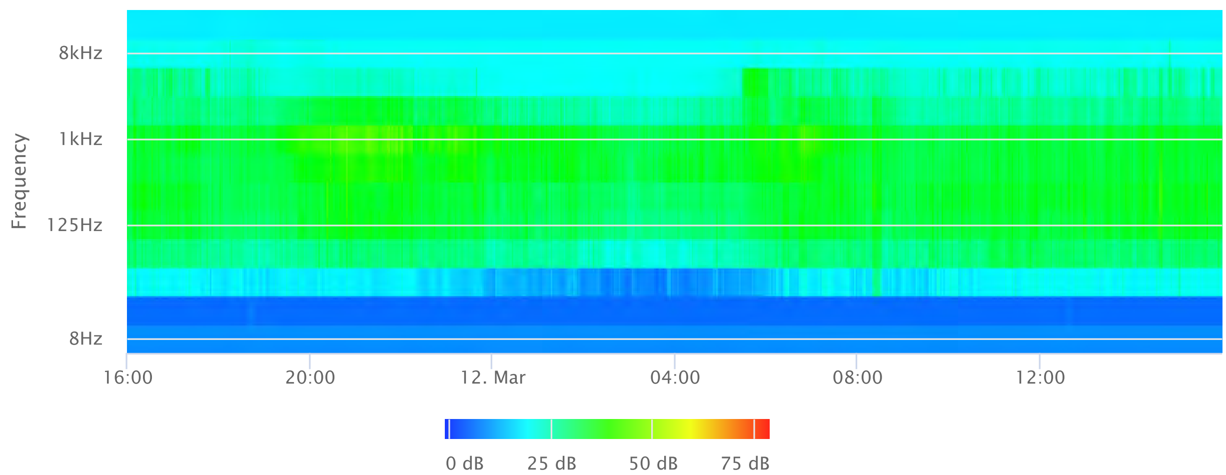
OBA 1/1 Leq



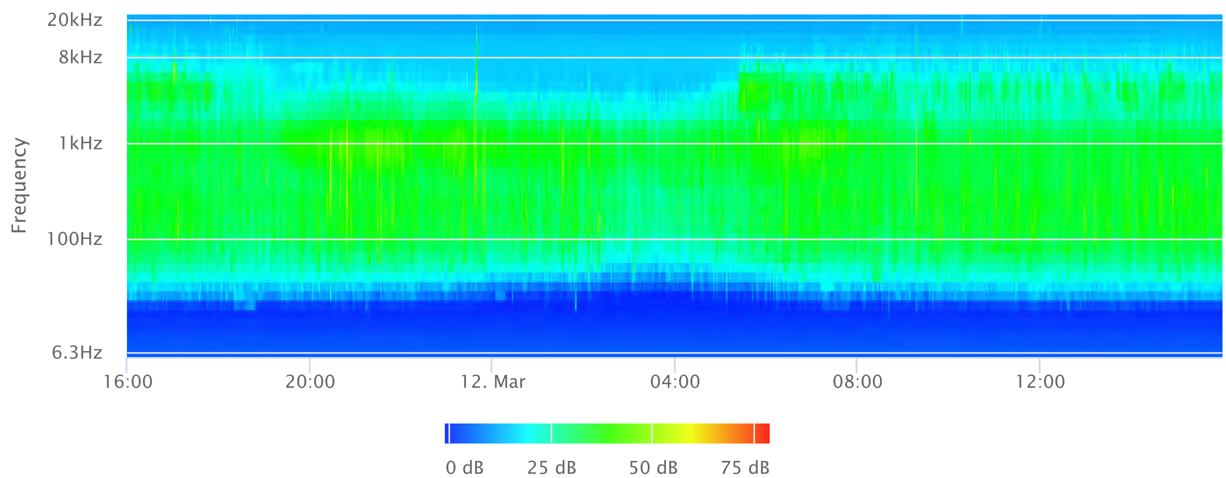
OBA 1/1 Lmax



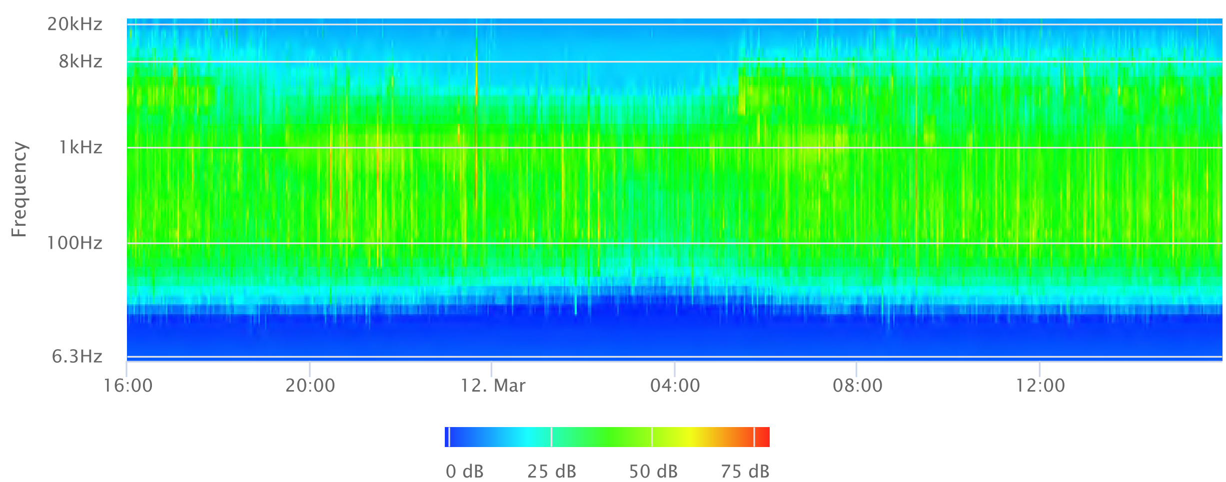
OBA 1/1 Lmin



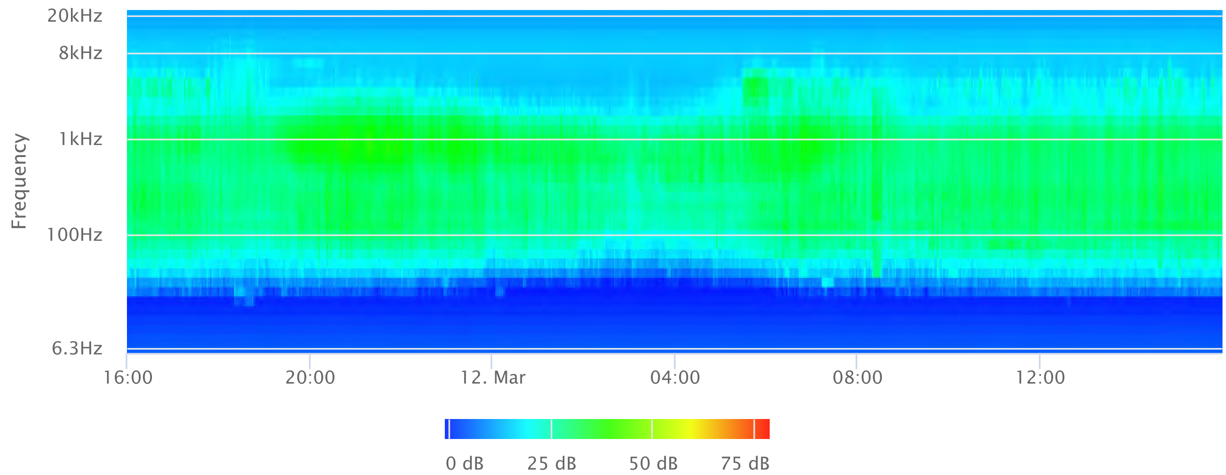
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
16:00
20:00
12. Mar
04:00
08:00
12:00
0 dB
25 dB
50 dB
75 dB

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Multi-Family Residential to North

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	154	40	0.40	-9.8	-4.0	75.2	71.2
Scrapers	1	84	154	40	0.40	-9.8	-4.0	74.2	70.2
Tractors/Loaders/Backhoes	1	84	154	40	0.40	-9.8	-4.0	74.2	70.2
							Log Sum	79.4	75.4
Grading									
Grader	1	85	154	40	0.40	-9.8	-4.0	75.2	71.2
Rubber Tired Dozers	1	82	154	40	0.40	-9.8	-4.0	72.2	68.2
Tractors/Loaders/Backhoes	2	84	154	40	0.80	-9.8	-1.0	74.2	73.3
							Log Sum	78.8	76.1
Building Construction									
Cranes	1	81	154	16	0.16	-9.8	-8.0	71.2	63.3
Forklifts [2]	2	48	154	40	0.80	-9.8	-1.0	38.2	37.3
Generator Sets	1	81	154	50	0.50	-9.8	-3.0	71.2	68.2
Welders	3	74	154	40	1.20	-9.8	0.8	64.2	65.0
Tractors/Loaders/Backhoes	1	84	154	40	0.40	-9.8	-4.0	74.2	70.2
							Log Sum	77.5	73.5
Paving									
Cement and Mortar Mixer	1	79	154	40	0.4	-9.8	-4.0	69.2	65.2
Pavers	1	77	154	50	0.50	-9.8	-3.0	67.2	64.2
Paving Equipment	1	77	154	50	0.50	-9.8	-3.0	67.2	64.2
Tractors/Loaders/Backhoes	1	84	154	40	0.40	-9.8	-4.0	74.2	70.2
Rollers	2	80	154	20	0.40	-9.8	-4.0	70.2	66.2
							Log Sum	73.2	73.7
Architectural Coating									
Air Compressors	1	78	154	40	0.40	-9.8	-4.0	68.2	64.2
							Log Sum	68.2	64.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-Family Residential to Northwest

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	312	40	0.40	-15.9	-4.0	69.1	65.1
Scrapers	1	84	312	40	0.40	-15.9	-4.0	68.1	64.1
Tractors/Loaders/Backhoes	1	84	312	40	0.40	-15.9	-4.0	68.1	64.1
							Log Sum	73.2	69.2
Grading									
Grader	1	85	312	40	0.40	-15.9	-4.0	69.1	65.1
Rubber Tired Dozers	1	82	312	40	0.40	-15.9	-4.0	66.1	62.1
Tractors/Loaders/Backhoes	2	84	312	40	0.80	-15.9	-1.0	68.1	67.1
							Log Sum	72.7	70.0
Building Construction									
Cranes	1	81	312	16	0.16	-15.9	-8.0	65.1	57.1
Forklifts [2]	2	48	312	40	0.80	-15.9	-1.0	32.1	31.1
Generator Sets	1	81	312	50	0.50	-15.9	-3.0	65.1	62.1
Welders	3	74	312	40	1.20	-15.9	0.8	58.1	58.9
Tractors/Loaders/Backhoes	1	84	312	40	0.40	-15.9	-4.0	68.1	64.1
							Log Sum	71.3	67.4
Paving									
Cement and Mortar Mixer	1	79	312	40	0.4	-15.9	-4.0	63.1	59.1
Pavers	1	77	312	50	0.50	-15.9	-3.0	61.1	58.1
Paving Equipment	1	77	312	50	0.50	-15.9	-3.0	61.1	58.1
Tractors/Loaders/Backhoes	1	84	312	40	0.40	-15.9	-4.0	68.1	64.1
Rollers	2	80	312	20	0.40	-15.9	-4.0	64.1	60.1
							Log Sum	67.1	67.6
Architectural Coating									
Air Compressors	1	78	312	40	0.40	-15.9	-4.0	62.1	58.1
							Log Sum	62.1	58.1

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-Family Residential to West

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	269	40	0.40	-14.6	-4.0	70.4	66.4
Scrapers	1	84	269	40	0.40	-14.6	-4.0	69.4	65.4
Tractors/Loaders/Backhoes	1	84	269	40	0.40	-14.6	-4.0	69.4	65.4
							Log Sum	74.5	70.5
Grading									
Grader	1	85	269	40	0.40	-14.6	-4.0	70.4	66.4
Rubber Tired Dozers	1	82	269	40	0.40	-14.6	-4.0	67.4	63.4
Tractors/Loaders/Backhoes	2	84	269	40	0.80	-14.6	-1.0	69.4	68.4
							Log Sum	74.0	71.3
Building Construction									
Cranes	1	81	269	16	0.16	-14.6	-8.0	66.4	58.4
Forklifts [2]	2	48	269	40	0.80	-14.6	-1.0	33.4	32.4
Generator Sets	1	81	269	50	0.50	-14.6	-3.0	66.4	63.4
Welders	3	74	269	40	1.20	-14.6	0.8	59.4	60.2
Tractors/Loaders/Backhoes	1	84	269	40	0.40	-14.6	-4.0	69.4	65.4
							Log Sum	72.6	68.7
Paving									
Cement and Mortar Mixer	1	79	269	40	0.4	-14.6	-4.0	64.4	60.4
Pavers	1	77	269	50	0.50	-14.6	-3.0	62.4	59.4
Paving Equipment	1	77	269	50	0.50	-14.6	-3.0	62.4	59.4
Tractors/Loaders/Backhoes	1	84	269	40	0.40	-14.6	-4.0	69.4	65.4
Rollers	2	80	269	20	0.40	-14.6	-4.0	65.4	61.4
							Log Sum	68.4	68.9
Architectural Coating									
Air Compressors	1	78	269	40	0.40	-14.6	-4.0	63.4	59.4
							Log Sum	63.4	59.4

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Single-Family Residential to Southwest

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	325	40	0.40	-16.3	-4.0	68.7	64.8
Scrapers	1	84	325	40	0.40	-16.3	-4.0	67.7	63.8
Tractors/Loaders/Backhoes	1	84	325	40	0.40	-16.3	-4.0	67.7	63.8
							Log Sum	72.9	68.9
Grading									
Grader	1	85	325	40	0.40	-16.3	-4.0	68.7	64.8
Rubber Tired Dozers	1	82	325	40	0.40	-16.3	-4.0	65.7	61.8
Tractors/Loaders/Backhoes	2	84	325	40	0.80	-16.3	-1.0	67.7	66.8
							Log Sum	72.4	69.7
Building Construction									
Cranes	1	81	325	16	0.16	-16.3	-8.0	64.7	56.8
Forklifts [2]	2	48	325	40	0.80	-16.3	-1.0	31.7	30.8
Generator Sets	1	81	325	50	0.50	-16.3	-3.0	64.7	61.7
Welders	3	74	325	40	1.20	-16.3	0.8	57.7	58.5
Tractors/Loaders/Backhoes	1	84	325	40	0.40	-16.3	-4.0	67.7	63.8
							Log Sum	71.0	67.0
Paving									
Cement and Mortar Mixer	1	79	325	40	0.4	-16.3	-4.0	62.7	58.8
Pavers	1	77	325	50	0.50	-16.3	-3.0	60.7	57.7
Paving Equipment	1	77	325	50	0.50	-16.3	-3.0	60.7	57.7
Tractors/Loaders/Backhoes	1	84	325	40	0.40	-16.3	-4.0	67.7	63.8
Rollers	2	80	325	20	0.40	-16.3	-4.0	63.7	59.8
							Log Sum	66.8	67.2
Architectural Coating									
Air Compressors	1	78	325	40	0.40	-16.3	-4.0	61.7	57.8
							Log Sum	61.7	57.8

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Rehabilitation Center to South

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	172	40	0.40	-10.7	-4.0	74.3	70.3
Scrapers	1	84	172	40	0.40	-10.7	-4.0	73.3	69.3
Tractors/Loaders/Backhoes	1	84	172	40	0.40	-10.7	-4.0	73.3	69.3
							Log Sum	78.4	74.4
Grading									
Grader	1	85	172	40	0.40	-10.7	-4.0	74.3	70.3
Rubber Tired Dozers	1	82	172	40	0.40	-10.7	-4.0	71.3	67.3
Tractors/Loaders/Backhoes	2	84	172	40	0.80	-10.7	-1.0	73.3	72.3
							Log Sum	77.9	75.2
Building Construction									
Cranes	1	81	172	16	0.16	-10.7	-8.0	70.3	62.3
Forklifts [2]	2	48	172	40	0.80	-10.7	-1.0	37.3	36.3
Generator Sets	1	81	172	50	0.50	-10.7	-3.0	70.3	67.3
Welders	3	74	172	40	1.20	-10.7	0.8	63.3	64.1
Tractors/Loaders/Backhoes	1	84	172	40	0.40	-10.7	-4.0	73.3	69.3
							Log Sum	76.5	72.6
Paving									
Cement and Mortar Mixer	1	79	172	40	0.4	-10.7	-4.0	68.3	64.3
Pavers	1	77	172	50	0.50	-10.7	-3.0	66.3	63.3
Paving Equipment	1	77	172	50	0.50	-10.7	-3.0	66.3	63.3
Tractors/Loaders/Backhoes	1	84	172	40	0.40	-10.7	-4.0	73.3	69.3
Rollers	2	80	172	20	0.40	-10.7	-4.0	69.3	65.3
							Log Sum	72.3	72.7
Architectural Coating									
Air Compressors	1	78	172	40	0.40	-10.7	-4.0	67.3	63.3
							Log Sum	67.3	63.3

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Art Gallery to East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	300	40	0.40	-15.6	-4.0	69.4	65.5
Scrapers	1	84	300	40	0.40	-15.6	-4.0	68.4	64.5
Tractors/Loaders/Backhoes	1	84	300	40	0.40	-15.6	-4.0	68.4	64.5
							Log Sum	73.6	69.6
Grading									
Grader	1	85	300	40	0.40	-15.6	-4.0	69.4	65.5
Rubber Tired Dozers	1	82	300	40	0.40	-15.6	-4.0	66.4	62.5
Tractors/Loaders/Backhoes	2	84	300	40	0.80	-15.6	-1.0	68.4	67.5
							Log Sum	73.0	70.4
Building Construction									
Cranes	1	81	300	16	0.16	-15.6	-8.0	65.4	57.5
Forklifts [2]	2	48	300	40	0.80	-15.6	-1.0	32.4	31.5
Generator Sets	1	81	300	50	0.50	-15.6	-3.0	65.4	62.4
Welders	3	74	300	40	1.20	-15.6	0.8	58.4	59.2
Tractors/Loaders/Backhoes	1	84	300	40	0.40	-15.6	-4.0	68.4	64.5
							Log Sum	71.7	67.7
Paving									
Cement and Mortar Mixer	1	79	300	40	0.4	-15.6	-4.0	63.4	59.5
Pavers	1	77	300	50	0.50	-15.6	-3.0	61.4	58.4
Paving Equipment	1	77	300	50	0.50	-15.6	-3.0	61.4	58.4
Tractors/Loaders/Backhoes	1	84	300	40	0.40	-15.6	-4.0	68.4	64.5
Rollers	2	80	300	20	0.40	-15.6	-4.0	64.4	60.5
							Log Sum	67.5	67.9
Architectural Coating									
Air Compressors	1	78	300	40	0.40	-15.6	-4.0	62.4	58.5
							Log Sum	62.4	58.5

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Hotel to Northeast

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Site Preparation									
Grader	1	85	430	40	0.40	-18.7	-4.0	66.3	62.3
Scrapers	1	84	430	40	0.40	-18.7	-4.0	65.3	61.3
Tractors/Loaders/Backhoes	1	84	430	40	0.40	-18.7	-4.0	65.3	61.3
							Log Sum	70.4	66.5
Grading									
Grader	1	85	430	40	0.40	-18.7	-4.0	66.3	62.3
Rubber Tired Dozers	1	82	430	40	0.40	-18.7	-4.0	63.3	59.3
Tractors/Loaders/Backhoes	2	84	430	40	0.80	-18.7	-1.0	65.3	64.3
							Log Sum	69.9	67.2
Building Construction									
Cranes	1	81	430	16	0.16	-18.7	-8.0	62.3	54.4
Forklifts [2]	2	48	430	40	0.80	-18.7	-1.0	29.3	28.3
Generator Sets	1	81	430	50	0.50	-18.7	-3.0	62.3	59.3
Welders	3	74	430	40	1.20	-18.7	0.8	55.3	56.1
Tractors/Loaders/Backhoes	1	84	430	40	0.40	-18.7	-4.0	65.3	61.3
							Log Sum	68.5	64.6
Paving									
Cement and Mortar Mixer	1	79	430	40	0.4	-18.7	-4.0	60.3	56.3
Pavers	1	77	430	50	0.50	-18.7	-3.0	58.3	55.3
Paving Equipment	1	77	430	50	0.50	-18.7	-3.0	58.3	55.3
Tractors/Loaders/Backhoes	1	84	430	40	0.40	-18.7	-4.0	65.3	61.3
Rollers	2	80	430	20	0.40	-18.7	-4.0	61.3	57.3
							Log Sum	64.3	64.8
Architectural Coating									
Air Compressors	1	78	430	40	0.40	-18.7	-4.0	59.3	55.3
							Log Sum	59.3	55.3

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006) (https://www.nrc.gov/docs/ML1805/ML18059A141.pdf)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

APPENDIX E

PROJECT GENERATED TRIPS FHWA WORKSHEETS

Existing Traffic Noise

1	:Id	
Belardo Road	:Road	
In the vicinity of the project site	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	3100
Speed	25
Distance	25
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	190.12	2.32	0.90	140.50	0.41	0.41	35.19	3.10	1.21
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	18.51	-0.62	-4.72	17.19	-8.13	-8.12	11.18	0.63	-3.47
Distance	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.89	48.41	50.46	54.57	40.90	47.06	48.56	49.66	51.71
	DAY LEQ	57.54		EVENING LEQ	55.44		NIGHT LEQ	54.95	

F	CNEL	62.02
	DAY LEQ	57.54

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

ganddini

Existing Plus Project Traffic Noise

1	:Id	
Belardo Road	:Road	
In the vicinity of the project site	:Segment	

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	3338
Speed	25
Distance	25
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime			Evening			Night		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	204.72	2.50	0.97	151.29	0.44	0.45	37.89	3.34	1.30
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	18.83	-0.30	-4.40	17.51	-7.81	-7.80	11.50	0.95	-3.15
Distance	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.21	48.73	50.78	54.89	41.22	47.38	48.88	49.98	52.03
	DAY LEQ	57.87		EVENING LEQ	55.76		NIGHT LEQ	55.27	

CNEL	62.34
DAY LEQ	57.87

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

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Existing Traffic Noise

2	:Id	
Palm Canyon Drive	:Road	
In the vicinity of the project site	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16600
Speed	35
Distance	55
Left Angle	-90
Right Angle	90

Noise Parameters	Daytime Autos	Daytime Medium Trucks	Daytime Heavy Trucks	Evening Autos	Evening Medium Trucks	Evening Heavy Trucks	Night Autos	Night Medium Trucks	Night Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	961.37	19.92	33.20	713.71	3.32	5.53	176.99	27.67	46.11
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	24.08	7.25	9.46	22.79	-0.54	1.68	16.73	8.67	10.89
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.71	56.59	64.03	62.41	48.81	56.25	56.36	58.02	65.45
	DAY LEQ	67.27		EVENING LEQ	63.50		NIGHT LEQ	66.61	

CNEL	73.16	Day hour	90.00
DAY LEQ	67.27	Absorptive?	no
		Use hour?	no
		GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

2	:Id	
Palm Canyon Drive	:Road	
In the vicinity of the project site	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16838
Speed	35
Distance	55
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	975.16	20.21	33.68	723.94	3.37	5.61	179.52	28.06	46.77
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	24.14	7.31	9.53	22.85	-0.47	1.75	16.79	8.73	10.95
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	63.77	56.65	64.09	62.48	48.87	56.31	56.42	58.08	65.52
	DAY LEQ	67.33		EVENING LEQ	63.57		NIGHT LEQ	66.67	

CNEL	73.22
DAY LEQ	67.33

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

APPENDIX F

SOUNDPLAN INPUTS AND OUTPUTS

Noise emissions of road traffic

Statio km	ADT Veh/24	Vehicles type	Vehicle name	Traffic values day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Contr devic	Cons Spee km/h	Affec veh. %	Road surface	Gradie Min / M %
N Palm Canyon Dr					Traffic direction: In entry direction							
0+00(	26926	Total	-	1646	1172	407	-	none	-	-	Average (of DGAC a	0.0
		Automobiles	-	1559	1158	287	64					
		Medium trucks	-	32	5	45	64					
		Heavy trucks	-	54	9	75	64					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
0+22	-							-	-	-	-	-

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level Lden dB(A)	Conflict Lden dB
1	2	North	1.Fl	-	65.0	-
			2.Fl	-	64.9	-
2		North	1.Fl	-	69.0	-
			2.Fl	-	69.3	-
3	3	East	1.Fl	-	73.6	-
			2.Fl	-	73.6	-
4	4	South	1.Fl	-	69.2	-
			2.Fl	-	69.5	-
5	5	South	1.Fl	-	65.3	-
			2.Fl	-	65.4	-
6	6	North	1.Fl	-	64.6	-
			2.Fl	-	64.7	-
7	7	North	1.Fl	-	67.9	-
			2.Fl	-	68.2	-
8	8	East	1.Fl	-	69.1	-
			2.Fl	-	69.4	-
9	9	West	1.Fl	-	63.1	-
			2.Fl	-	63.3	-
10	10	North	1.Fl	-	71.6	-
			2.Fl	-	71.6	-
11	11	East	1.Fl	-	74.9	-
			2.Fl	-	74.6	-
12	12	South	1.Fl	-	71.5	-
			2.Fl	-	71.6	-
13	13	South	1.Fl	-	67.4	-
			2.Fl	-	67.5	-
14	14	South	1.Fl	-	64.7	-
			2.Fl	-	64.6	-
15	15	North	1.Fl	-	36.7	-
			2.Fl	-	40.0	-

APPENDIX G

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Commercial to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	32.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.145	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	32.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.061	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project	Date:	3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Multi-family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	40.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.104	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project	Date:	3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Multi-family Residential to North		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	40.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.044	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-family Residential to West and Northwest		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	95.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.028	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Single-family Residential to West and Northwest		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	95.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.012	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project	Date:	3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Commercial to South		
Address:			
PPV = PPVref(25/D)^n (in/sec)			

INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	82.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS			
PPV =	0.035	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project	Date:	3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to South		
Address:			
PPV = PPVref(25/D)^n (in/sec)			

INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	82.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS			
PPV =	0.015	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Commercial to East		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	95.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.028	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to East		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	95.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.012	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project		Date: 3/8/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-family Residential to Southwest		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	127.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.018	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19476 RIOS Project	Date:	3/8/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Single-family Residential to Southwest		
Address:			
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	127.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.008	IN/SEC	OUTPUT IN BLUE

Construction Annoyance Vibration Calculations

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).

Eq. 7-3: Lvdistance = Lvref - 30log (D/25)

Lvdistance = the rms velocity level adjsuted for distance, VdB
Lvref = the source reference vibration level at 25 feet, VdB
D = distance from the equipment to th receiver, ft.

Large Bulldozer:

MF to North: Lvdistance = 87 - 30 log (40/25) = 80.88 VdB

SF to West/Northwest & Commercial to East: Lvdistance = 87 - 30 log (95/25) = 69.61 VdB

SF to Southwest: Lvdistance = 87 - 30 log (127/25) = 65.82 VdB

Commercial to South: Lvdistance = 87 - 30 log (82/25) = 71.52 VdB

Under Residential Threshold Mitigation Distance: 87 - 30 log (80/25) = 71.85 VdB

Under Cateogry 3 Threshold Mitigation Distance: 87 - 30 log (63/25) = 74.96 VdB

Vibratory Roller:

MF to North: Lvdistance = 94 - 30 log (40/25) = 87.88 VdB

SF to West/Northwest and Commercial to East: Lvdistance = 94 - 30 log (95/25) = 76.61 VdB

SF to Southwest: Lvdistance = 94 - 30 log (127/25) = 72.82 VdB

Commercial to South: Lvdistance = 94 - 30 log (82/25) = 78.52 VdB

Under Residential Threshold Mitigation Distance: 94 - 30 log (136/25) = 71.93 VdB

Under Category 3 Threshold Mitigation Distance: 94 - 30 log (108/25) = 74.94 VdB

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Appendix E

Preliminary Hydrology Report

PRELIMINARY HYDROLOGY REPORT

Lots 1-4, Block 6 of Vista Acres M.B. 11/2, except Parcel 6050-28 as shown on R.S. 42-43-48, Section 10, Township 4 South, Range 4 East, SBM City of Palm Springs, California

575 North Palm Canyon Drive

August 3, 2021

REGISTERED PROFESSIONAL ENGINEER
RODNEY R. REED
C67763
CIVIL
STATE OF CALIFORNIA

Prepared for:
Rios

JN: 2449

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Project Description

The subject project, 575 North Palm Canyon Drive, is located north of Chino Drive between Belardo Road and North Palm Canyon Drive in the city of Palm Springs, California. The proposed site is approximately 2.40 acres, consisting of proposed two-story multi-family housing, (see Vicinity Map, Appendix A).

Existing Conditions

Flood Rate Map: The project area is covered by FIRM Panel Number 06065C1558G, revised August 28, 2008. The site is designated Zone X, indicating areas determined to be outside the 0.2% annual chance floodplain. Insurance purchase is not required in these zones (see Appendix B).

Existing On-Site Conditions: The project area is vacant desert with some vegetation. The on-site vegetation is a mix of native desert plants and volunteers blown in from the surrounding landscaping. Placed boulders ring the site, with an opening at the northwest corner on Belardo Road. Tire tracks criss-cross the site, and the underlaying ground has been compacted from the vehicular traffic.

Existing On-Site Flows: The project area generally slopes toward the east-southeast with storm runoff typically occurring as sheet flow.

Existing Off-Site Flows: The project area is bounded by Belardo Road to the west, Chino Drive to the south, North Palm Canyon Drive to the east, and vacant land to the north. The existing curb along North Palm Canyon Drive prevents flows from entering from the east. An existing catch basin on Belardo Road just north of the project intercepts flows before they reach the site, leaving minimal flow to enter the site from the Belardo Road half-street along the project frontage. Chino Drive runs along the low side of the project, so no flows enter from the south. An existing wall along the northern property line of the vacant land to the north prevents flows from entering the site from that direction, so only runoff from the vacant land enters the site.

Refer to Appendix J for the Existing Conditions Exhibit.

Flood Control Requirements

The project site lies within the flood jurisdiction of the City of Palm Springs. Current City policy for this area dictates that the Whitewater Watershed BMP Design Storage Volume shall be captured and stored until such time as it is percolated into the ground.

Proposed Hydrology and Flood Control Improvements

In the proposed design, all storm runoff generated on-site will be conveyed via surface flow to area drains located throughout the project. The storm drain lines will then convey the runoff to an underground storage system designed to hold the WQMP BMP design storage volume. Runoff in excess of the WQMP BMP design storage volume will then be conveyed via storm drain pipe to the existing storm drain pipe directly north of the site.

Water Quality Management Plan

A formal separate Preliminary Water Quality Management Plan will be prepared for this project. However, the BMP Design Volume worksheet is included in Appendix C for reference.

Run-Off Analysis

Utilizing the information obtained from the NOAA Atlas 14 (Appendix D) and Hydrologic Soil Group Classification (Appendix E) the 10- and 100- year peak flows for the drainage area being conveyed within the site were calculated using RCFC&WCD rational method computer runs and are included in Appendix F and the Proposed Conditions Exhibit is included in Appendix K.

Street Capacity Analysis

Hydraflow Express in AutoCAD Civil 3D 2018 was used to determine the carrying capacity of the private interior street. The minimum longitudinal slope of 0.66% from the Preliminary Grading Exhibit (Appendix L) was used in the calculations. The 10-year peak flow of 2.17 cfs is contained in the street. However, the 3.85 cfs of the 100-year peak flow exceeds the 2.82 cfs capacity of the street. As such, an inlet is required at the midpoint of the street, as well as at the low end. The results are included in Appendix G.

Underground Retention Sizing

An underground retention system is being proposed under the drive aisle on the east side of the project. It will have a volume of 2,112 cu-ft, greater than the 2,088 cu-ft required by the BMP Design Storage Volume for the site. The basin volume calculations are included in Appendix H.

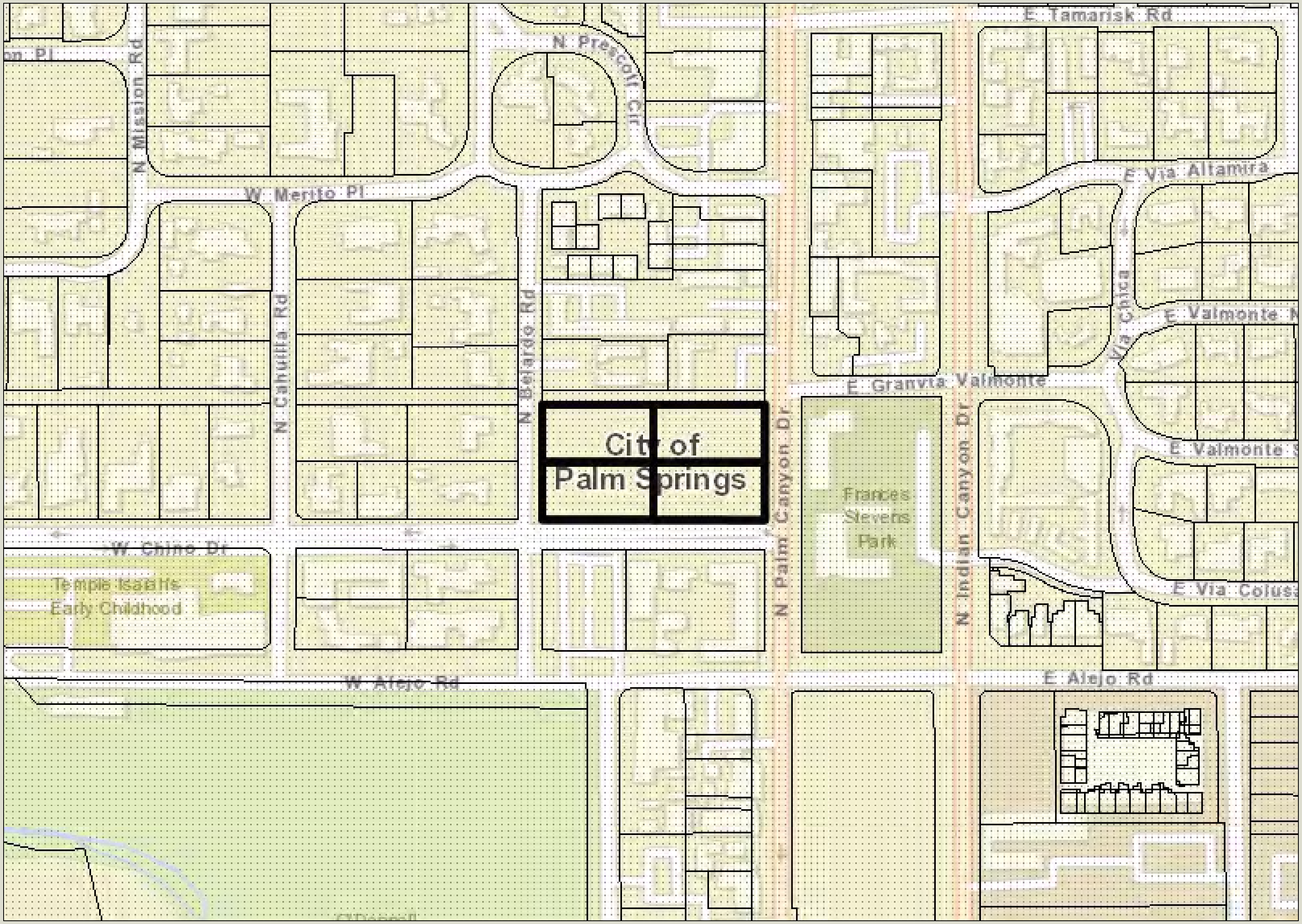
Conclusion

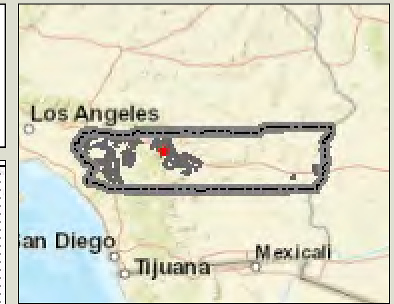
Per the City of Palm Springs, the proposed underground storage system will have adequate capacity to retain the Whitewater Watershed BMP Design Storage Volume.

It is therefore concluded that the proposed development of the subject property will meet the hydrologic requirements set forth by the City of Palm Springs.

APPENDIX A
VICINITY MAP

Map My County Map





Legend

- Parcels
- Blueline Streams
- City Areas
- World Street Map

0 376 752 Feet

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

REPORT PRINTED ON... 9/10/2020 9:34:30 AM

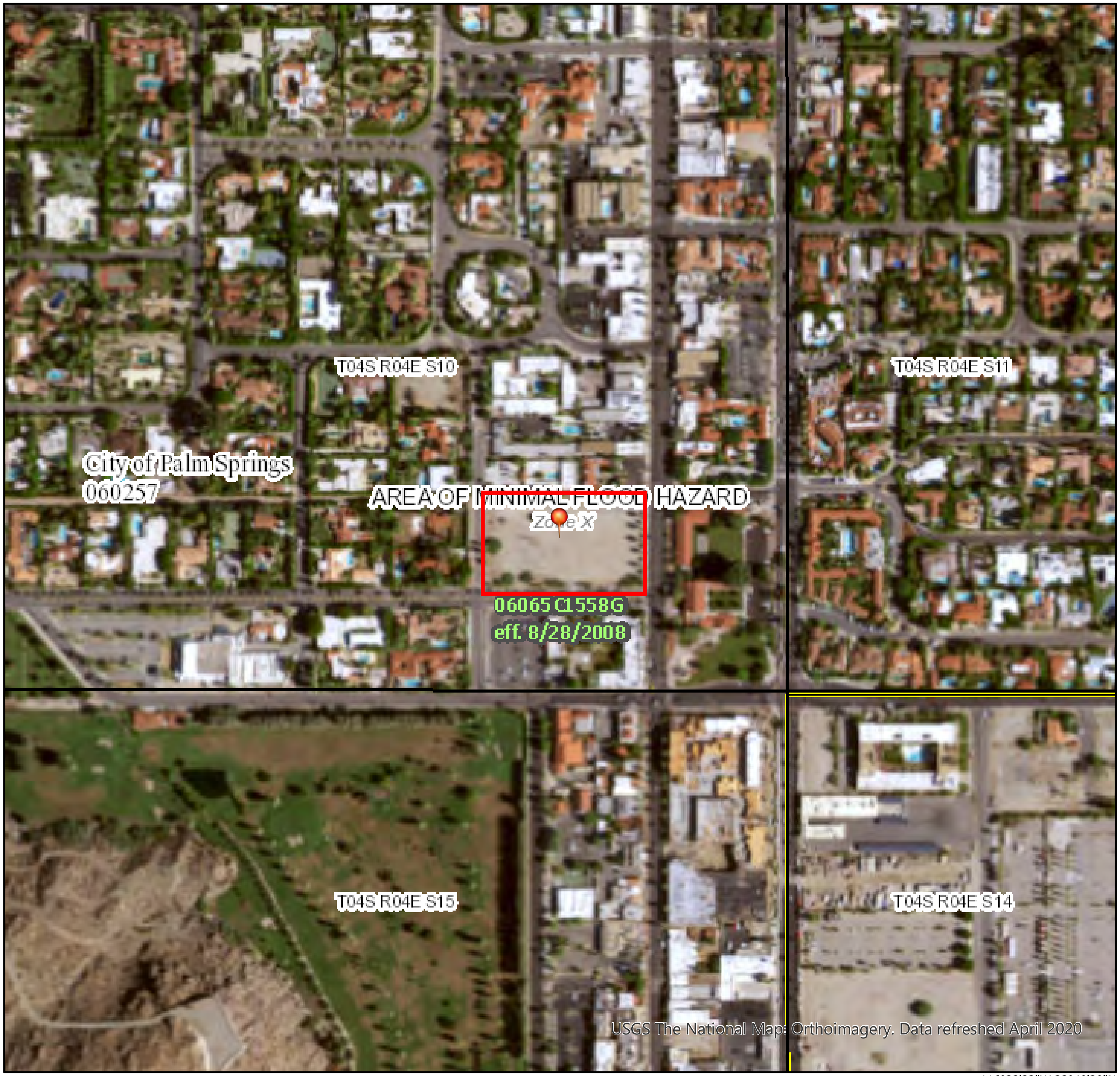
Notes

APPENDIX B
FEMA MAP

National Flood Hazard Layer FIRMette

FEMA

116°33'11"W 33°50'9"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

116°32'33"W 33°49'39"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/10/2020 at 12:51 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX C
WHITEWATER WATERSHED BMP
DESIGN VOLUME WORKSHEET

Whitewater Watershed

BMP Design Volume, V_{BMP} & Design Flow Rate, Q_{BMP} (Rev. 06-2014)

Legend:		
		Required Entries
		Calculated Cells

Company Name	MSA Consulting, Inc	Date	October 12, 2020
Designed By	SAW	County/City Case No.	
Company Project Number/Name	575 North Palm Canyon Drive		
Drainage Area Number/Name	Project Site		

Enter the Area Tributary to this Feature (A_{TRIB}) — A_{TRIB} = 2.400 acres

Determine the Impervious Area Ratio

Determine the Impervious Area Within A_{TRIB} (A_{IMP}) — A_{IMP} = 1.920 acres

Calculate the Impervious Area Ratio (I_F)

$I_F = A_{IMP}/A_{TRIB}$ — I_F = 0.80

Calculate the Composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ — C_{BMP} = 0.60

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ — V_U = 0.24 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12(in/ft)}$$

V_{BMP} = 2,088 ft^3

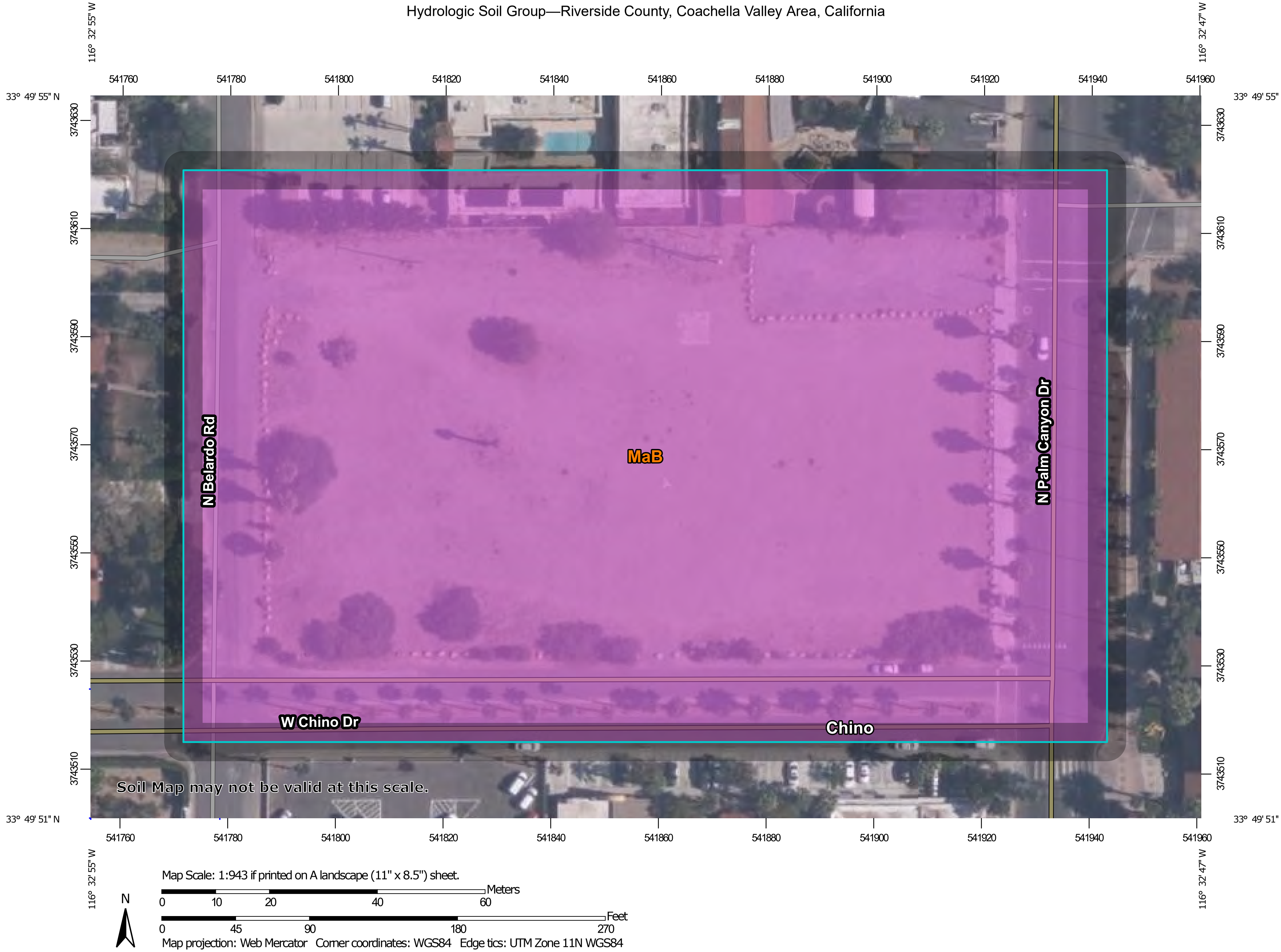
BMP Design Flow Rate, Q_{BMP}

$Q_{BMP} = C_{BMP} \times I \times A_{TRIB}$ — Q_{BMP} = 0.29 ft^3/s

I = Design Rainfall Intensity, 0.2 in/hr

Notes:

APPENDIX D
HYDROLOGIC SOIL GROUP CLASSIFICATION


116° 32' 55" W
116° 32' 47" W
33° 49' 55" N
33° 49' 51" N
541760
541780
541800
541820
541840
541860
541880
541900
541920
541940
541960
3743630
3743610
3743590
3743570
3743550
3743530
3743510
N Belardo Rd
N Palm Canyon Dr
MaB
W Chino Dr
Chino
Soil Map may not be valid at this scale.
N
Map Scale: 1:943 if printed on A landscape (11" x 8.5") sheet.
0 10 20 40 60 Meters
0 45 90 180 270 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 12, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 18, 2018—Aug 22, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaB	Myoma fine sand, 0 to 5 percent slopes	A	4.5	100.0%
Totals for Area of Interest			**4.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX E
NOAA ATLAS 14

NOAA Atlas 14, Volume 6, Version 2
Location name: Palm Springs, California, USA*
Latitude: 33.8315°, Longitude: -116.5478°
Elevation: 485.35 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.100 (0.083-0.121)	0.149 (0.124-0.181)	0.217 (0.180-0.264)	0.274 (0.226-0.337)	0.358 (0.285-0.454)	0.425 (0.331-0.552)	0.497 (0.377-0.661)	0.574 (0.424-0.786)	0.685 (0.484-0.978)	0.775 (0.529-1.15)
10-min	0.143 (0.119-0.173)	0.213 (0.177-0.259)	0.310 (0.258-0.378)	0.393 (0.324-0.483)	0.513 (0.408-0.651)	0.610 (0.475-0.791)	0.713 (0.541-0.948)	0.823 (0.608-1.13)	0.982 (0.694-1.40)	1.11 (0.758-1.64)
15-min	0.173 (0.144-0.210)	0.258 (0.215-0.313)	0.375 (0.311-0.457)	0.476 (0.392-0.584)	0.620 (0.493-0.787)	0.737 (0.574-0.956)	0.862 (0.654-1.15)	0.996 (0.735-1.36)	1.19 (0.840-1.70)	1.34 (0.917-1.99)
30-min	0.239 (0.199-0.290)	0.357 (0.297-0.433)	0.519 (0.431-0.631)	0.658 (0.541-0.807)	0.857 (0.682-1.09)	1.02 (0.793-1.32)	1.19 (0.905-1.59)	1.38 (1.02-1.88)	1.64 (1.16-2.34)	1.86 (1.27-2.75)
60-min	0.345 (0.287-0.418)	0.514 (0.428-0.624)	0.748 (0.621-0.910)	0.948 (0.780-1.16)	1.24 (0.983-1.57)	1.47 (1.14-1.91)	1.72 (1.30-2.28)	1.98 (1.46-2.72)	2.37 (1.67-3.38)	2.68 (1.83-3.96)
2-hr	0.484 (0.403-0.586)	0.675 (0.562-0.819)	0.945 (0.784-1.15)	1.18 (0.971-1.45)	1.52 (1.21-1.94)	1.81 (1.41-2.35)	2.11 (1.61-2.81)	2.45 (1.81-3.35)	2.93 (2.07-4.19)	3.34 (2.28-4.93)
3-hr	0.589 (0.491-0.714)	0.805 (0.670-0.977)	1.11 (0.922-1.35)	1.38 (1.14-1.69)	1.77 (1.41-2.25)	2.10 (1.64-2.73)	2.46 (1.86-3.27)	2.85 (2.10-3.90)	3.42 (2.42-4.88)	3.89 (2.66-5.75)
6-hr	0.804 (0.670-0.974)	1.08 (0.900-1.31)	1.48 (1.23-1.80)	1.82 (1.50-2.24)	2.33 (1.86-2.96)	2.76 (2.15-3.58)	3.22 (2.44-4.28)	3.73 (2.75-5.10)	4.47 (3.16-6.39)	5.09 (3.48-7.54)
12-hr	1.02 (0.851-1.24)	1.40 (1.16-1.69)	1.92 (1.60-2.34)	2.38 (1.96-2.92)	3.04 (2.42-3.86)	3.58 (2.79-4.64)	4.16 (3.16-5.54)	4.79 (3.54-6.56)	5.70 (4.03-8.14)	6.45 (4.41-9.55)
24-hr	1.21 (1.07-1.39)	1.70 (1.50-1.96)	2.38 (2.10-2.75)	2.96 (2.59-3.45)	3.79 (3.21-4.56)	4.46 (3.70-5.48)	5.17 (4.19-6.50)	5.93 (4.68-7.67)	7.02 (5.32-9.45)	7.90 (5.79-11.0)
2-day	1.38 (1.22-1.60)	2.00 (1.77-2.30)	2.85 (2.51-3.30)	3.58 (3.13-4.17)	4.63 (3.92-5.58)	5.49 (4.55-6.74)	6.40 (5.19-8.05)	7.38 (5.83-9.55)	8.79 (6.66-11.8)	9.94 (7.29-13.8)
3-day	1.44 (1.27-1.66)	2.10 (1.86-2.42)	3.03 (2.67-3.51)	3.83 (3.35-4.47)	5.00 (4.23-6.02)	5.95 (4.94-7.31)	6.97 (5.65-8.77)	8.08 (6.38-10.5)	9.69 (7.34-13.0)	11.0 (8.07-15.3)
4-day	1.47 (1.30-1.70)	2.16 (1.91-2.50)	3.14 (2.77-3.63)	3.98 (3.49-4.65)	5.21 (4.42-6.28)	6.23 (5.17-7.65)	7.32 (5.93-9.21)	8.51 (6.71-11.0)	10.2 (7.75-13.8)	11.7 (8.55-16.2)
7-day	1.63 (1.45-1.88)	2.41 (2.13-2.78)	3.51 (3.09-4.06)	4.47 (3.91-5.21)	5.88 (4.98-7.08)	7.05 (5.85-8.66)	8.31 (6.74-10.5)	9.70 (7.65-12.5)	11.7 (8.89-15.8)	13.4 (9.83-18.7)
10-day	1.72 (1.52-1.98)	2.54 (2.24-2.93)	3.71 (3.27-4.29)	4.73 (4.14-5.52)	6.24 (5.29-7.52)	7.50 (6.23-9.22)	8.86 (7.19-11.2)	10.4 (8.18-13.4)	12.6 (9.52-16.9)	14.4 (10.6-20.0)
20-day	1.91 (1.69-2.20)	2.85 (2.52-3.29)	4.20 (3.70-4.86)	5.39 (4.71-6.29)	7.15 (6.06-8.61)	8.62 (7.15-10.6)	10.2 (8.28-12.8)	12.0 (9.44-15.5)	14.5 (11.0-19.5)	16.6 (12.2-23.2)
30-day	2.11 (1.87-2.43)	3.18 (2.81-3.67)	4.72 (4.16-5.46)	6.07 (5.31-7.08)	8.08 (6.84-9.73)	9.75 (8.09-12.0)	11.6 (9.37-14.5)	13.5 (10.7-17.5)	16.4 (12.4-22.1)	18.8 (13.8-26.1)
45-day	2.27 (2.01-2.62)	3.47 (3.07-4.01)	5.20 (4.58-6.02)	6.72 (5.88-7.84)	8.97 (7.60-10.8)	10.8 (9.00-13.3)	12.9 (10.4-16.2)	15.1 (11.9-19.5)	18.2 (13.8-24.5)	20.8 (15.3-29.0)
60-day	2.41 (2.13-2.77)	3.73 (3.30-4.30)	5.63 (4.97-6.52)	7.31 (6.39-8.52)	9.78 (8.28-11.8)	11.8 (9.82-14.5)	14.0 (11.4-17.7)	16.4 (13.0-21.2)	19.8 (15.0-26.7)	22.6 (16.6-31.5)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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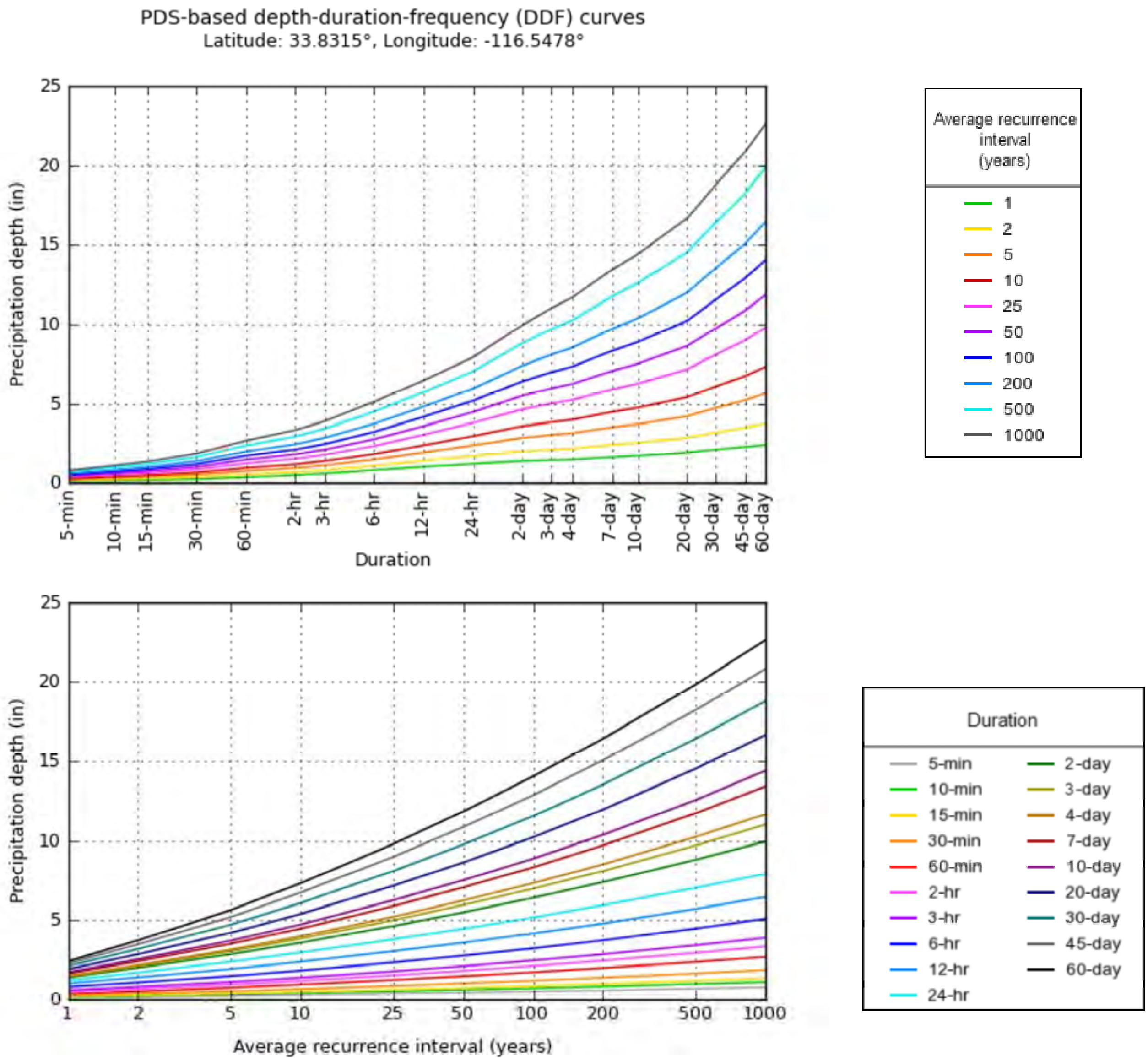
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Thu Sep 10 16:37:38 2020

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Maps & aerials

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial

Back to Top

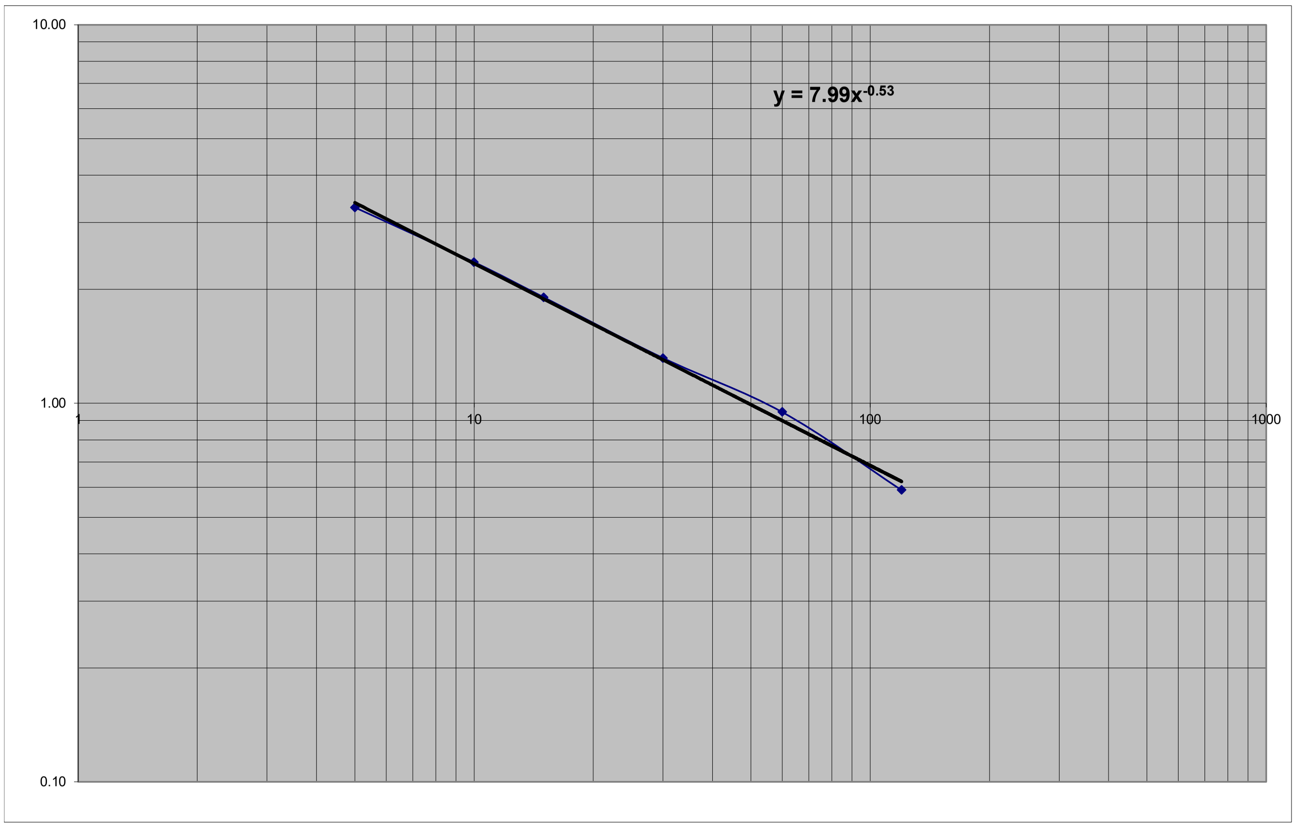
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

NOAA ATLAS 14 INTENSITY - DURATION WORKSHEET

PROJECT NAME	575 North Palm Canyon Drive
PROJECT NUMBER	2449
STORM EVENT	10 yr
DATE:	October 12, 2020

DATA FROM NOAA ATLAS 14

MINUTES	RAINFALL INTENSITY (in/hr)	RAINFALL DEPTH (in)
5	3.29	0.27
10	2.36	0.39
15	1.90	0.48
30	1.32	0.66
60	0.95	0.95
120	0.59	1.18



INTENSITY VALUES FROM GRAPH

CONSTANT FROM GRAPH	7.99
EXPONENT FROM GRAPH	-0.53

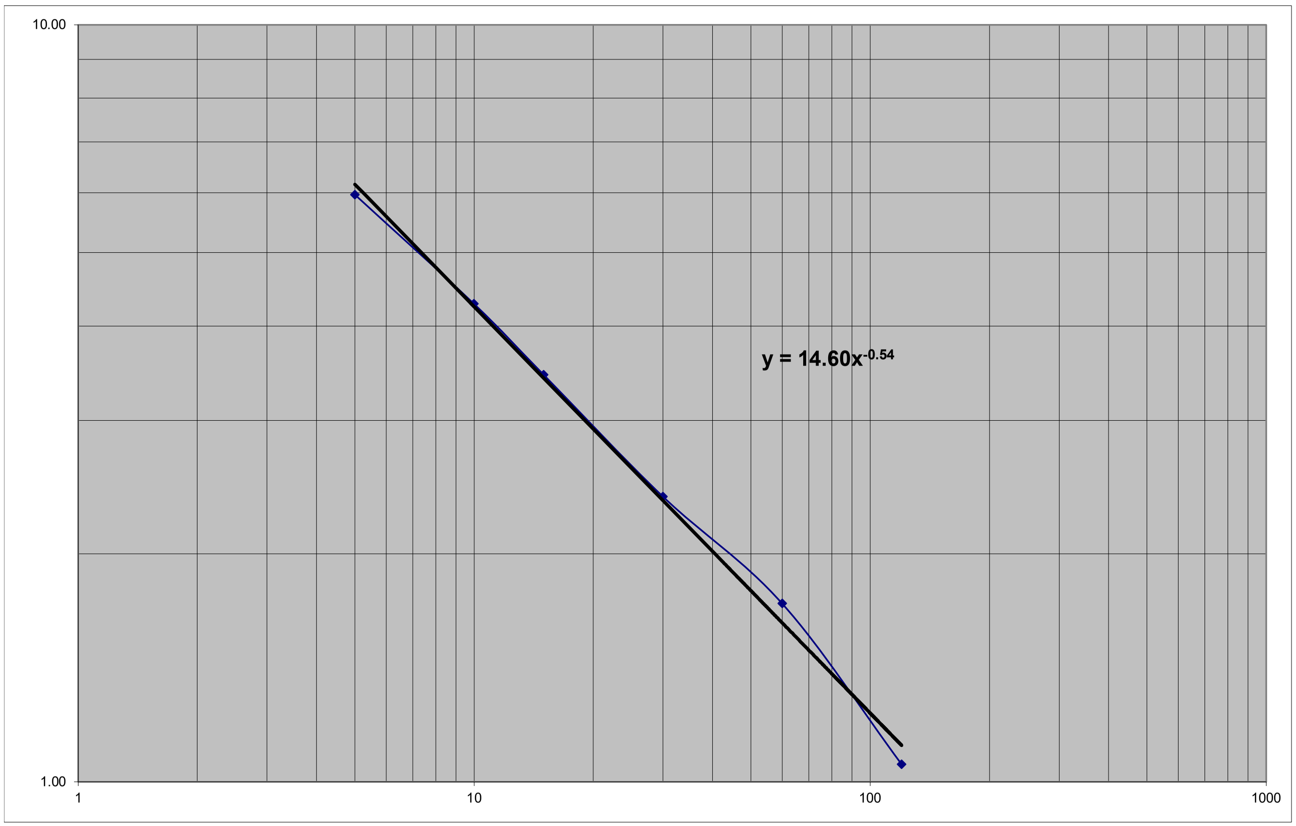
MINUTES	RAINFALL INTENSITY (in/hr)	RAINFALL DEPTH (in)
5	3.40	0.28
10	2.36	0.39
15	1.90	0.48
20	1.63	0.54
25	1.45	0.60
30	1.32	0.66
35	1.21	0.71
40	1.13	0.75
45	1.06	0.80
50	1.00	0.84
55	0.96	0.88
60	0.91	0.91
65	0.87	0.95
70	0.84	0.98
75	0.81	1.01
80	0.78	1.04
85	0.76	1.07
90	0.74	1.10
95	0.72	1.13
100	0.70	1.16
105	0.68	1.19
110	0.66	1.21
115	0.65	1.24
120	0.63	1.26

NOAA ATLAS 14 INTENSITY - DURATION WORKSHEET

PROJECT NAME	575 North Palm Canyon Drive
PROJECT NUMBER	2449
STORM EVENT	100 yr
DATE:	October 12, 2020

DATA FROM NOAA ATLAS 14

MINUTES	RAINFALL INTENSITY (in/hr)	RAINFALL DEPTH (in)
5	5.96	0.50
10	4.28	0.71
15	3.45	0.86
30	2.38	1.19
60	1.72	1.72
120	1.06	2.11



INTENSITY VALUES FROM GRAPH

CONSTANT FROM GRAPH	14.6
EXPONENT FROM GRAPH	-0.54

MINUTES	RAINFALL INTENSITY (in/hr)	RAINFALL DEPTH (in)
5	6.12	0.51
10	4.21	0.70
15	3.38	0.85
20	2.90	0.97
25	2.57	1.07
30	2.33	1.16
35	2.14	1.25
40	1.99	1.33
45	1.87	1.40
50	1.77	1.47
55	1.68	1.54
60	1.60	1.60
65	1.53	1.66
70	1.47	1.72
75	1.42	1.77
80	1.37	1.83
85	1.33	1.88
90	1.29	1.93
95	1.25	1.98
100	1.21	2.02
105	1.18	2.07
110	1.15	2.11
115	1.13	2.16
120	1.10	2.20

APPENDIX F
RCFC&WCD RATIONAL METHOD
HYDROLOGY CALCULATIONS

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 09/28/20 File:244910YR.out

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575 NORTH PALM CANYON DRIVE
10-YEAR STORM

********* Hydrology Study Control Information **********

Rational Method Hydrology Program based on Riverside County Flood Control & Water Conservation District 1978 hydrology manual

Storm event (year) = 10; Antecedent Moisture Condition = 2

2-year, 1-hour precipitation = 0.514(In.)
100-year, 1-hour precipitation = 1.720(In.)

Storm event year = 10
Calculated rainfall intensity data:
1-hour intensity = 1.010(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Node 100 to Node 110
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 400.000(Ft.)
Top (of initial area) elevation = 492.200(Ft.)
Bottom (of initial area) elevation = 487.000(Ft.)
Difference in elevation = 5.200(Ft.)
Slope = 0.01300; s(percent)= 1.30
TC = k(0.307)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.036 min.
Rainfall intensity = 2.932(In/Hr) for a 10-year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.842
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil (AMC 2) = 32.00
Pervious area fraction = 0.130; Impervious fraction = 0.870
Initial subarea runoff = 2.174(CFS)
Total initial stream area = 0.880(Ac.)
Pervious area fraction = 0.130

++

Process from Node 120 to Node 130

**** INITIAL AREA EVALUATION ****

Initial area flow distance = 450.000(Ft.)
Top (of initial area) elevation = 492.200(Ft.)
Bottom (of initial area) elevation = 486.300(Ft.)
Difference in elevation = 5.900(Ft.)
Slope = 0.01311; s(percent) = 1.31
TC = k(0.326)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.922 min.
Rainfall intensity = 2.774(In/Hr) for a 10-year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil (AMC 2) = 32.00
Pervious area fraction = 0.210; Impervious fraction = 0.790
Initial subarea runoff = 3.392(CFS)
Total initial stream area = 1.520(Ac.)
Pervious area fraction = 0.210
End of computations, total study area = 2.40 (Ac.)

The following figures may be used for a unit hydrograph study of the same area:

Area averaged pervious area fraction (Ap) = 0.181
Area averaged RI index number = 32.0

RCFCD CONFLUENCE WORKSHEET

PROJECT: 575 North Palm Canyon Drive
JOB #: 2449
TRIBUTARY AREA: Site
PREPARED BY: saw
DATE: October 12, 2020

STORM EVENT: 10

Let Qa = Stream with largest flow:

If: **Ta>Tb**
Then: **Qp=Qa+Qb(Ia/Ib)**

If: **Tb>Ta**
Then: **Qp=Qa+Qb(Ta/Tb)**

STREAM	FLOW RATE (cfs)	TC (min)	RAINFALL INTENSITY (In/Hr)	AREA (acres)	CONFLUENCED FLOW (cfs)
DA-A	2.17	8.04	2.93	0.88	**2.06**
DA-B	3.39	8.92	2.77	1.52	**3.39**

Qp=	**5.45**
Tp=	**8.92**
Ip=	**2.77**
Area=	**2.40**

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 09/28/20 File:2449100yr.out

---

575 NORTH PALM CANYON DRIVE
100-YEAR STORM

********* Hydrology Study Control Information **********

Rational Method Hydrology Program based on Riverside County Flood Control & Water Conservation District 1978 hydrology manual

Storm event (year) = 100; Antecedent Moisture Condition = 2

2-year, 1-hour precipitation = 0.514(In.)
100-year, 1-hour precipitation = 1.720(In.)

Storm event year = 100
Calculated rainfall intensity data:
1-hour intensity = 1.720(In/Hr)
Slope of intensity duration curve = 0.5400

++

Process from Node 100 to Node 110
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 400.000(Ft.)
Top (of initial area) elevation = 492.200(Ft.)
Bottom (of initial area) elevation = 487.000(Ft.)
Difference in elevation = 5.200(Ft.)
Slope = 0.01300; s(percent)= 1.30
TC = k(0.307)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.036 min.
Rainfall intensity = 5.093(In/Hr) for a 100-year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.858
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil (AMC 2) = 32.00
Pervious area fraction = 0.130; Impervious fraction = 0.870
Initial subarea runoff = 3.847(CFS)
Total initial stream area = 0.880(Ac.)
Pervious area fraction = 0.130

++

Process from Node 120 to Node 130
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 450.000(Ft.)
Top (of initial area) elevation = 492.200(Ft.)
Bottom (of initial area) elevation = 486.300(Ft.)
Difference in elevation = 5.900(Ft.)
Slope = 0.01311; s(percent) = 1.31
TC = k(0.326)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.922 min.
Rainfall intensity = 4.814(In/Hr) for a 100-year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.830
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil (AMC 2) = 32.00
Pervious area fraction = 0.210; Impervious fraction = 0.790
Initial subarea runoff = 6.073(CFS)
Total initial stream area = 1.520(Ac.)
Pervious area fraction = 0.210
End of computations, total study area = 2.40 (Ac.)

The following figures may be used for a unit hydrograph study of the same area:

Area averaged pervious area fraction (Ap) = 0.181
Area averaged RI index number = 32.0

RCFCD CONFLUENCE WORKSHEET

PROJECT:	575 North Palm Canyon Drive
JOB #:	2449
TRIBUTARY AREA	Site
PREPARED BY:	saw
DATE:	October 12, 2020

STORM EVENT 100

Let Qa = Stream with largest flow:

If: **Ta>Tb**
Then: **Qp=Qa+Qb(Ia/Ib)**

If: **Tb>Ta**
Then: **Qp=Qa+Qb(Ta/Tb)**

STREAM	FLOW RATE (cfs)	TC (min)	RAINFALL INTENSITY (In/Hr)	AREA (acres)	CONFLUENCED FLOW (cfs)
DA-A	3.85	8.04	5.09	0.88	**3.64**
DA-B	6.07	8.92	4.81	1.52	**6.07**

Qp=	**9.71**
Tp=	**8.92**
Ip=	**4.81**
Area=	**2.40**

APPENDIX G
STREET AND GRATED INLET CAPACITY RESULTS

Worksheet for Drive Aisle

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.007 ft/ft
Normal Depth	2.8 in

Section Definitions

Station (ft)	Elevation (ft)
0+00	1.00
0+10	0.85
0+12	0.77
0+14	0.85
0+24	1.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1.00)	(0+24, 1.00)	0.020

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	2.82 cfs
Elevation Range	0.8 to 1.0 ft
Flow Area	2.3 ft²
Wetted Perimeter	24.0 ft
Hydraulic Radius	1.1 in
Top Width	24.00 ft
Normal Depth	2.8 in
Critical Depth	2.5 in
Critical Slope	0.013 ft/ft
Velocity	1.25 ft/s
Velocity Head	0.02 ft
Specific Energy	0.25 ft
Froude Number	0.718
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.0 in

Worksheet for Drive Aisle

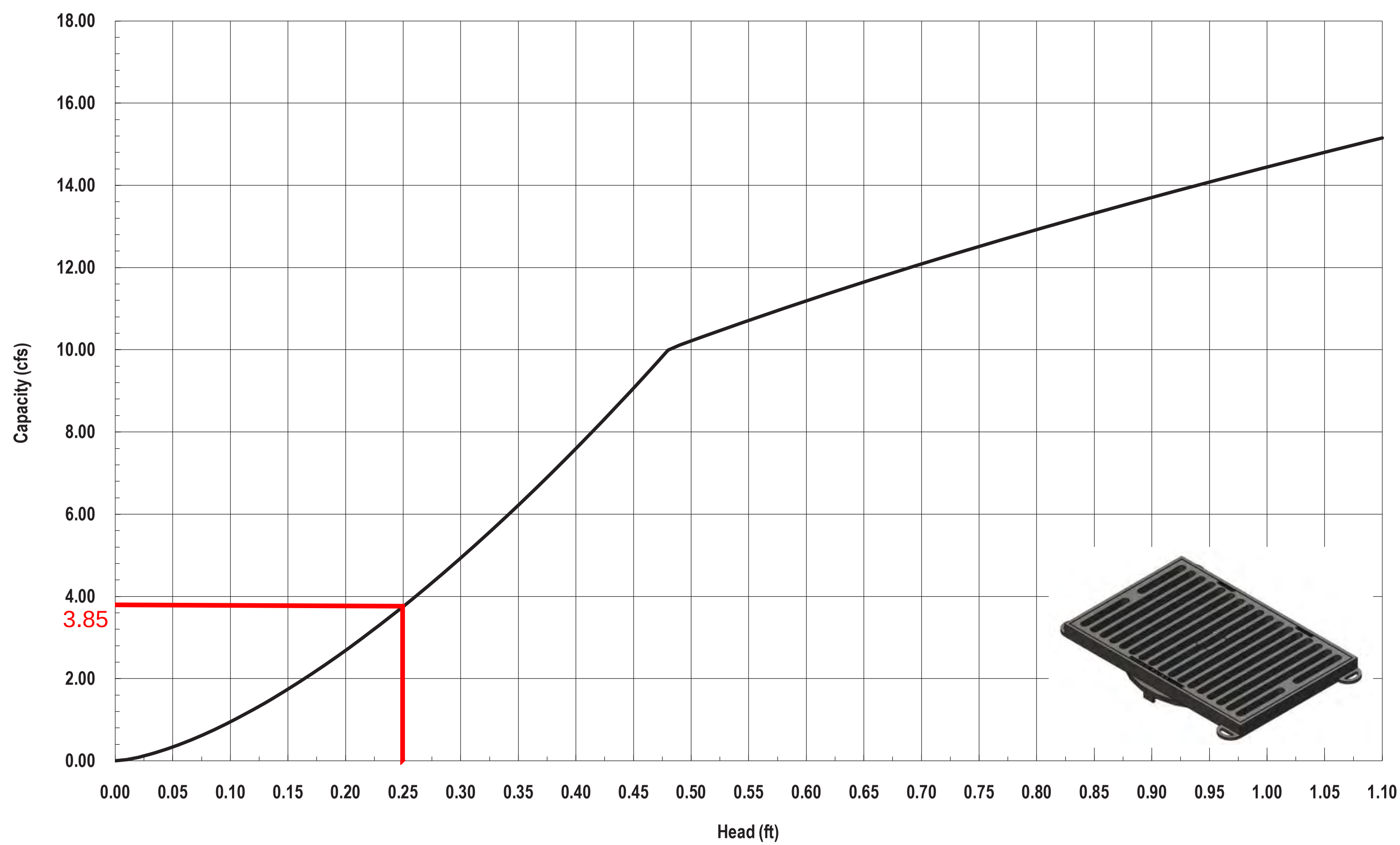
GVF Input Data

Length	0.0 ft
Number Of Steps	0

GVF Output Data

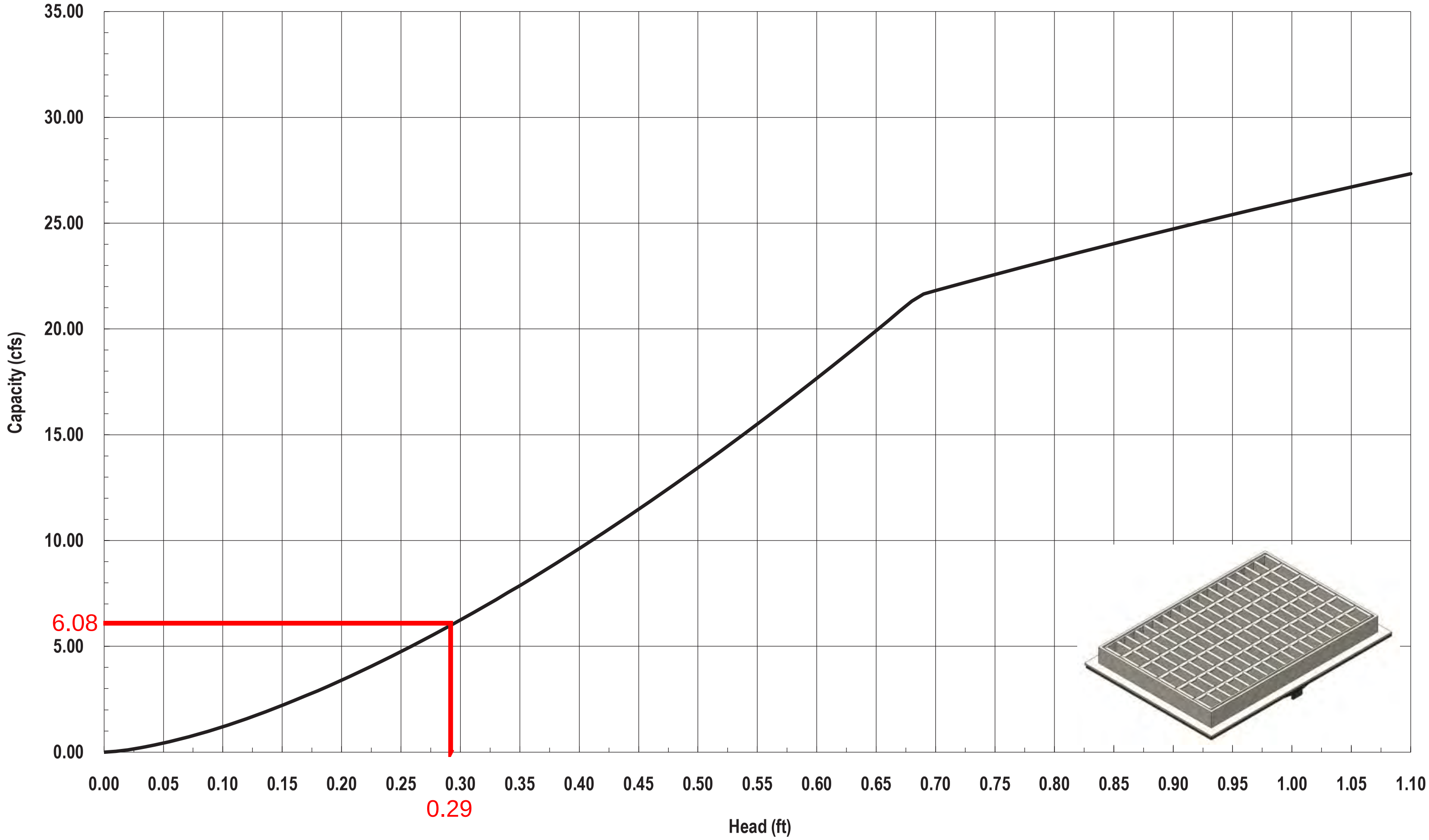
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	2.8 in
Critical Depth	2.5 in
Channel Slope	0.007 ft/ft
Critical Slope	0.013 ft/ft

Nyloplast 2' x 3' Road & Highway Grate Inlet Capacity Chart



Nyloplast®
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

Nyloplast 2' x 3' Steel Bar / MAG Grate Inlet Capacity Chart



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3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

APPENDIX H
UNDERGROUND RETENTION CALCULATIONS

2449 - 575 NORTH INDIAN CANYON DRIVE
UNDERGROUND RETENTION VOLUMES
PROJECT SITE

Variables

A	B	C	D	E	F
PERC RATE (IN/HR)	GRAVEL VOIDS (%)	PIPE SIZE (IN)	STONE ABOVE PIPE (IN)	STONE BELOW PIPE (IN)	STONE ON PIPE SIDES (IN)
0	40	48	6	12	24

Basin Characteristics

G	H	I	J	K
TRENCH WIDTH (FT)	TRENCH DEPTH (FT)	PIPE VOLUME PER LINEAL FOOT (CUFT/LF)	GRAVEL VOLUME PER LINEAL FOOT (CUFT/LF)	PERLOCATION PER LINEAL FOOT PER HOUR (CUFT/LF/HR)
8.00	5.50	12.57	12.57	0.00

Basin Length Determination

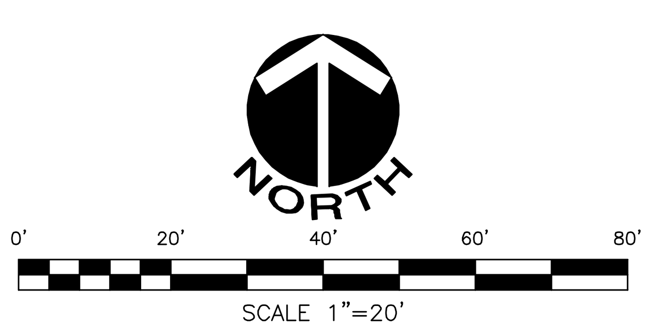
L	M	N	O	P
100 YR STORM (HOUR)	FLOOD VOLUME (CUFT)	PERCOLATION DURING STORM PER LINEAL FOOT (CUFT/LF)	TOTAL RETENTION PER LINEAL FOOT (CUFT/LF)	LENGTH OF BASIN (LF)
WQMP ONLY	2,088	0.00	25.14	84

A - Assumed minimum perc rate
B - StormTech Tech Sheet #1 - Porosity of Structural Backfill, November 2012
C - Selected by Engineer of Record
D - Selected by Engineer of Record
E - Selected by Engineer of Record
F = C / 2
G = [C + (2 x F)] / 12
H = (C + D + E) / 12
I = 3.14 x [(C / 2) / 12]^2
J = [(G x H) - I] x B
K = (A / 12) x G
L - From Synthetic Unit Hydrograph, Shortcut Method
M - From Synthetic Unit Hydrograph, Shortcut Method
N = K x L
O = I + J + N
P = M / O

APPENDIX J
EXISTING CONDITIONS EXHIBIT

LEGEND

→ FLOW ARROW



PROJECT NAME:	24-UNIT MULTI-FAMILY RESIDENTIAL
MAP NUMBER:	575 NORTH PALM CANYON DRIVE
PLAN:	EXISTING CONDITIONS EXHIBIT
EXHIBIT DATE:	AUGUST 3, 2021

MSA CONSULTING, INC.
> PLANNING > CIVIL ENGINEERING > LAND SURVEYING
34200 Bob Hope Drive, Rancho Mirage, CA 92270
760.320.9811 msaconsultinginc.com

DESIGN BY	SAW
DRAWN BY	SAW
CHECK BY	RRR

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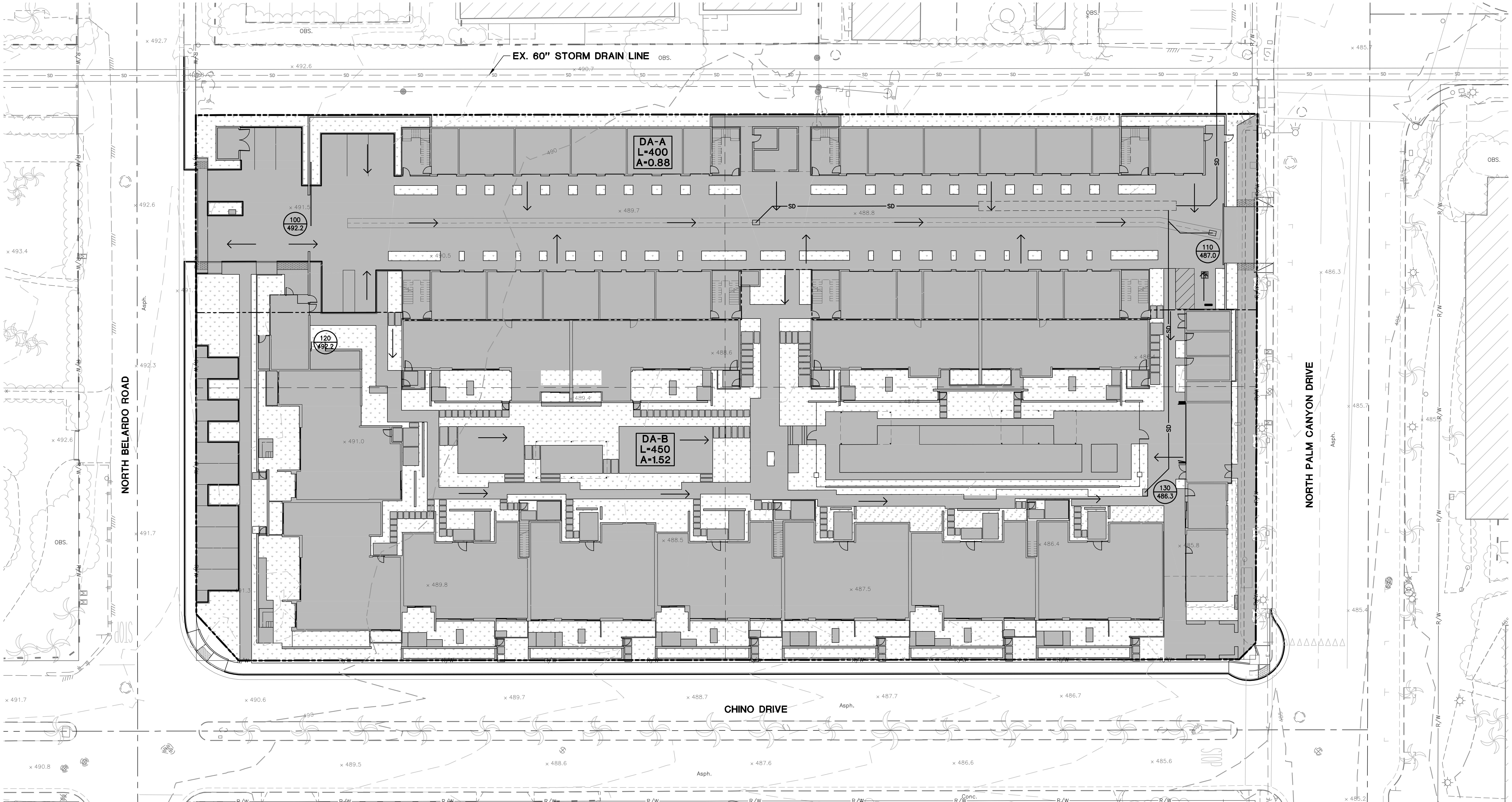
APPENDIX K
PROPOSED CONDITIONS EXHIBIT



LAND USE SUMMARY

LAND USE	DA-A (ac)	DA-B (ac)	TOTAL (ac)
BUILDINGS/HARDSCAPE	0.76	1.16	1.92
LANDSCAPING	0.12	0.36	0.48
TOTAL	0.88	1.52	2.40

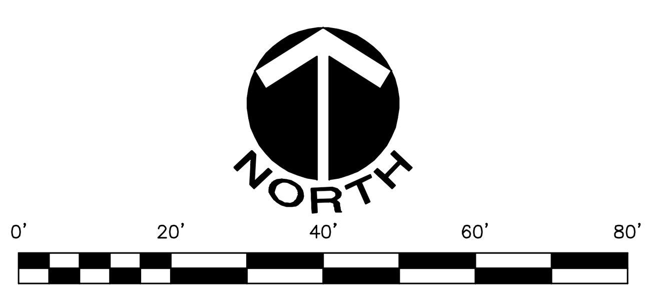
PROPOSED LAND USE SUMMARY

DA	LAND USE	PERVIOUS AREA (acre)	IMPERVIOUS AREA (acre)	TOTAL AREA (acre)	Ap DECIMAL	Ai DECIMAL
A	USER INPUT	0.11	0.77	0.88	0.13	0.87
B	USER INPUT	0.32	1.20	1.52	0.21	0.79

NOTE: USER INPUT FOR OPEN SPACE AREA ASSUMED TO BE 10% IMPERVIOUS

PEAK FLOW SUMMARY

STORM EVENT (year)	FLOW RATE (cfs)	TIME OF CONCENTRATION (min)	RAINFALL INTENSITY (in/hr)
10	5.45	8.92	2.77
100	9.71	8.92	4.81



BMP DESIGN VOLUME

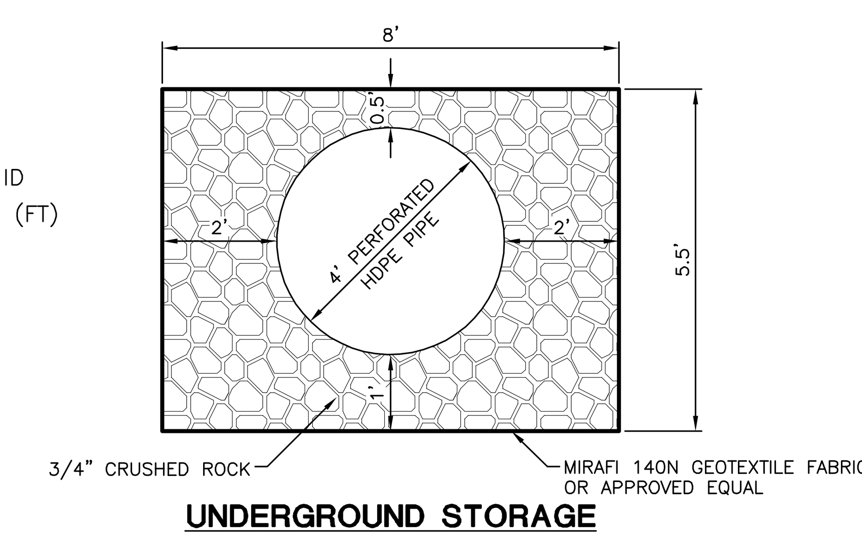
ONSITE TRIBUTARY AREA:	2.40
IMPERVIOUS AREA WITHIN TRIBUTARY AREA (ac):	1.92
IMPERVIOUS AREA RATIO:	0.80
RUNOFF COEFFICIENT:	0.60
UNIT STORAGE VOLUME [(ac-in)/ac]:	0.24
DESIGN STORAGE VOLUME OF BMP (cu-ft)	2,088
STORAGE VOLUME PROVIDED (cu-ft)	2,112

UNDERGROUND STORAGE SUMMARY

DURATION	WQMP ONLY
FLOOD VOLUME (cu-ft)	2,088
PERCOLATION (cu-ft/lf)	0
RETENTION/FOOT (cu-ft/lf)	25.14
BASIN LENGTH (lf)	84

LEGEND

- DRAINAGE FLOW
- EMERGENCY OVERFLOW
- PROJECT BOUNDARY
- DRAINAGE AREA BOUNDARY
- SD PROPOSED STORM DRAIN
- PROPOSED UNDERGROUND RETENTION (PERFORATED CMP)
- BUILDING/HARDSCAPE (PAVEMENT)
- OPEN SPACE (LANDSCAPE)
- NODE ELEV — NODE & ELEVATION
- XX L=XXX A=X.X — DRAINAGE SUB-AREA ID, FLOW TRAVEL LENGTH (FT), AREA (AC)



UNDERGROUND STORAGE
N.T.S.

PROJECT NAME:	24-UNIT MULTI-FAMILY RESIDENTIAL
MAP NUMBER:	575 NORTH PALM CANYON DRIVE
PLAN:	PROPOSED CONDITIONS EXHIBIT
EXHIBIT DATE:	AUGUST 3, 2021

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34200 Bob Hope Drive, Rancho Mirage, CA 92270
760.320.9811 msaconsultinginc.com

DESIGN BY SAW
DRAWN BY SAW
CHECK BY RRR

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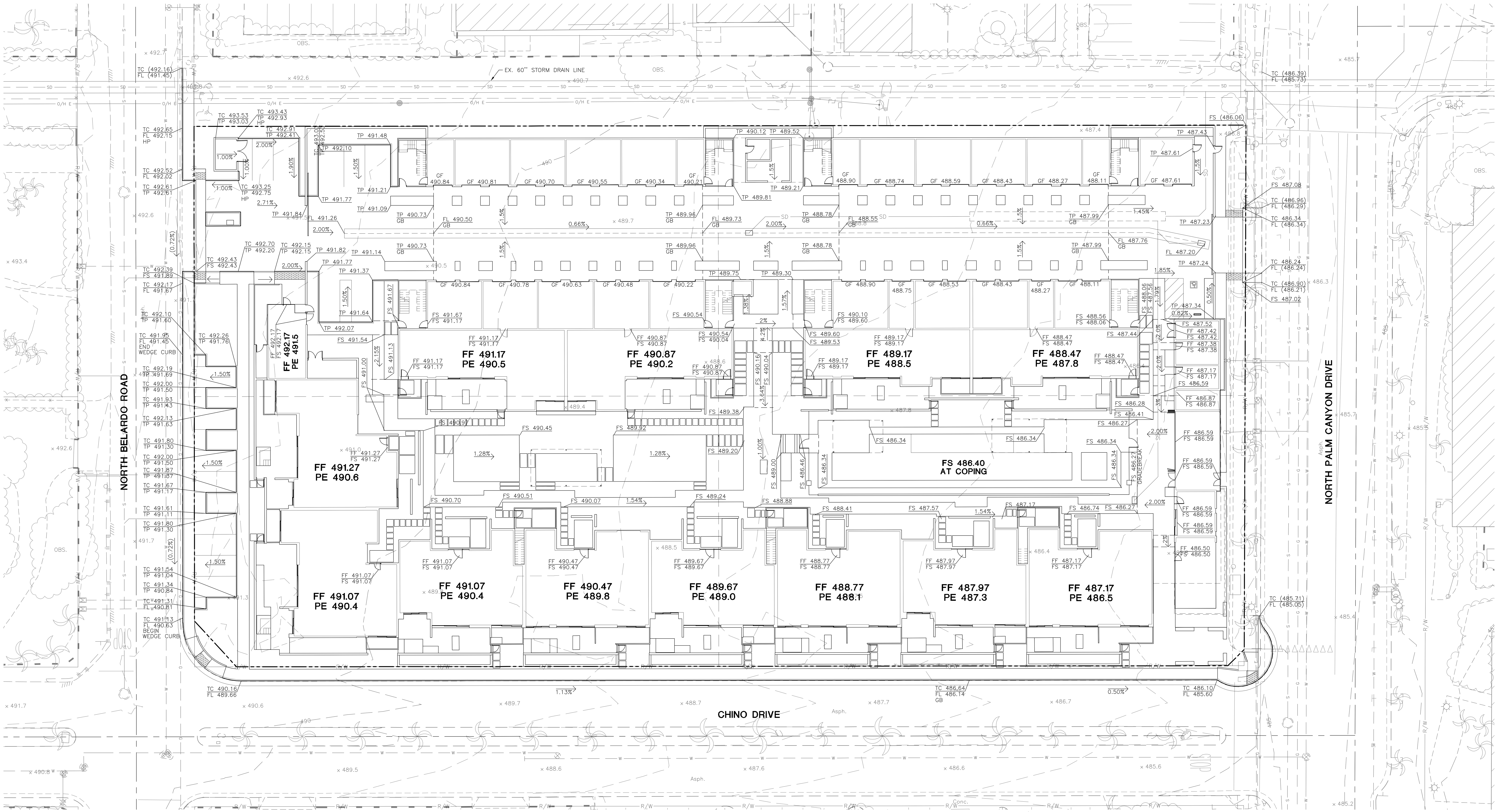
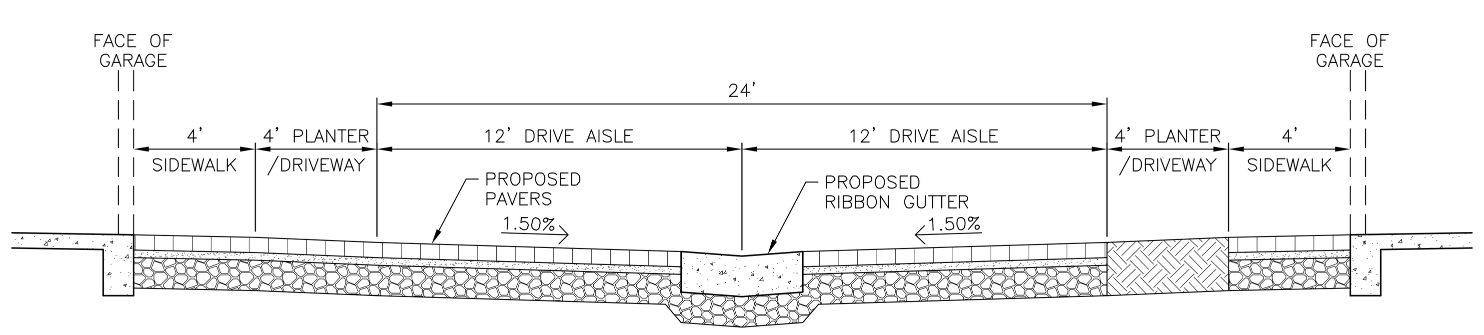
APPENDIX L
PRELIMINARY GRADING EXHIBIT



NORTH

0' 20' 40' 60' 80'

SCALE 1"=20'



TYPICAL DRIVE AISLE

N.T.S.

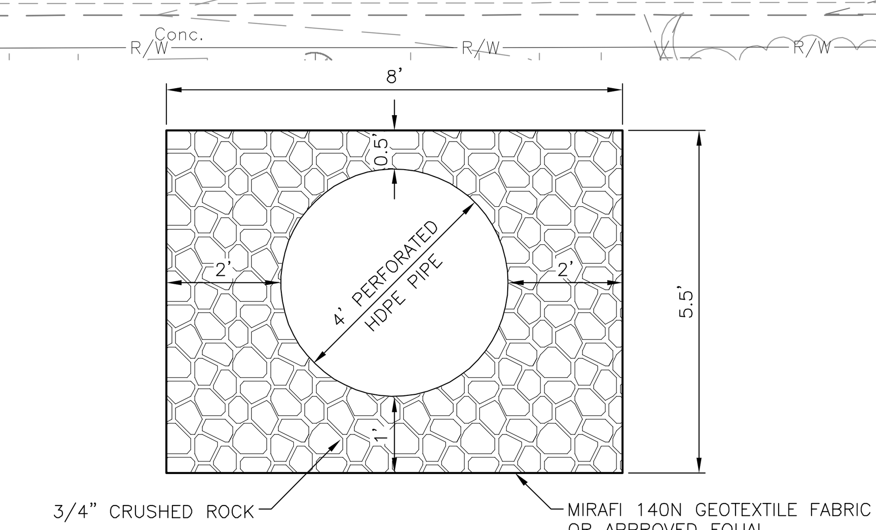
LEGEND

—— SD —— PROPOSED STORM DRAIN

- - - - PROPOSED UNDERGROUND RETENTION (PERFORATED CMP)

PRELIMINARY EARTHWORK ESTIMATE

RAW CUT .... 1,449 C.Y.
RAW FILL .... 2,087 C.Y.



UNDERGROUND STORAGE

N.T.S.

PROJECT NAME:	24-UNIT MULTI-FAMILY RESIDENTIAL
MAP NUMBER:	575 NORTH PALM CANYON DRIVE
PLAN:	PRELIMINARY GRADING EXHIBIT
EXHIBIT DATE:	AUGUST 3, 2021

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760.320.9811 msaconsultinginc.com

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CHECK BY RRR

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Appendix F

Project Specific Preliminary
Water Quality Management Plan

Project Specific
Preliminary Water Quality Management Plan

For: **Palm Canyon Multi-Family**

575 North Palm Canyon Drive

in the City of Palm Springs, California

DEVELOPMENT NO. **APNS 505-322-001; -002; -003; -004**

Prepared for:
Old Las Palmas Partners LLC
250 East Wisconsin Avenue, Suite 1610
Milwaukee, WI 53202
Telephone: (414) 964-2000

Prepared Under the Direction of:
Rodney Reed, PE
MSA Consulting, Inc.
34200 Bob Hope Drive
Rancho Mirage, CA 92270
Telephone: (760) 320-9811
Fax No. (760) 323-7893

REGISTERED PROFESSIONAL ENGINEER
RODNEY R. REED
C67763
CIVIL
STATE OF CALIFORNIA

Original Date Prepared: August 3, 2021

Revision Date(s): N/A

OWNER'S CERTIFICATION

This project-specific Preliminary Water Quality Management Plan (WQMP) has been prepared for:

Old Las Palmas Partners LLC by MSA Consulting, Inc. for the project known as **Palm Canyon Multi-Family** in the City of Palm Springs.

This WQMP is intended to comply with the requirements of the City of Palm Springs for **Palm Canyon Multi-Family,** which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this Final WQMP. The undersigned is aware that implementation of this WQMP is enforceable under the City of Palm Springs Water Quality Ordinance (Municipal Code Section 8.70).

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that I am the owner of the property that is the subject of this WQMP, and that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

____
Owner's Signature

____
Owner's Printed Name

____
Owner's Title/Position

____
Date

250 East Wisconsin Avenue, Suite 1610
Milwaukee, WI 53202

ATTEST

____
Notary Signature

____
Printed Name

____
Title/Position

____
Date

THIS FORM SHALL BE NOTARIZED BEFORE ACCEPTANCE OF THE
FINAL PROJECT SPECIFIC WQMP

Contents

TABLES

APPENDICES

I. Project Description

Project Owner:	Old Las Palmas Partners LLC 250 East Wisconsin Avenue, Suite 1610 Milwaukee, WI 53202 Telephone: (414) 964-2000
WQMP Preparer:	Under the Direct Supervision of Rodney Reed, PE MSA Consulting, Inc. 34200 Bob Hope Drive Rancho Mirage, CA 92270 Telephone: (760) 323-7893 Fax No.: (760) 323-7893

Project Site Address:	**575 N. Palm Canyon Drive** **Palm Springs, CA 92262**
Planning Area:	**Coachella Valley Planning Area**
Community Name:	**City of Palm Springs**
Development Name:	**Palm Canyon Multi-Family**
APN Number(s):	**505-322-001; -002; -003; -004**
Latitude & Longitude:	**33.8315, -116.5476**
Receiving Water:	**Tahquitz Creek, Palm Canyon Creek, Whitewater River, Coachella Valley Stormwater Channel**
Project Site Area:	**2.40 Acres**

Standard Industrial Classification (SIC) Code(s): Not applicable to residential development

Formation of Home Owners' Association (HOA)
or Property Owners Association (POA): Y ☒ N ☐

Additional Permits/Approvals required for the Project:

AGENCY	Permit required
State Department of Fish and Wildlife, Fish and Game Code §1602 Streambed Alteration Agreement	Y ☐ N☒
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Certification	Y ☐ N☒
US Army Corps of Engineers, CWA Section 404 permit	Y ☐ N☒
US Fish and Wildlife, Endangered Species Act Section 7 biological opinion	Y ☐ N☒
Statewide Construction General Permit Coverage	Y ☒ N☐
Statewide Industrial General Permit Coverage	Y ☐ N☒
Other:	
City of Palm Springs Grading Permit	Y ☒ N☐
City of Palm Springs Building Permit	Y ☒ N☐

- The proposed project activity will not divert or obstruct the natural flow or change the bed, channel, or bank of any stream, river or lake. Therefore, a State Department of Fish and Game, 1601 Streambed Alteration Agreement is not required.
- The proposed project activity will not result in discharge into navigable waters; therefore, a Clean Water Act Section 401 Water Quality Certification permit is not required.
- The proposed facility will not result in the discharge of dredged or fill materials into the waters of the United States, including wetlands. A Clean Water Act Section 404 Permit is not required for this project.
- The proposed project site is not recognized as a habitat of an endangered species nor does it form part of a Conservation Area under the Coachella Valley Multiple Species Habitat Conservation Plan. A U.S. Fish and Wildlife, Endangered Species Act Section 7 biological opinion is not required for this project.
- The proposed project is not industrial in nature. Therefore, coverage under the General Permit for Storm Water Discharges Associated with Industrial Activities is not required. This project will obtain coverage under the State Water Board NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

Project Introduction and Existing Conditions

The undeveloped project site covers approximately 2.4 acres located at 575 North Palm Canyon Drive, in the City of Palm Springs. The project location can also be described as west of North Palm Canyon Drive; east of North Belardo Road; and north of Chino Drive. The site is characterized by a vacant and generally flat condition exhibiting a prevailing gentle slope from west to east. The vacant site has been subject to routine maintenance and as a result, the grounds have been kept relatively cleared of vegetation cover, with the exception of some shrubs and trees along the westerly and southerly edges of the property. As such, the cleared site is absent of any naturally occurring drainages, such as washes or streams.

Project Description and Proposed Storm Drain Improvements

The proposed project would utilize the entire site for the development of twenty-four (24) one- and two-story attached dwelling units, arranged in a multi-building configuration. Private recreational site amenities would include a swimming pool/spa, a small lawn, garden rooms, water features, and walkways in a central courtyard setting. Other supporting spaces would include an administration office, gym room, yoga room, and spa/massage room. A landscaping design for project frontage and interior common areas would be incorporated into the site design. Primary vehicular access would occur from N. Belardo Road on the west and N. Palm Canyon Drive on the east. Parking facilities would be provided in the form of private garages and designated parking spaces. No commercial or other public facilities are included in this residential project.

The post-development project condition has a total hydrologic area of 2.4 acres, of which 1.92 acres (80%) are impervious cover consisting of buildings and hardscape and the remaining 0.48 acres (20%) are pervious cover consisting of landscaping. Based on these conditions, the project includes an on-site retention facility (underground CMP structure) sized to capture and infiltrate the volumetric-based stormwater quality design volume (V_{bmp}) associated with the site. Using the Whitewater Watershed BMP Design Worksheet calculations, the V_{bmp} produced by the project site is 2,088 cubic feet. In accordance with the current preliminary grading and hydrology design, site runoff will be captured at multiple inlet points and conveyed via underground pipes to one underground retention facility with a minimum capacity of 2,088 cubic feet to match required water quality volume (Vbmp). The underground retention structure will consist of 48-inch-diameter corrugated metal pipe (CMP) wrapped with ¾-inch rock and non-woven geotextile fabric. Only runoff in excess of the BMP capacity will be conveyed via a pipe connection to the existing 60-inch RCP storm drain line operated by Riverside County Flood Control (RCFC). The RCFC facility is located immediately north of the project and forms part of the Palm Springs Master Drainage Plan. By introducing on-site retention for the V_{BMP}, the project will not result in hydromodifications or changes to the hydrologic regime that will permanently impact downstream channels, receiving waters, or habitat integrity. No Hydrologic Conditions of Concern are expected to result from the project.

Location of Activities:

The project does not have a specific area where heightened activities would warrant additional site design, source control or treatment measures other than the proposed retention facility for the project's drainage management area of 2.4 acres.

Waste Generation:

The proposed project is expected to generate non-hazardous solid waste typical of most residential land uses. The project's waste will be collected and managed by Palm Springs Disposal Services on a typical residential schedule. Pollution prevention, waste reduction, and recycling practices will be implemented on-site as required or recommended by the City of Palm Springs.

II. Site Characterization

Land Use Designation or Zoning:

Existing General Plan Land Use: Central Business District

Proposed General Plan Land Use: TBD by Entitlements Process

Existing Zoning: R-2 Limited Multiple-Family Residential Zone
and CBD Central Business District Zone

Proposed Zoning: TBD by Entitlements Process

Current Property Use:	Vacant
Proposed Property Use:	Multiple-Family Residential Development
Availability of Soils Report:	Y ☐ N ☒ *(Expected to be available for Final WQMP)*
Phase 1 Site Assessment:	Y ☐ N ☒

Receiving Waters for Urban Runoff from Site

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use Designated Receiving Waters
Tahquitz Creek	Not listed as impaired	MUN (potential), GWR, RE I, REC II, COLD, WILD	Water body is not classified as RARE
Palm Canyon Creek	Not listed as impaired	MUN (*potential*), AGR, GWR, REC I, REC II, WARM, WILD,	Water body not classified as RARE
Whitewater River	Not listed as impaired.	MUN, AGR, GWR, REC I, REC II, WARM (*Intermittent*) COLD, WILD, POW	Water body not classified as RARE
Coachella Valley Stormwater Channel	DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Indicator Bacteria, PCBs (Polychlorinated Biphenyls), Toxaphene, Toxicity	FRSH, REC I *c*, REC II *c*, WARM, WILD, RARE *d*	Approximately 16.4 miles

The preceding table is based on the **2014 and 2016 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report.** All impairments listed for Coachella Valley Stormwater Channel are under Category 5, which apply to water segments where standards are not met and a Total Maximum Daily Load (TMDL) is required, but not yet completed. All pollutant sources for this segment are unknown.

Abbreviations:
I – Intermittent Beneficial Use
FRSH – Freshwater Replenishment
REC I – Water Contact Recreation
REC II – Non-Contact Water Recreation
WARM – Warm Freshwater Habitat
WILD – Wildlife Habitat
RARE – Preservation of Rare, Threatened, or Endangered Species
MUN – Municipal & Domestic Supply
AGR – Agricultural Supply
GWR – Groundwater Recharge
AQUA – Acuaculture
COLD – Cold Freshwater Habitat
POW – Hydropower Generation

a. **Although it is not encouraged, children play in the water infrequently on the wildlife reserve**
b. **Section of perennial flow from approximately Indio to the Salton Sea.**
c. **Unauthorized use.**
d. **Rare, endangered, or threatened wildlife exists in or utilizes some of this waterway.**

III. Pollutants of Concern

Table 1. Pollutant of Concern Summary

Pollutant Category	Potential for Project	Causing Receiving Water Impairment
Bacteria/Virus (Pathogens)	Yes	Yes (Pathogens)
Heavy Metals	Yes	No
Nutrients	Yes	No
Toxic Organic Compounds	Yes	Yes
Sediment/Turbidity	Yes	No
Trash & Debris	Yes	No
Oil & Grease	Yes	No

The Coachella Valley Stormwater Channel is impaired by **DDT (Dichlorodiphenyltrichloroethane), Dieldrin, Indicator Bacteria, PCBs (Polychlorinated Biphenyls), Toxaphene,** and **Toxicity**.

- The project is not anticipated to generate DDT contamination because the use of this substance (synthetic organic compound) has been banned since 1972; therefore, it will not be handled or form part of the proposed residential development.
- The project is not anticipated to generate Dieldrin contamination because the use of this substance (synthetic organic compound) was related to agricultural operations (found in pesticides for crops) and it has been illegal since 1987; therefore, it will not be handled or form part of the proposed residential development.
- The project is not anticipated to produce polychlorinated biphenyls (PCBs) because manufacturing this substance (synthetic organic compound) stopped in 1977 and its application was banned in 1979; therefore, it will not be handled or form part of the proposed residential development.
- The proposed development is not anticipated to produce toxaphene because the use of this substance (synthetic organic compound) has been illegal since 1990; therefore, it will not be handled or form part of the proposed residential development.
- The project has the potential to generate small amounts of pathogens (bacteria/virus). These pollutants are generally associated with various human activities, but pathogens are also present in natural environments. Moreover, pathogens can be associated with wild and domesticated animal waste. The residential development is not expected to be a significant source of pathogens. Source control measures consisting of site management will prohibit waste disposal and other activities that could result in pathogen releases. Runoff from the project will be conveyed to proposed retention facility sized to handle the project-specific design capture volume for water quality purposes (Vbmp), therefore addressing this pollutant.
- The project is not expected to generate or discharge toxicants, such as toxic metals and synthetic organic compounds that would result in detrimental physiological responses in human, plant, animal, or indigenous aquatic life in the receiving waters. Project runoff will be conveyed to proposed retention facility sized to handle the project-specific design capture volume for water quality purposes (Vbmp), therefore addressing this pollutant.

Table 1 (*Potential Pollutants Generated by Land Use Type*) of the *Riverside County Whitewater River Region Stormwater Quality Best Management Practice Design Handbook for Low Impact Development* identifies eight (8) land use categories with their corresponding potential pollutants that may be generated.

Type of Development (Land Use)	**Sediment/ Turbidity**	**Nutrients**	**Toxic Organic Compounds**	**Trash & Debris**	**Bacteria & Viruses (*Also: Pathogens*)**	**Oil & Grease**	**Heavy Metals**
Attached Residential Development	P	P	N	P	P	P(2)	N

Abbreviations:

P = Potential N = Not potential

Notes:

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected.
(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected.
(3) A potential Pollutant if land use involves food or animal waste products.
(4) Specifically, petroleum hydrocarbons.
(5) Specifically, solvents; however, this Pollutant is not expected at commercial office or commercial retail sites, unless said retail is vehicle related.
(6) A potential Pollutant if the project includes outdoor storage or metal roofs; otherwise not expected.

Potential Project Pollutants: The project's residential land uses have the generalized potential to produce sediment/turbidity; nutrients; trash and debris; bacteria and viruses (including pathogens); and oil and grease.

Legacy Pollutants: There is no evidence or other known information of legacy pollutants on-site.

Pollutants of Concern: Based on the comparison of potential project pollutants with the pollutant categories causing receiving water impairments, the pollutants of concern include **bacteria/virus**. The project's storm drain improvements include an on-site retention facility sized to treat the project-specific design capture volume for water quality purposes (Vbmp) before being conveyed into the existing RCFC storm drain line.

IV. Hydrologic Conditions of Concern

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☐ The project will be required to retain urban runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater"). This section does not need to be completed; however, retention facility design details and sizing calculations must be included in Appendix F.

No ☒ This section must be completed.

This Project meets the following condition:

☒ **Condition A**: 1) Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4 or engineered and maintained channel, 2) the discharge is in full compliance with local land use authority requirements for connections and discharges to the MS4 (including both quality and quantity requirements), 3) the discharge would not significantly impact stream habitat in proximate Receiving Waters, **and** 4) the discharge is authorized by the local land use authority.

Note: Condition A is met as follows:

The project's storm drain improvements include one on-site retention facility (underground CMP structure) sized to capture and infiltrate the volumetric-based stormwater quality design volume (VBMP totaling 2,088 cubic feet) generated from the 2.4-acre site. Stormwater discharge into the existing RCFC facility will only occur after the Vbmp is retained and infiltrated on site. Based on the project size and on-site retention capacity, site discharge will not significantly impact stream habitat in proximate receiving waters. The discharge of treated stormwater will be subject to the applicable approval conditions by RCFC and the City of Palm Springs.

☐ **Condition B**: The project disturbs less than 1 acre and is not part of a larger common plan of development that exceeds 1 acre of disturbance. The disturbed area calculation must include all disturbances associated with larger plans of development.

☐ **Condition C**: The project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by, where applicable, complying with the local land use authority's on-site retention ordinance, or minimizing impervious area on a site and incorporating other Site-Design BMP concepts and LID/Site Design BMPs that assure non-exceedance of pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the local land use authority.

☐ **None:** Refer to Section 3.4 of the Whitewater River Region WQMP Guidance document for additional requirements.

Supporting engineering studies, calculations, and reports are included in Appendix C.

V. Best Management Practices

This project implements Best Management Practices (BMPs) to address the Pollutants of Concern that may potentially be generated from the use of the project site. These BMPs have been selected and implemented to comply with Section 3.5 of the WQMP Guidance document, and consist of Site Design BMP concepts, Source Control, LID/Site Design and, if/where necessary, Treatment Control BMPs as described herein.

V.1 Site Design BMP Concepts, LID/Site Design and Treatment Control BMPs

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☒ The project will be required to retain Urban Runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater). **The LID/Site Design measurable goal has thus been met (100%), and Sections V.1.A and V.1.B do not need to be completed**; however, retention facility design details and sizing calculations must be included in Appendix F, and '100%' should be entered into Column 3 of Table 6 below.

No ☐ Section V.1 must be completed.

This section of the Project-Specific WQMP documents the LID/Site Design BMPs and, if/where necessary, the Treatment Control BMPs that will be implemented on the project to meet the requirements detailed within Section 3.5.1 of the WQMP Guidance document. Section 3.5.1 includes requirements to implement Site Design Concepts and BMPs, and includes requirements to address Pollutants of Concern with BMPs. Further, sub-section 3.5.1.1 specifically requires that Pollutants of Concern be addressed with LID/Site Design BMPs to the extent feasible.

LID/Site Design BMPs are those BMPs listed within Table 2 below which promote retention and/or feature a natural treatment mechanism; off-site and regionally-based BMPs are also LID/Site Design BMPs, and therefore count towards the measurable goal, if they fit these criteria. This project incorporates LID/Site Design BMPs to fully address the Treatment Control BMP requirement where and to the extent feasible. If and where it has been acceptably demonstrated to the local land use authority that it is infeasible to fully meet this requirement with LID/Site Design BMPs, Section V.1.B (below) includes a description of the conventional Treatment Control BMPs that will be substituted to meet the same requirements. In addressing Pollutants of Concern, BMPs are selected using Table 2 below.

Table 2. BMP Selection Matrix Based Upon Pollutant of Concern Removal Efficiency (1)

(Sources: Riverside County Flood Control & Water Conservation District Design Handbook for Low Impact Development Best Management Practices, dated September 2011, the Orange County Technical Guidance Document for Water Quality Management Plans, dated May 19, 2011, and the Caltrans Treatment BMP Technology Report, dated April 2010 and April 2008)

Pollutant of Concern	Landscape Swale[2, 3]	Landscape Strip[2, 3]	Biofiltration (with underdrain)[2, 3]	Extended Detention Basin[2]	Sand Filter Basin[2]	Infiltration Basin[2]	Infiltration Trench[2]	Permeable Pavement[2]	Bioretention (w/o underdrain)[2, 3]	Other BMPs Including Proprietary BMPs[4, 6]
Sediment & Turbidity	M	M	H	M	H	H	H	H	H	Varies by Product[5]
Nutrients	L/M	L/M	M	L/M	L/M	H	H	H	H	
Toxic Organic Compounds	M/H	M/H	M/H	L	L/M	H	H	H	H	
Trash & Debris	L	L	H	H	H	H	H	L	H	
Bacteria & Viruses (also: Pathogens)	L	M	H	L	M	H	H	H	H	
Oil & Grease	M	M	H	M	H	H	H	H	H	
Heavy Metals	M	M/H	M/H	L/M	M	H	H	H	H	

Abbreviations:
L: Low removal efficiency   M: Medium removal efficiency   H: High removal efficiency

Notes:
(1) Periodic performance assessment and updating of the guidance provided by this table may be necessary.
(2) Expected performance when designed in accordance with the most current edition of the document, "Riverside County, Whitewater River Region Stormwater Quality Best Management Practice Design Handbook".
(3) Performance dependent upon design which includes implementation of thick vegetative cover. Local water conservation and/or landscaping requirements should be considered; approval is based on the discretion of the local land use authority.
(4) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP (including proprietary filters, hydrodynamic separators, inserts, etc.), or newly developed/emerging stormwater treatment technologies.
(5) Expected performance should be based on evaluation of unit processes provided by BMP and available testing data. Approval is based on the discretion of the local land use authority.
(6) When used for primary treatment as opposed to pre-treatment, requires site-specific approval by the local land use authority.

V.1.A Site Design BMP Concepts and LID/Site Design BMPs

Note: This section is not applicable Due to conformance with local retention ordinance per Section 3.5.1.2 of Whitewater River Region WQMP Guidance Document.

This section documents the Site Design BMP concepts and LID/Site Design BMPs that will be implemented on this project to comply with the requirements detailed in Section 3.5.1 of the WQMP Guidance document.

- Table 3 herein documents the implementation of the Site Design BMP Concepts described in sub-sections 3.5.1.3 and 3.5.1.4.
- Table 4 herein documents the extent to which this project has implemented the LID/Site Design goals described in sub-section 3.5.1.1.

Table 3. Implementation of Site Design BMP Concepts

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for BMPs Indicated as No or N/A
Site Design BMP Concept 1	**Minimize Urban Runoff, Minimize Impervious Footprint, and Conserve Natural Areas (See WQMP Section 3.5.1.3)**	Conserve natural areas by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	☐	☐	☒	The project will occupy the entire property. The project site is not designated as a conservation area or other recognized environmentally sensitive condition.
		Conserve natural areas by incorporating the goals of the Multi-Species Habitat Conservation Plan or other natural resource plans.	☐	☐	☒	The project site is not designated as a conservation area or other recognized environmentally sensitive condition.
		Preserve natural drainage features and natural depressional storage areas on the site.	☐	☐	☒	The proposed development will occupy the entire site.
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	☒	☐	☐	The project site does not have significant vegetation coverage. Native and drought tolerant vegetation will be part of the landscape design.
		Use natural drainage systems.	☐	☒	☐	Engineered storm drain conveyances will be used instead of a natural drainage system.
		Where applicable, incorporate Self-Treating Areas	☐	☒	☐	This project does not have unused open space that would qualify as self-treating.
		Where applicable, incorporate Self-Retaining Areas	☐	☒	☐	This project does not have unused open space that would qualify as self-retaining.
		Increase the building floor to area ratio (i.e., number of stories above or below ground).	☐	☒	☐	The project includes one and two-story structures.
		Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.	☒	☐	☐	The proposed driveways are designed according to City standards.
		Reduce widths of streets where off-street parking is available.	☒	☐	☐	The proposed driveways are designed according to City standards.
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	☒	☐	☐	Landscaping improvements are proposed to reduce impervious surfaces.
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☒	No other Site Design BMP concepts are proposed.

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Design residential and commercial sites to contain and infiltrate roof runoff, or direct roof runoff to landscaped swales or buffer areas.	☒	☐	☐	
		Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	☐	☒	☐	Sidewalks will be curb-adjacent and will drain toward the proposed wedge curbs.
		Incorporate landscaped buffer areas between sidewalks and streets.	☐	☒	☐	Curb-adjacent sidewalks are proposed.
		Use natural or landscaped drainage swales in lieu of underground piping or imperviously lined swales.	☐	☒	☐	Imperviously lined conveyances and underground piping are proposed throughout the project.
		Where soil conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	☒	☐	☐	The proposed infiltration system consists of underground perforated pipe (CMP).
		Maximize the permeable area by constructing walkways, trails, patios, overflow parking, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces such as pervious concrete, porous asphalt, unit pavers, and granular materials.	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.
		Use one or more of the following:				
		Rural swale system: street sheet flows to landscaped swale or gravel shoulder, curbs used at street corners, and culverts used under driveways and street crossings.	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.
		Urban curb/swale system: street slopes to curb; periodic swale inlets drain to landscaped swale or biofilter.	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.
		Dual drainage system: first flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to MS4s.	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☒	☐	☐	On-site retention system consisting of underground CMP.
		Use one or more of the following for design of driveways and private residential parking areas:				
		Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under the tires).	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.
		Uncovered temporary or guest parking on residential lots paved with a permeable surface, or designed to drain into landscaping.	☐	☒	☐	Not proposed based on preliminary engineering, street, and storm drain plans. To be confirmed in the final design.

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2 (cont'd)	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	
		Use one or more of the following for design of parking areas:				
		Where landscaping is proposed in parking areas, incorporate parking area landscaping into the drainage design.	☒	☐	☐	
		Overflow parking (parking stalls provided in excess of the Permittee's minimum parking requirements) may be constructed with permeable pavement.	☐	☐	☒	
		Other comparable and equally effective Site Design BMP (or BMPs) as approved by the local land use authority (Note: Additional narrative required describing BMP and how it addresses site design concept).	☐	☐	☒	

<u>Project Site Design BMP Concepts:</u>

Note: This section is not applicable Due to conformance with local retention ordinance per Section 3.5.1.2 of Whitewater River Region WQMP Guidance Document.

<u>Alternative Project Site Design BMP Concepts:</u>

Not Applicable

Table 4. LID/Site Design BMPs Meeting the LID/Site Design Measurable Goal

(1) DRAINAGE SUB-AREA ID OR NO.	(2) LID/SITE DESIGN BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF LID/SITE DESIGN BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
Area A	Infiltration BMP (Underground Retention Structure)	Bacteria/virus	Bacteria/virus	H	V_{BMP}: 2,088 CF Storage Provided: 2,088 CF	2.40
TOTAL PROJECT AREA TREATED WITH LID/SITE DESIGN BMPs (NEAREST 0.1 ACRE)						2.40

*** LID/Site Design BMPs listed in this table are those that completely address the 'Treatment Control BMP requirement' for their drainage sub-area.**

Justification of infeasibility for sub-areas not addressed with LID/Site Design BMPs

Not applicable.

V.1.B TREATMENT CONTROL BMPS

Conventional Treatment Control BMPs shall be implemented to address the project's Pollutants of Concern as required in WQMP Section 3.5.1 where, and to the extent that, Section V.1.A has demonstrated that it is infeasible to meet these requirements through implementation of LID/Site Design BMPs.

☐ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP completely address the 'Treatment Control BMP requirement' for the entire project site (and where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP Guidance document. Supporting documentation for the sizing of these LID/Site Design BMPs is included in Appendix F. ***Section V.1.B does not need to be completed**.

☒ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP do **NOT** completely address the 'Treatment Control BMP requirement' for the entire project site (or where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP. ***Section V.1.B must be completed.**

The Treatment Control BMPs identified in this section are selected, sized and implemented to treat the design criteria of V_{BMP} and/or Q_{BMP} for all project (and if required, existing site) drainage sub-areas which were not fully addressed using LID/Site Design BMPs. Supporting documentation for the sizing of these Treatment Control BMPs is included in Appendix F.

Table 5: Treatment Control BMP Summary

(1) DRAINAGE SUB-AREA ID OR NO.	(2) TREATMENT CONTROL BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF TREATMENT CONTROL BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TOTAL PROJECT AREA TREATED WITH TREATMENT CONTROL BMPs (NEAREST 0.1 ACRE)					N/A

V.1.C Measurable Goal Summary

This section documents the extent to which this project has met the measurable goal described in WQMP Section 3.5.1.1 of addressing 100% of the project's 'Treatment Control BMP requirement' with LID/Site Design BMPs. Projects required to retain Urban Runoff onsite in conformance with local ordinance are considered to have met the measurable goal; for these instances, '100%' is entered into Column 3 of the Table.

Table 6: Measurable Goal Summary

(1) Total Area Treated with LID/Site Design BMPs (Last row of Table 4)	(2) Total Area Treated with Treatment Control BMPs (Last row of Table 5)	(3) % of Treatment Control BMP Requirement addressed with LID/Site Design BMPs
2.40	N/A	100

V.2 Source Control BMPs

This section identifies and describes the Source Control BMPs applicable and implemented on this project.

Table 7. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Non-Structural Source Control BMPs			
Education for Property Owners, Operators, Tenants, Occupants, or Employees	☒	☐	
Activity Restrictions	☒	☐	
Irrigation System and Landscape Maintenance	☒	☐	
Common Area Litter Control	☒	☐	
Street Sweeping Private Streets and Parking Lots	☒	☐	
Drainage Facility Inspection and Maintenance	☒	☐	
Structural Source Control BMPs			
Storm Drain Inlet Stenciling and Signage	☒	☐	
Landscape and Irrigation System Design	☒	☐	
Protect Slopes and Channels	☐	☒	Not part of the proposed project.
Provide Community Car Wash Racks	☐	☒	Not part of the proposed project.
Properly Design*:			
Fueling Areas	☐	☒	Not part of the proposed project.
Air/Water Supply Area Drainage	☐	☒	Not part of the proposed project.
Trash Storage Areas	☐	☒	Not part of the proposed project.
Loading Docks	☐	☒	Not part of the proposed project.
Maintenance Bays	☐	☒	Not part of the proposed project.
Vehicle and Equipment Wash Areas	☐	☒	Not part of the proposed project.
Outdoor Material Storage Areas	☐	☒	Not part of the proposed project.
Outdoor Work Areas or Processing Areas	☐	☒	Not part of the proposed project.
Provide Wash Water Controls for Food Preparation Areas	☐	☒	Pursuant to Section E.4.b.v of the Whitewater River Region MS4, discharges from food-related wastes into the storm drain system or MS4 are prohibited.

*Details demonstrating proper design must be included in Appendix F.

Non-Structural Source Control BMPs

Education Program: (Property management/operator)

Employees, maintenance staff, and residents should be informed on topics related to stormwater pollution and prevention through various means, which can include the distribution of printed materials or public posting of rules or activity restrictions. A series of guidelines should be formulated and promoted to communicate beneficial habits and restricting activities which could impact the storm drain system. Appendix D includes samples of the educational materials that can be used in implementing this project-specific WQMP.

Activity Restrictions: (Property management/operator)

The following activities should be prevented or prohibited on-site: littering; discharge and waste dumping into parking storm drain inlets; blowing, sweeping or hosing of debris into streets or parking lots; nuisance water flows from irrigation.

Irrigation System and Landscape Maintenance: (Property management/operator)

Operation and Maintenance responsibilities and scheduling should be adhered to throughout the life of the project. The irrigation and landscape maintenance will help increase the effectiveness of these systems and minimize the amount of runoff that enters the storm drain system. Erosion and the conveyance of pesticides/fertilizers in runoff should also be prevented through proper routine maintenance. Routine irrigation system and landscape maintenance will also serve as a vector control measure due to the minimization of nuisance water runoff and stagnation.

Common Area Litter Control: (Property management/operator)

Common area litter control should be implemented to reduce pollution in runoff. Routine or scheduled monitoring should be performed in the common areas, landscaped areas, parking lots, and along the perimeter walls of the project. Any observed accumulated trash, vegetation debris or improper disposal should be addressed promptly by the designated staff. Common area litter control measures can be coordinated and improved by the landscaping maintenance that will take place at the site. The raking or sweeping of trash shall only be performed in manner that avoids trash from entering the storm drain system. All landscape-related debris or maintenance deficiencies are to be corrected immediately.

Paved Area Sweeping and Cleaning: (Property management/operator)

Paved area sweeping and cleaning are recommended on a routine basis to prevent trash, sediment, and other debris from being conveyed into the on-site storm drain system. Paved area sweeping should be performed during dry weather if possible and the frequency should be flexible to accommodate climate conditions and areas of concern. Street sweeping equipment must be operated only by trained personnel based on the manufacturer’s specifications. Street sweeping equipment should be properly maintained off-site by the operator. Sweeping equipment should not be maintained or washed off on-site. All collected debris must be taken to an approved permanent disposal site.

Structural Source Control BMPs

The project will incorporate measures to discourage illegal dumping in the proposed private storm drain system.

- MS4 Stenciling: **(Property management/operator)**

  At each storm drain inlet, a stencil or fixed sign (including medallions) should contain a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. The legibility of markers and signs should be maintained throughout the life of the project.

- Rules and Regulations: **(Property management/operator)**

  The residential management should establish and implement rules that prohibit improper non-stormwater discharge into the storm drain system. This measure may also be considered non-structural and form part of the activity restrictions associated with the site's standard operating procedures.

Landscape and Irrigation System Design: (Property management/operator)

The site's structural source control BMP involves an efficient landscape irrigation design. The system will include native or drought-tolerant plants and mechanisms to minimize excess irrigation and nuisance water into the stormwater conveyance system while working to reduce soil amendments and irrigation frequency. The system should also minimize the conveyance of landscape related chemicals, including pesticides.

Trash Containers: (Property management/operator)

Trash containers shall be leak proof and have attached covers or lids. Connection of trash to the MS4 shall be prohibited.

Storm Drain System Facilities: (Property management/operator)

Catch basins and storm drainage facilities on-site should be inspected, cleaned, and maintained routinely. Maintenance staff should take prompt action to correct or repair malfunctioning facilities.

Safer Alternative Products (CASQA SC-35): (Property management/operator)

The use of less harmful products as alternatives to chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, and consumables will be pursued under the guidance of SC-35 primarily aimed common areas of the project. The objective of this Source Control BMP will be to integrate the measures as much as possible with the future programs at this facility.

Note about Wash Water Controls for Food Preparation Areas: Pursuant to Section E.4.b.v of the Whitewater River Region MS4, illicit discharges to the MS4 of food-related wastes (e.g. grease, fish processing, and restaurant kitchen mat and trash bin water, etc.) are prohibited. Food preparation areas (per State Health & Safety Code 27520) shall have either contained areas or sinks, each with connections to the sanitary sewer for disposal of wash waters containing kitchen and food wastes. The entry of wash water controls into urban runoff or the proposed storm drain system is prohibited.

V.3 Equivalent Treatment Control BMP Alternatives

Not applicable.

V.4 Regionally-Based BMPs

Not Applicable

VI. Operation and Maintenance Responsibility for BMPs

These operations and maintenance are provided to serve as a guidance for future Final WQMP documentation. Additional details and procedures may be introduced by Final WQMP documentation as necessary based on a final site and engineering design.

TABLE 8 -OPERATIONS AND MAINTENANCE

BMP Requiring Maintenance	Party Responsibility	Recommended Inspection and Maintenance Frequency	Recommended Self-Inspection and Record Keeping	Implementation Period	Recommended O & M Activities and Process
Landscaped Areas	Property Owner, Operator, Hired Management, Home Owner's Association	At least twice monthly or according to a maintenance schedule.	Quarterly summaries of inspection and maintenance activities should be appended to the WQMP.	Post-Construction	(See following page)
Irrigation System	Property Owner, Operator, Hired Management, Home Owner's Association	At least twice monthly or according to a maintenance schedule.			
Common Area Litter Control	Property Owner, Operator, Hired Management, Home Owner's Association	Based on trash pick-up intervals and according to a maintenance schedule.			
Paved Area Sweeping	Property Owner, Operator, Hired Management, Home Owner's Association	Twice monthly or according to a maintenance schedule			
Storm Drain System	Property Owner, Operator, Hired Management, Home Owner's Association	Quarterly and after storm events or according to a maintenance schedule			
Retention Basin	Property Owner, Operator, Hired Management, Home Owner's Association	Quarterly and after storm events or according to an established maintenance schedule			
Underground Retention Facilities	Property Owner, Operator, Hired Management, Home Owner's Association	Quarterly and after storm events or according to a maintenance schedule			

*Note: "Storm events" refer to precipitation events producing 0.5 inches of rain or greater within a 48-hour period. The occurrence of these events may be confirmed against the local rain event summaries published in the National Weather Service or National Oceanic and Atmospheric Administration web site (www.noaa.gov). The recommended inspection, maintenance, and recordkeeping practices in this WQMP may be addressed by a formal schedule, operations manual, and other standard operating procedures which may be developed for this site.

Note: The maintenance recommendations, including the responsible parties, inspection intervals, and maintenance intervals, are not intended to be exhaustive in nature and should not serve as the sole source of on-site operating procedures. As the Final WQMP documentation is produced for City review and approval and as the project starts operating, additional maintenance procedures may be necessary to implement. Where applicable, refer to the equipment manufacturer's recommendations.

Description of Maintenance Requirements:

Landscaped Areas: All trimming, pruning, and removal of fallen organic material from plants, shrubs, and trees should be collected twice monthly or per an established landscape maintenance plan, stored in an appropriate location and transported to an approved green-waste collection facility. Any equipment or material temporarily staged during maintenance activities should be placed away from drainage courses and storm drain inlets. Contracted maintenance staff should haul collected material promptly following the maintenance activities to avoid prolonged on-site storage. The planting materials are to remain as indicated on the approved set of landscape planting plans. In conjunction with the routine activities, maintenance staff should verify that the landscape design continues to function properly by adjusting to eliminate overspray to hardscape areas and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given the time of year, weather and day or nighttime temperatures.

Irrigation Systems: Water conservation is to be maintained at all times per the approved irrigation plans. Monitoring of the irrigation system should be provided at least twice monthly or as necessary to ensure that appropriate watering levels are maintained and to verify that no piping or irrigation heads are leaking. Any debris, sediment, mineral and grit deposits should be removed from the irrigation system at regular intervals to provide consistent watering levels.

The irrigation and landscape maintenance will help increase the effectiveness of these systems and minimize the amount of runoff that enters the storm drain system. Erosion and the conveyance of pesticides/fertilizers in runoff will also be prevented through routine maintenance. Routine irrigation system and landscape maintenance will also serve as a vector control measure due to the minimization of nuisance water runoff and stagnation.

Trash Management and Common Area Litter Control: Common area litter control should be implemented to reduce pollution in runoff. Routine or scheduled monitoring should be performed in the common areas, landscaped areas, parking lots, in and around the trash enclosures, and along the perimeter walls of the project. Any observed accumulated trash, vegetation debris or improper disposal should be addressed promptly by the designated staff. Common area litter control measures can be coordinated and improved by the landscaping maintenance that will take place at the site. All landscape-related debris or maintenance deficiencies are to be corrected immediately. No trash should be allowed to be stored at the base of the containers. Pick-up intervals are to be determined so that the containers are not overfilled. Only approved materials and chemicals should be allowed in the dumpsters.

Storm Drain System: Storm water conveyance systems, including inlets, outlets, cleanouts, manholes and pipelines within the project are to be inspected quarterly and after each major storm event or according to a maintenance schedule. All parts of the system are to be periodically cleaned to ensure that the system works properly during any storm event. Any waste collected from the cleaning activities is to be stored and properly disposed of.

Paved Area Sweeping and Cleaning

Paved area sweeping and cleaning are recommended to prevent sediment, litter and other debris from being washed by runoff into the on-site storm drain system. Paved area sweeping should be performed during dry weather if possible and the frequency should be flexible to accommodate climate conditions and areas of concern. Street sweeping equipment must be operated only by trained personnel based on the manufacturer’s specifications. Street sweeping equipment should be properly maintained off-site by the operator. Sweeping equipment should not be maintained or washed off on-site. All collected debris must be taken to an approved permanent disposal site.

Underground Retention Facilities: The project proposes a Contech Underground Corrugated Metal Pipe (CMP) Retention System or approved equal. The location of this facility shown in the WQMP Site Plan (Appendix B). The following inspection and maintenance guidelines are provided for reference purposes. Prior to the start of any inspection and maintenance activities, consult with current maintenance recommendations provided by the manufacturer.

Per the system manufacturer, the underground stormwater detention/infiltration must be properly inspected and maintained at regular intervals for purpose of performance and longevity.

Inspection

Inspection is the key to effective maintenance and is easily performed. Contech recommends ongoing quarterly inspections. The rate at which the system collects pollutants will depend more heavily on site specific activities rather than the size or configuration of the system. Inspections should be performed more often in equipment washdown areas, in climates where sanding and/or salting operations take place, and in various other instances in which higher accumulations of sediment or abrasive / corrosive conditions may exist. Inspection and maintenance records should be maintained for the life of the system.

Maintenance

Systems should be cleaned when inspection reveals that accumulated sediment or trash is clogging the discharge orifice. Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities. Contech suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

If inspectors observe any salt or other corrosive substance concentrations or accumulations in the system, or if salt or other corrosive substance is used or prevalent near the system, it is recommended to rinse the system above the spring line annually between late spring and early summer as part of the maintenance program. This maintenance is required for infiltration systems. Excessive salting should be avoided and pavement should be sealed to reduce salt infiltration from the surface.

Maintaining an underground detention or retention system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

The foregoing inspection and maintenance efforts help ensure underground pipe systems used for stormwater storage continue to function as intended by identifying recommended regular inspection and maintenance practices. Inspection and maintenance related to the structural integrity of the pipe or the soundness of pipe joint connections is beyond the scope of this guide.

Record Keeping: A copy of this project-specific WQMP shall be maintained on-site or remotely by the project owner or operator (Property Manager). Records of maintenance shall be appended to this WQMP based on the information provided by the contracted management.

VII. Funding

The funding source for operation and maintenance of each BMP identified in the Project Specific Master Water Quality Management Plan shall be the responsibility of *Old Las Palmas Partners LLC*. The owner recognizes that a source of funding is required to support the on-going operation and maintenance of BMPs, and that funding will continue for the life of the project.

By certifying the final project specific WQMP, the Project applicant is certifying that the funding responsibilities have been addressed and will be transferred to future owners. One example of how to adhere to the requirement to transfer operation and maintenance responsibilities is to record the project specific WQMP against the title to the property.

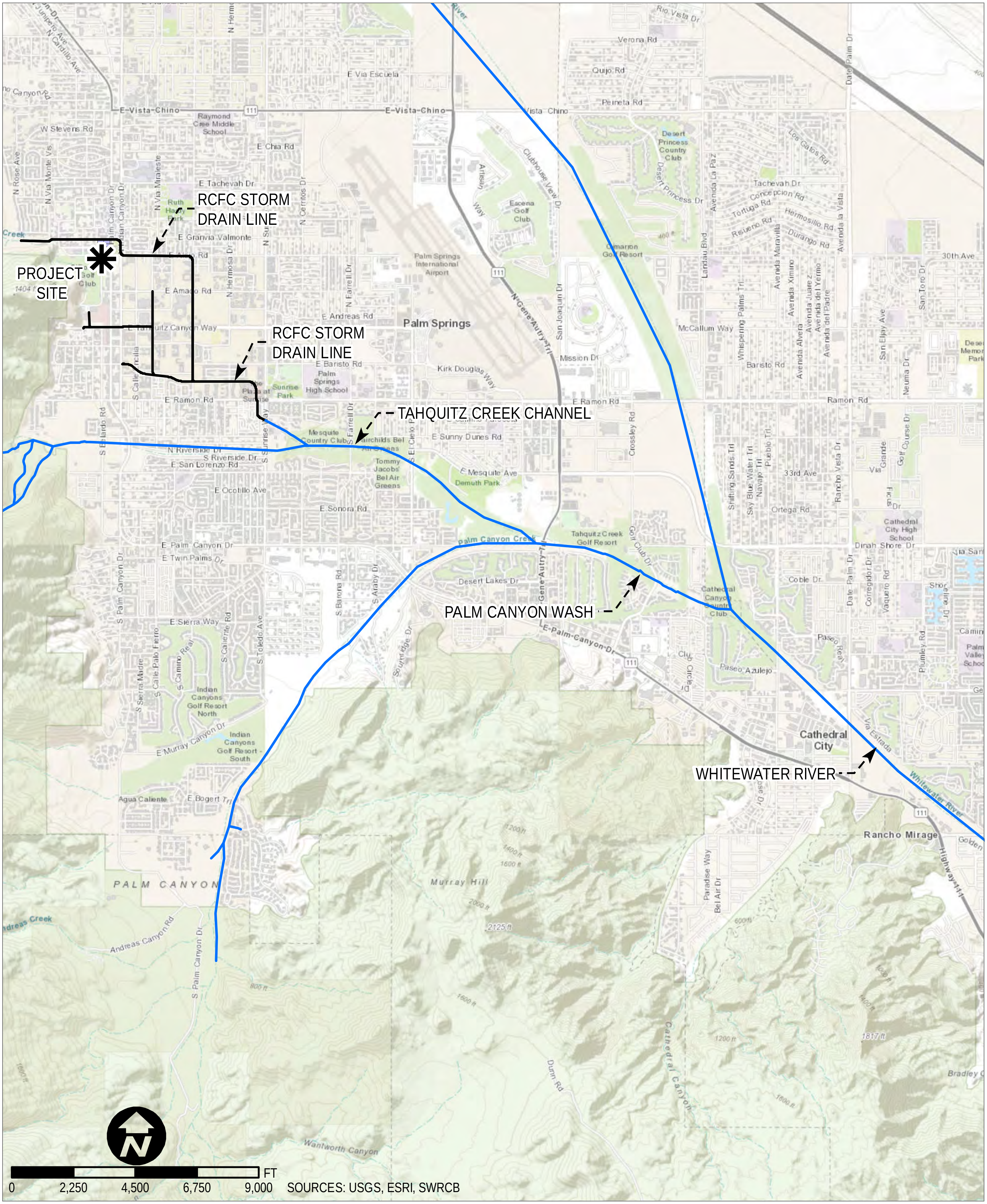
Appendix A

CONDITIONS OF APPROVAL

(TO BE PROVIDED)

Appendix B

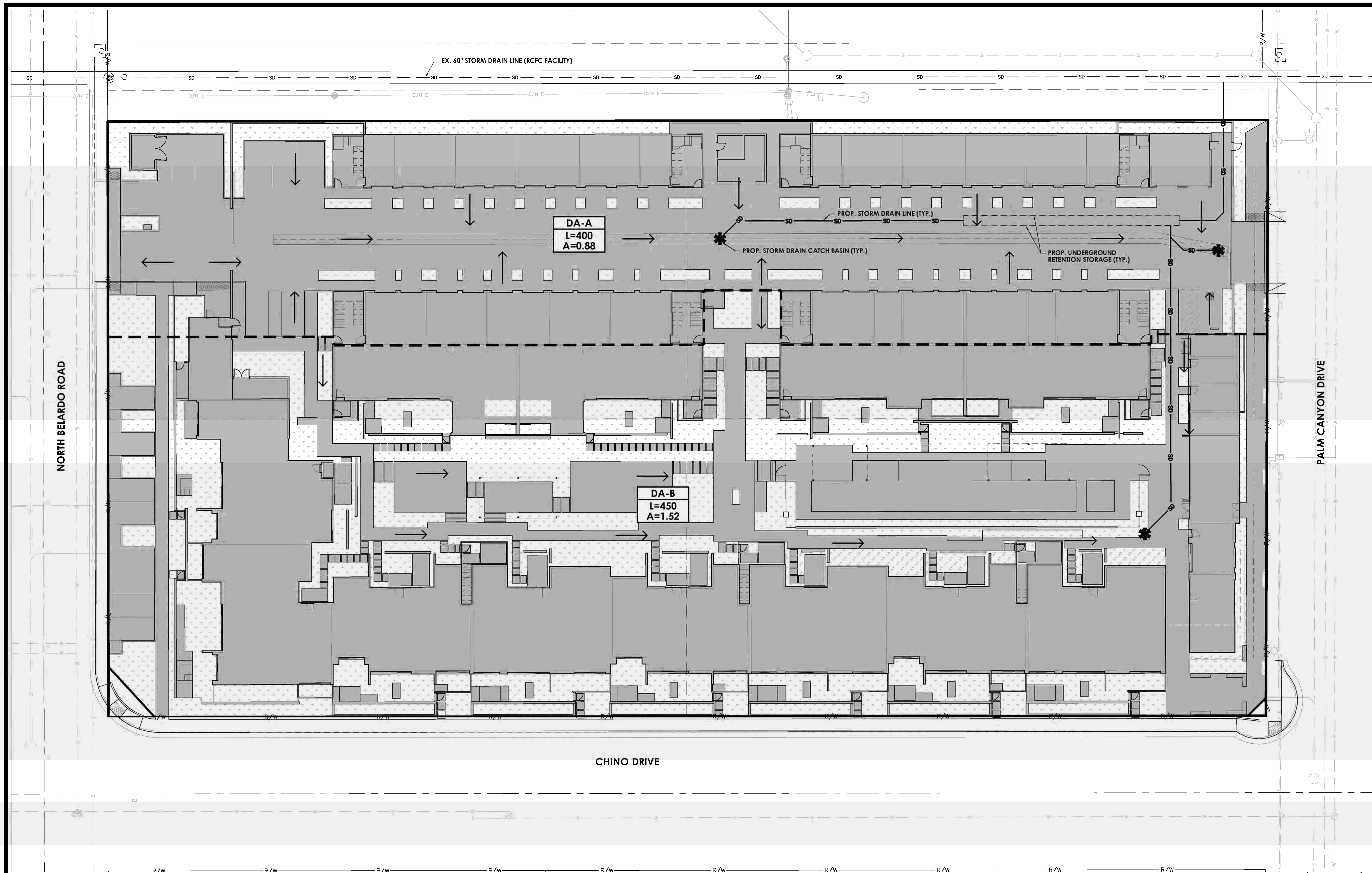
VICINITY MAP, WQMP SITE PLAN, AND RECEIVING WATERS MAP



MAP OF RECEIVING WATERS

MSA CONSULTING, INC.
> PLANNING > CIVIL ENGINEERING > LAND SURVEYING

DATE: 10/2/2020



BMP DESIGN VOLUME: TOTAL SITE	
ONSITE TRIBUTARY AREA:	2.400 AC.
IMPERVIOUS AREA WITHIN TRIBUTARY AREA:	1.920 AC.
IMPERVIOUS AREA RATIO:	80%
RUNOFF COEFFICIENT:	0.60
UNIT STORAGE VOLUME:	0.24 AC-IN/AC.
DESIGN STORAGE VOLUME OF BMP:	2,088 CU-FT
STORAGE VOLUME PROVIDED (cu-ft)	2,112 CU-FT

UNDERGROUND STORAGE SUMMARY

DURATION		WQMP ONLY
FLOOD VOLUME	(cu-ft)	2,088
PERCOLATION	(cu-ft/lf)	0
RETENTION/FOOT	(cu-ft/lf)	25.14
BASIN LENGTH	(lf)	84

VICINITY MAP
N.T.S.

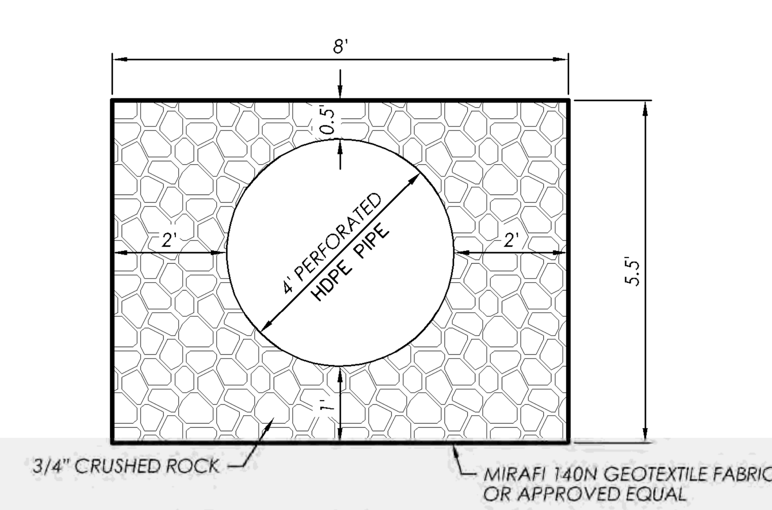
NORTH

0' 20' 40' 60' 80'
SCALE 1"=20'

LEGEND

- PROJECT BOUNDARY
- PROPOSED DRAINAGE AREA BOUNDARIES
- SD PROPOSED STORM DRAIN LINES
- PROPOSED UNDERGROUND RETENTION (PERFORATED CMP)
- STORM DRAIN INLETS WITH MS4 STENCILING OR SIGNAGE
- PROPOSED DRAINAGE DIRECTION
- DA — DRAINAGE SUB-AREA ID
- L = — FLOW TRAVEL LENGTH (FT)
- A = — AREA (AC)
- IMPERVIOUS AREA (BUILDINGS, STREETS & HARDSCAPE)
- PERVIOUS AREA (OPEN SPACE & LANDSCAPE)

AC.	ACREAGE	EX.	EXISTING
DA	DRAINAGE AREA	PROP.	PROPOSED
ELEV.	ELEVATION	RET.	RETENTION



UNDERGROUND STORAGE
N.T.S.

PROJECT NAME:	24-UNIT MULTI-FAMILY RESIDENTIAL
ADDRESS:	575 NORTH PALM CANYON DRIVE
PLAN:	PRELIMINARY WATER QUALITY MANAGEMENT PLAN (WQMP)
EXHIBIT DATE:	AUGUST 2021

MSA CONSULTING, INC.
> PLANNING > CIVIL ENGINEERING > LAND SURVEYING
34200 Bob Hope Drive, Rancho Mirage, CA 92270
760.320.9811 msaconsultinginc.com
RODNEY R. REED PE C67763

DESIGN BY JHC
DRAWN BY DG
CHECK BY JHC

Appendix C

SUPPORTING DETAIL RELATED TO HYDROLOGIC CONDITIONS OF CONCERN

(NOT APPLICABLE – SEE APPENDIX F FOR HYDROLOGY REPORT SUMMARY)

Appendix D

EDUCATIONAL MATERIALS

CHECKLIST FOR MINIMIZING VECTOR PRODUCTION IN STORMWATER MANAGEMENT STRUCTURES

OUTDOOR CLEANING ACTIVITIES AND PROFESSIONAL MOBILE SERVICE PROVIDERS

CALIFORNIA STORMWATER BMP HANDBOOK - MUNICIPAL

SC-35: Safer Alternative Products

SC-73: Landscape Maintenance

SC-74: Drainage System Maintenance

SD-12: Efficient Irrigation

SD-13: Storm Drain Signage

Helpful telephone numbers and links:

WATER AGENCY LIST in Riverside County

City of Banning	(951) 922-3130
City of Beaumont	(951) 769-8520
City of Blythe	(760) 922-6161
City of Coachella	(760) 398-3502
Coachella Valley Water District	(760) 398-2651
City of Corona	(951) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley MWD	(951) 674-3146
Farm Mutual Water Company	(951) 244-4198
City of Hemet	(951) 765-3712
Idyllwild Water District	(951) 659-2143
Jurupa Community Services District	(951) 360-8795
Lake Hemet MWD	(951) 658-3241
Lee Lake Water District	(951) 277-1414
March Air Force Base	(951) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8253
Rancho Caballero	(951) 780-9272
Rancho California Water District	(951) 296-6900
Ripley, CSA #62	(760) 922-4951
City of Riverside	(951) 351-6170
Rubidoux Services District	(951) 684-7580
Silent Valley Club, Inc	(951) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or online at
www.rcflood.org

Online resources include:

- Riverside County Flood Control and Water Conservation District
  www.rcflood.org
- California Storm Water Quality Association
  www.casqa.org
- State Water Resources Control Board
  www.swrcb.ca.gov/
- Power Washers of North America
  www.thepwna.org

StormWater Pollution

What you should know for...

OUTDOOR CLEANING ACTIVITIES AND PROFESSIONAL MOBILE SERVICE PROVIDERS

Storm drain pollution prevention information for:

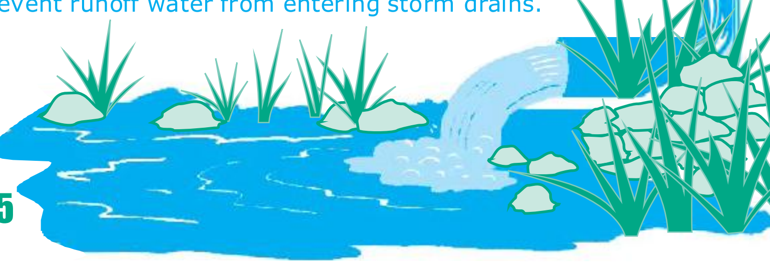
- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

Storm Drains are NOT connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills**.** Only emergency **Mechanical** repairs should be done in City streets and use drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Always prevent runoff water from entering storm drains.



REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555

Help Protect Our Waterways!

Use These Guidelines For Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or nearest body of water is ***PROHIBITED*** by law and can bring about stiff penalties.

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. *Each of us* can do our part to keep storm water clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose *small amounts* of power washing waste water to landscaped, gravel or unpaved surfaces.

Do...check with your local sanitary sewer agency's policies on wash water disposal regulations. (See list on reverse side).

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.

...ONLY RAIN... DOWN THE STORM DRAIN

Report illegal storm drain disposal, Call Toll Free

1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them for being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.

When cleaning surfaces with a *high-pressure washer* or *steam cleaner*, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks.

Screening Wash Water

A thorough dry cleanup before washing exterior surfaces, such as buildings and decks *without loose paint*, sidewalks, or plaza areas should be sufficient to protect receiving waters. Keep debris from entering the storm drain after cleaning by first passing the wash water first through a "20 mesh" or finer screen to catch the solid materials, then disposing the mesh in a refuse container.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or rubber mats.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Equipment and Supplies

For special materials, equipment and supplies:

- New Pig — (800) 468-4647
- Lab Safety Supply — (800) 356-0783
- C&H — (800) 558-90966
- W.W. Grainger — (800) 994-9174
- Cleaning Equipment Trade Association — (800) 441-0111

Adopt a pet from your local animal shelter or adoption centers at pet stores. A variety of animals, from purebred to mixed breed are waiting for loving arms and good homes. Consider volunteering at your local animal shelters. Volunteers, donations, food, newspapers, old towels and linens are needed to help the animals.

RIVERSIDE COUNTY ANIMAL SHELTER LOCATIONS:

BLYTHE
16450 West Hobson Way
Blythe, CA 92225
760-921-7857

HEMET
800 South Sanderson
Hemet, CA 92545
909 925-8025

INDIO
45-355 Van Buren
Indio, CA 92201
760-347-2319

RIVERSIDE
5950 Wilderness Avenue
Riverside, CA 92504
909-358-7387

FOR ALL OTHER AREAS CALL 1-888-636-7387

Riverside County gratefully acknowledges the City of Los Angeles Stormwater Program for the design concept of this brochure.

What's the Scoop?

TIPS FOR A HEALTHY PET AND A HEALTHIER ENVIRONMENT

CREATE A HEALTHY ENVIRONMENT in and around your home by following these simple pet practices. Your pet, family and neighbors will appreciate their clean comfortable surroundings.

HOUSEHOLD PETS

We all love our pets, but pet waste is a subject everyone likes to avoid. Pet waste left on trails, sidewalks, streets, and grassy areas is immediately flushed into the nearest waterway when it rains. Even if you can't see water near you, the rain or waste water WASHES all that PET WASTE and BACTERIA INTO THE STORMDRAIN, where it travels to your neighborhood creek or lake untreated. These animal droppings also contain nutrients that can promote the growth of algae, if they enter our streams and lakes. The risk of STORMWATER CONTAMINATION INCREASES, if pet wastes is allowed to accumulate in animal pen areas or left on sidewalks, streets, or driveways where runoff can carry them to storm sewers.

Some of the DISEASES THAT CAN SPREAD from pet waste are:
Campylobacteriosis — a bacterial infection that causes diarrhea in humans.
Salmonellosis — the most common bacterial infection transmitted to humans from animals.
Toxocarisis — roundworms transmitted from animals to humans.

Flies and other pest insects can also increase when pet waste is disposed of improperly, becoming a nuisance and adding yet another vector for disease transmission.

WHAT CAN YOU DO?

- SCOOP up pet waste and flush it down the toilet.
- NEVER DUMP pet waste into a storm drain or catch basin.
- USE the complimentary BAGS or mutt mitts offered in dispensers at local parks.
- CARRY EXTRA BAGS when walking your dog and make them available to other pet owners who are without.
- TEACH CHILDREN how to properly clean up after a pet.
- TELL FRIENDS AND NEIGHBORS about the ill effects of animal waste on the environment. Encourage them to clean up after pets.

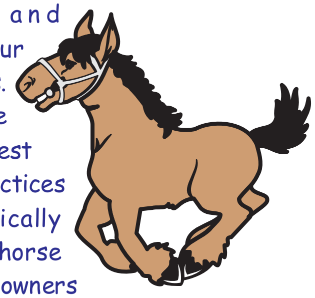
Did You Know ...
that Californians illegally dump about 80 million gallons of motor oil each year?

Many communities have "Scoop the Poop" laws that govern pet waste cleanup. Some of these laws specifically require anyone who walks an animal off of their property to carry a bag, shovel, or scooper. Any waste left by the animal must be cleaned up immediately. CALL YOUR LOCAL CODE ENFORCEMENT OFFICER to find out more about pet waste regulations.

Pets are only one of the many fixtures of suburban America that add to water pollution. Lawn fertilizers, rinse water from driveways and motor oil commonly end up in streams and lakes. **CALL 1-800-506-2555 FOR HOUSEHOLD HAZARDOUS WASTE COLLECTION LOCATION AND DATES.** Maintain your automobile to avoid leaks. Dispose of used vehicle fluids properly. Your pets can be poisoned if they ingest gas, oil or antifreeze that drips onto the pavement or is stored in open containers.

NEVER HOSE VEHICLE FLUIDS into the street or gutter. USE ABSORBENT MATERIALS such as cat litter to clean-up spills. SWEEP UP used absorbent materials and place in the trash.

HORSES AND LIVESTOCK



Fortunate enough to own a horse or livestock? You, too, can play a part in protecting and cleaning up our water resources. The following are a few simple Best Management Practices (BMPs) specifically designed for horse owners and landowners with horses.

- STORE your manure properly. Do not store unprotected piles of manure in places where runoff may enter streams, or flood waters may wash the manure away. Place a cover or tarp over the pile to keep rainwater out.
- CHECK with your local conservation district to design manure storage facilities to protect water quality. These structures usually consist of a concrete pad to protect ground water and a short wall on one or two sides to make manure handling easier.
- TRY composting – A vegetative cover placed around buildings or on steeper slopes can help minimize erosion and absorb nutrients while improving the appearance of your property. In addition, avoid costlier erosion controls, vegetative covers will provide animals with better traction during wet or icy conditions.

- KEEP animals out of steams – Designed stream crossings provide a safe, easy way for horses and livestock to ford streams. Fencing encourages the use of the crossing instead of the streambed to navigate streams. This will allow vegetation to stabilize stream banks and reduce sediment pollution.
- MOW pastures to proper height, six inches is typically recommended.
- Material STORAGE SAFETY TIPS – Many of the chemicals found in barns require careful handling and proper disposal. When using these chemicals, be certain to follow these common sense guidelines:
  - Buy only what you need.
- Treat spills of hoof oils like fuel spill. Use kitty litter to soak up the oil and dispose in a tightly sealed plastic bag.
- Store pesticides in a locked, dry, well-ventilated area.
- Protect stored fertilizer and pesticides from rain and surface water.

Call 1-800-506-2555 to locate your local conservation district to find out what to do with your current backyard manure pile, how to re-establish a healthy pasture, what to do about weeds, and what grasses grow best in your soils.

Thank you for doing your part to protect your watershed, the environment, and the equestrian way of life in your community!

Helpful telephone numbers and links:

RIVERSIDE COUNTY WATER AGENCIES:

City of Banning	(951) 922-3130
City of Beaumont	(951) 769-8520
City of Blythe	(760) 922-6161
City of Coachella	(760) 398-3502
Coachella Valley Water District	(760) 398-2651
City of Corona	(951) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley MWD	(951) 674-3146
Farm Mutual Water Company	(951) 244-4198
City of Hemet	(951) 765-3712
Idyllwild Water District	(951) 659-2143
Jurupa Community Services District	(951) 360-8795
Lake Hemet MWD	(951) 658-3241
Lee Lake Water District	(951) 277-1414
March Air Force Base	(951) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8253
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Ripley, CSA #62	(760) 922-4951
City of Riverside	(951) 351-6170
Rubidoux Community Services District	(951) 684-7580
Silent Valley Club, Inc	(951) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

CALL 1-800-506-2555 to:

- Report clogged storm drains or illegal storm drain disposal from residential, industrial, construction and commercial sites into public streets, storm drains and/or water bodies.
- Find out about our various storm drain pollution prevention materials.
- Locate the dates and times of Household Hazardous Waste (HHW) Collection Event.
- Request adult neighborhood, or classroom presentations.
- Locate other County environmental services.
- Receive grasscycling information and composting workshop information.

Or visit our (Riverside County Flood Control District website at: www.floodcontrol.co.riverside.ca.us

Other links to additional storm drain pollution information:

- County of Riverside Environmental Health: www.rivcoeh.org
- California State Water Resource Conservation Board: www.swrcb.ca.gov/stormwtr/links.html
- California Water Quality Task Force: www.cabmphandbooks.com/
- United State Environmental Protection Agency (EPA): www.epa.gov/opptintr/p2home/programs/busprc.htm (compliance assistance information)

ONLY RAIN... DOWN THE STORM DRAIN

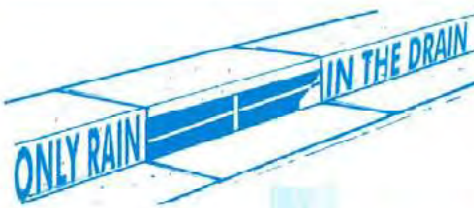
Riverside County Only Rain in the Storm Drain Pollution Protection Program gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

StormWater Pollution

What you should know for...

Swimming Pool, Jacuzzi and Fountain Maintenance

Do you know . . . where the water actually goes?



Storm Drains are not connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Untreated storm water and the pollutants it carries flow directly into rivers, lakes, and streams. Wastewater from residential swimming pools, jacuzzis, fishponds, and fountains often contain chemicals used for sanitizing or cleansing purposes. Toxic chemicals (such as chlorine or copper-based algaecides) can damage the environment when wastewater is allowed to flow into our local rivers, lakes, and streams by way of the storm drain system. Each of us can do our part to help clean our water, and that adds up to a pollution solution.

The Cities and County of Riverside have adopted ordinances for storm drain pollution management to maintain discharge control and prevent illegal storm drain discharge. In accordance with state and federal law, these local storm water ordinances prohibit the discharge of pollutants into the storm drain system or local surface waters. The Only Rain in the Storm Drain Pollution Program informs residents and businesses of storm drain pollution prevention activities such as those described in this brochure.

PLEASE NOTE: The discharge of pollutants into the street, gutters, storm drain system, or waterways – without a Regional Water Quality Control board permit or waiver – is strictly prohibited by local ordinances and state and federal law.

Do Your Part to Protect Our Waterways!

Use These Guidelines For Proper Draining of Your Swimming Pool, Jacuzzi and Fountain Water

Discharge Regulations

Requirements for pool draining may differ from city to city. Check with your water agency to see if disposal to the sanitary sewer line is allowed for pool discharges (see reverse side for Riverside County water purveyors).

If sewer discharge is allowed, a hose can be run from your swimming pool pump to the washing machine drain or a sink or bathtub. If sewer discharge is not allowed, or if your house is served by a septic tank, review the options presented below.

Discharge Options

If your local sewer agency will not accept pool water into their system, or if you are on a septic tank system, follow these guidelines:

1. Reduce or eliminate solids (e.g., debris, leaves or dirt) in the pool water.
2. Allow the chemicals in the pool water to dissipate. This could take up to seven (7) days depending on the time of year. Create a co-op; let your neighbor share your pool while theirs is being prepared for draining, then use their pool while yours is being drained. Chlorinated water should not be discharged into the storm drain or surface waters. This includes large pools such as community swimming pools or spas.
3. When the pool water is free of all chemicals (verify by a home pool water test kit) drain pool water to landscaped areas, lawns, yards, or any areas that will absorb the water.
4. You may have to drain the pool water over a period of a few days to allow the landscape areas to absorb most of the water.
5. Control the flow of the draining pool water to prevent soil erosion. Do not allow sediment to enter the street, gutter or storm drain.
6. Avoid discharging pool water into the street and storm drain system. Water runoff that enters the street can pick up motor oil, pet waste, trash and other pollutants, eventually carrying them into the storm drain system and local surface waters.

Refinishing Pool Surfaces

If you are resurfacing your pool, or resurfacing the pool patio area, be sure to hose down mixers, tools and trailers in a dirt area where rinse water won't flow into the street, gutter or storm drain. Local storm water ordinances strictly prohibit the discharge of pollutants into the storm drain system.

Residues from acid washing and similar activities require special handling. Never discharge low or high pH wastewater into the street, gutter or storm drain.

Cleaning Filters

Discharge of pool filter rinse water and backflush to a stream, ditch, or storm drain is prohibited. Backflush from pool filters must be discharged to the sanitary sewer, on-site septic tank and drainfield system (if properly designed and adequately sized), or a seepage pit. Alternatively, pool filter rinse water and backwash may be diverted to dirt or landscaped areas. Filter media and other solids should be picked up and disposed of in the trash.

Chemical Storage and Handling

- Use only the amount indicated on product labels.
- Store chlorine and other chemicals in a covered area to prevent runoff. Keep out of reach of children and pets.
- Chlorine kits, available at retail swimming pool equipment and supply stores, should be used to monitor the chlorine and pH levels.
- Chlorine and other pool chemicals should never be allowed to flow into the gutter or the storm drain system.

Algaecides

Avoid using copper-based algaecides unless absolutely necessary. Control algae with chlorine, organic polymers or other alternatives to copper-based pool chemicals. Copper is a heavy metal that can be toxic to aquatic life.

Proper Disposal of Pool Chemicals

If you need to dispose of unwanted pool chemicals, first try giving them to a neighbor with a pool. If that doesn't work, bring unwanted pool chemicals to a Household Hazardous Waste (HHW) Collection Event. There's no cost for bringing HHW items to collection events - it's FREE! Call **1-800-506-2555** for a schedule of HHW events in your community.

NEVER put unused chemicals into the trash, onto the ground or down a storm drain.

Safer Alternative Products SC-35

Objectives

- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Promote the use of less harmful products and products that contain little or no TMDL pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.

- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.

- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests by methods that pose a lower risk to employees, the public, and the environment.

- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies

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- Procedures
  - Standard operating procedures (SOPs)
  - Purchasing guidelines and procedures
  - Bid packages (services and supplies)
- Materials
  - Preferred or approved product and supplier lists
  - Product and supplier evaluation criteria
  - Training sessions and manuals
  - Fact sheets for employees

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC20 – SC22) and SC41, Building and Grounds Maintenance.

Training

- Employees who handle potentially harmful materials in the use of safer alternatives.
- Purchasing departments should be encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.

Regulations

This BMP has no regulatory requirements. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements,
- Storm water runoff sampling requirements,
- Training and licensing requirements, and
- Record keeping and reporting requirements.

Equipment

- There are no major equipment requirements to this BMP.

Limitations

- Alternative products may not be available, suitable, or effective in every case.

Requirements

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.

- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources listed below.

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Rerefined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps. All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.
- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control (www.dtsc.ca.gov)

California Integrated Waste Management Board (www.ciwmb.ca.gov)

City of Santa Monica (www.santa-monica.org/environment)

City of Palo Alto (www.city.palo-alto.ca.us/cleanbay)

City and County of San Francisco, Department of the Environment (www.ci.sf.ca.us/sfenvironment)

Earth 911 (www.earth911.org/master.asp)

Environmental Finance Center Region IX (www.greenstart.org/efc9)

Flex Your Power (www.flexyourpower.ca.gov)

GreenBiz.com (www.greenbiz.com)

Green Business Program (www.abag.org/bayarea/enviro/gbus/gb.html)

Pacific Industrial and Business Association (www.piba.org)

Sacramento Clean Water Business Partners (www.sacstormwater.org)

USEPA BMP fact sheet – Alternative products (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_2.cfm)

USEPA Region IX Pollution Prevention Program (www.epa.gov/region09/p2)

Western Regional Pollution Prevention Network (www.westp2net.org)

Metals (mercury, copper)

National Electrical Manufacturers Association - Environment, Health and Safety (www.nema.org)

Sustainable Conservation (www.suscon.org)

Auto Recycling Project

Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center (www.birc.org)

California Department of Pesticide Regulation (www.cdpr.ca.gov)

University of California Statewide IPM Program (www.ipm.ucdavis.edu/default.html)

Dioxins

Bay Area Dioxins Project (http://dioxin.abag.ca.gov/)

Building & Grounds Maintenance SC-41

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Switch to non-toxic chemicals for maintenance to the maximum extent possible.
- ☐ Choose cleaning agents that can be recycled.
- ☐ Encourage proper lawn management and landscaping, including use of native vegetation.
- ☐ Encourage use of Integrated Pest Management techniques for pest control.
- ☐ Encourage proper onsite recycling of yard trimmings.
- ☐ Recycle residual paints, solvents, lumber, and other material as much as possible.

Objectives

- *Cover*
- *Contain*
- *Educate*
- *Reduce/Minimize*
- *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Clean work areas at the end of each work shift using dry cleaning methods such as sweeping and vacuuming.

Good Housekeeping

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.

- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.

- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Use mulch or other erosion control measures on exposed soils. See also SC-40, Contaminated and Erodible Areas, for more information.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.

- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.

- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.

- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.

- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.

- Use mulch or other erosion control measures when soils are exposed.

- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.

- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.

- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Do not use pesticides if rain is expected.

- Do not mix or prepare pesticides for application near storm drains.

- Use the minimum amount needed for the job.

- Calibrate fertilizer distributors to avoid excessive application.

- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.

- Apply pesticides only when wind speeds are low.

- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.

- Irrigate slowly to prevent runoff and then only as much as is needed.

- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Spill Response and Prevention Procedures

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Material Handling and Waste Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Dispose of empty pesticide containers according to the instructions on the container label.
- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Employee Training Program

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the needs of individual staff.

Quality Assurance and Record Keeping

- Keep accurate logs that document maintenance activities performed and minimum BMP measures implemented.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Additional capital costs are not anticipated for building and grounds maintenance. Implementation of the minimum BMPs described above should be conducted as part of regular site operations.

Maintenance

- Maintenance activities for the BMPs described above will be minimal, and no additional cost is anticipated.

Supplemental Information

Fire Sprinkler Line Flushing

Site fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual*.

Kennedy/Jenks Consultants, 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at: http://www.cityofsparks.us/sites/default/files/assets/documents/env-control/construction/TM-I-C_BMP_Handbook_2-07-final.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at:

http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

US EPA, 1997. *Best Management Practices Handbook for Hazardous Waste Containers*. Available online at: http://www.epa.gov/region6/6en/h/handbk4.pdf.

Ventura Countywide Stormwater Management Program Clean Business Fact Sheets. Available online at: http://www.vcstormwater.org/documents/programs_business/building.pdf.

Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	
Oxygen Demanding	☑

Description

Landscape maintenance activities include vegetation removal; herbicide and insecticide application; fertilizer application; watering; and other gardening and lawn care practices. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods. All of these maintenance practices have the potential to contribute pollutants to the storm drain system. The major objectives of this BMP are to minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings, and educating employees and the public.

Approach

Pollution Prevention

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Consider alternative landscaping techniques such as naturescaping and xeriscaping.
- Conduct appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to help preserve the landscapes water efficiency.

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- Consider grass cycling (grass cycling is the natural recycling of grass by leaving the clippings on the lawn when mowing. Grass clippings decompose quickly and release valuable nutrients back into the lawn).

Suggested Protocols

Mowing, Trimming, and Weeding

- Whenever possible use mechanical methods of vegetation removal (e.g mowing with tractor-type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.
- Avoid loosening the soil when conducting mechanical or manual weed control, this could lead to erosion. Use mulch or other erosion control measures when soils are exposed.
- Performing mowing at optimal times. Mowing should not be performed if significant rain events are predicted.
- Mulching mowers may be recommended for certain flat areas. Other techniques may be employed to minimize mowing such as selective vegetative planting using low maintenance grasses and shrubs.
- Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this fact sheet).
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them. Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.
- Retain and/or plant selected native vegetation whose features are determined to be beneficial, where feasible. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation.
- Consider using low water use groundcovers when planting or replanting.

Waste Management

- Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.

- Avoid landscape wastes in and around storm drain inlets by either using bagging equipment or by manually picking up the material.

Irrigation

- Where practical, use automatic timers to minimize runoff.

- Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.

- Ensure that there is no runoff from the landscaped area(s) if re-claimed water is used for irrigation.

- If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.

- Irrigate slowly or pulse irrigate to prevent runoff and then only irrigate as much as is needed.

- Apply water at rates that do not exceed the infiltration rate of the soil.

Fertilizer and Pesticide Management

- Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:

  - Mulching can be used to prevent weeds where turf is absent, fencing installed to keep rodents out, and netting used to keep birds and insects away from leaves and fruit.

  - Visible insects can be removed by hand (with gloves or tweezers) and placed in soapy water or vegetable oil. Alternatively, insects can be sprayed off the plant with water or in some cases vacuumed off of larger plants.

  - Store-bought traps, such as species-specific, pheromone-based traps or colored sticky cards, can be used.

  - Slugs can be trapped in small cups filled with beer that are set in the ground so the slugs can get in easily.

  - In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of (pruning equipment should be disinfected with bleach to prevent spreading the disease organism).

  - Small mammals and birds can be excluded using fences, netting, tree trunk guards.

  - Beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seed head weevils, and spiders that prey on detrimental pest species can be promoted.

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.

- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule).
- Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- Do not mix or prepare pesticides for application near storm drains.
- Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- Periodically test soils for determining proper fertilizer use.
- Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Dispose of empty pesticide containers according to the instructions on the container label.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- Inspect pesticide/fertilizer equipment and transportation vehicles daily.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of a California qualified pesticide applicator.
- Train/encourage municipal maintenance crews to use IPM techniques for managing public green areas.
- Annually train employees within departments responsible for pesticide application on the appropriate portions of the agency's IPM Policy, SOPs, and BMPs, and the latest IPM techniques.

- Employees who are not authorized and trained to apply pesticides should be periodically (at least annually) informed that they cannot use over-the-counter pesticides in or around the workplace.

- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup

- Have spill cleanup materials readily available and in a know in location

- Cleanup spills immediately and use dry methods if possible.

- Properly dispose of spill cleanup material.

Other Considerations

- The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping. The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All public agency employees who apply pesticides and herbicides in "agricultural use" areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations. Contracts for landscape maintenance should include similar requirements.

- All employees who handle pesticides should be familiar with the most recent material safety data sheet (MSDS) files.

- Municipalities do not have the authority to regulate the use of pesticides by school districts, however the California Healthy Schools Act of 2000 (AB 2260) has imposed requirements on California school districts regarding pesticide use in schools. Posting of notification prior to the application of pesticides is now required, and IPM is stated as the preferred approach to pest management in schools.

Requirements

Costs

Additional training of municipal employees will be required to address IPM techniques and BMPs. IPM methods will likely increase labor cost for pest control which may be offset by lower chemical costs.

Maintenance

Not applicable

Supplemental Information

Further Detail of the BMP

Waste Management

Composting is one of the better disposal alternatives if locally available. Most municipalities either have or are planning yard waste composting facilities as a means of reducing the amount of waste going to the landfill. Lawn clippings from municipal maintenance programs as well as private sources would probably be compatible with most composting facilities

Contractors and Other Pesticide Users

Municipal agencies should develop and implement a process to ensure that any contractor employed to conduct pest control and pesticide application on municipal property engages in pest control methods consistent with the IPM Policy adopted by the agency. Specifically, municipalities should require contractors to follow the agency's IPM policy, SOPs, and BMPs; provide evidence to the agency of having received training on current IPM techniques when feasible; provide documentation of pesticide use on agency property to the agency in a timely manner.

References and Resources

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Los Angeles County Stormwater Quality Model Programs. Public Agency Activities http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Orange County Stormwater Program http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Landscaping and Lawn Care. Office of Water. Office of Wastewater Management. On-line: http://www.epa.gov/npdes/menuofbmps/poll_8.htm

Drainage System Maintenance SC-74

Photo Credit: Geoff Brosseau

Objectives

- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑
Oxygen Demanding	☑

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff that may contain certain pollutants. Maintaining catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis will remove pollutants, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Approach

Suggested Protocols

Catch Basins/Inlet Structures

- Municipal staff should regularly inspect facilities to ensure the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC-75 Waste Handling and Disposal).
- Clean catch basins, storm drain inlets, and other conveyance structures in high pollutant load areas just before the wet season to remove sediments and debris accumulated during the summer.

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- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.

- Keep accurate logs of the number of catch basins cleaned.

- Record the amount of waste collected.

- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.

- Dewater the wastes with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed of. Do not dewater near a storm drain or stream.

- Except for small communities with relatively few catch basins that may be cleaned manually, most municipalities will require mechanical cleaners such as eductors, vacuums, or bucket loaders.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.

- Collect flushed effluent and pump to the sanitary sewer for treatment.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.

- Do not allow discharge from cleaning a storm drain pump station or other facility to reach the storm drain system.

- Conduct quarterly routine maintenance at each pump station.

- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

- Sample collected sediments to determine if landfill disposal is possible, or illegal discharges in the watershed are occurring.

Open Channel

- Consider modification of storm channel characteristics to improve channel hydraulics, to increase pollutant removals, and to enhance channel/creek aesthetic and habitat value.

- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies

(SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS

Illicit Connections and Discharges

- During routine maintenance of conveyance system and drainage structures field staff should look for evidence of illegal discharges or illicit connections:
  - Is there evidence of spills such as paints, discoloring, etc.
  - Are there any odors associated with the drainage system
  - Record locations of apparent illegal discharges/illicit connections
  - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of up gradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
  - Once the origin of flow is established, require illicit discharger to eliminate the discharge.
- Stencil storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

- The State Department of Fish and Game has a hotline for reporting violations called Cal TIP (1-800-952-5400). The phone number may be used to report any violation of a Fish and Game code (illegal dumping, poaching, etc.).

- The California Department of Toxic Substances Control's Waste Alert Hotline, 1-800-69TOXIC, can be used to report hazardous waste violations.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.

- Only properly trained individuals are allowed to handle hazardous materials/wastes.

- Train municipal employees from all departments (public works, utilities, street cleaning, parks and recreation, industrial waste inspection, hazardous waste inspection, sewer maintenance) to recognize and report illegal dumping.

- Train municipal employees and educate businesses, contractors, and the general public in proper and consistent methods for disposal.

- Train municipal staff regarding non-stormwater discharges (See SC-10 Non-Stormwater Discharges).

Spill Response and Prevention

- Refer to SC-11, Prevention, Control & Cleanup

- Have spill cleanup materials readily available and in a known location.

- Cleanup spills immediately and use dry methods if possible.

- Properly dispose of spill cleanup material.

Other Considerations

- Cleanup activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and disposal of flushed effluent to sanitary sewer may be prohibited in some areas.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

- Municipal codes should include sections prohibiting the discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

- Private property access rights may be needed to track illegal discharges up gradient.

- Requirements of municipal ordinance authority for suspected source verification testing for illicit connections necessary for guaranteed rights of entry.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget. A careful study of cleaning effectiveness should be undertaken before increased cleaning is implemented. Catch basin cleaning costs are less expensive if vacuum street sweepers are available; cleaning catch basins manually can cost approximately twice as much as cleaning the basins with a vacuum attached to a sweeper.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary. Encouraging reporting of illicit discharges by employees can offset costs by saving expense on inspectors and directing resources more efficiently. Some programs have used funds available from "environmental fees" or special assessment districts to fund their illicit connection elimination programs.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.

- Identifying illicit discharges requires teams of at least two people (volunteers can be used), plus administrative personnel, depending on the complexity of the storm sewer system.

- Arrangements must be made for proper disposal of collected wastes.

- Requires technical staff to detect and investigate illegal dumping violations, and to coordinate public education.

Supplemental Information

Further Detail of the BMP

Storm Drain flushing

Sanitary sewer flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in sanitary sewer systems. The same principles that make sanitary sewer flushing effective can be used to flush storm drains. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as to an open channel, to another point where flushing will be initiated, or over to the sanitary sewer and on to the treatment facilities, thus preventing re-suspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. The deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce the impacts of stormwater pollution, a second inflatable device, placed well downstream, may be used to re-collect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to re-collect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75 percent for organics and 55-65 percent for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm drain flushing.

Flow Management

Flow management has been one of the principal motivations for designing urban stream corridors in the past. Such needs may or may not be compatible with the stormwater quality goals in the stream corridor.

Downstream flood peaks can be suppressed by reducing through flow velocity. This can be accomplished by reducing gradient with grade control structures or increasing roughness with boulders, dense vegetation, or complex banks forms. Reducing velocity correspondingly increases flood height, so all such measures have a natural association with floodplain open space. Flood elevations laterally adjacent to the stream can be lowered by increasing through flow velocity.

However, increasing velocity increases flooding downstream and inherently conflicts with channel stability and human safety. Where topography permits, another way to lower flood elevation is to lower the level of the floodway with drop structures into a large but subtly excavated bowl where flood flows we allowed to spread out.

Stream Corridor Planning

Urban streams receive and convey stormwater flows from developed or developing watersheds. Planning of stream corridors thus interacts with urban stormwater management programs. If local programs are intended to control or protect downstream environments by managing flows delivered to the channels, then it is logical that such programs should be supplemented by management of the materials, forms, and uses of the downstream riparian corridor. Any proposal for steam alteration or management should be investigated for its potential flow and stability effects on upstream, downstream, and laterally adjacent areas. The timing and rate of flow from various tributaries can combine in complex ways to alter flood hazards. Each section of channel is unique, influenced by its own distribution of roughness elements, management activities, and stream responses.

Flexibility to adapt to stream features and behaviors as they evolve must be included in stream reclamation planning. The amenity and ecology of streams may be enhanced through the landscape design options of 1) corridor reservation, 2) bank treatment, 3) geomorphic restoration, and 4) grade control.

Corridor reservation - Reserving stream corridors and valleys to accommodate natural stream meandering, aggradation, degradation, and over bank flows allows streams to find their own form and generate less ongoing erosion. In California, open stream corridors in recent urban developments have produced recreational open space, irrigation of streamside plantings, and the aesthetic amenity of flowing water.

Bank treatment - The use of armoring, vegetative cover, and flow deflection may be used to influence a channel's form, stability, and biotic habitat. To prevent bank erosion, armoring can be done with rigid construction materials, such as concrete, masonry, wood planks and logs, riprap, and gabions. Concrete linings have been criticized because of their lack of provision of biotic habitat. In contrast, riprap and gabions make relatively porous and flexible linings. Boulders, placed in the bed reduce velocity and erosive power.

Riparian vegetation can stabilize the banks of streams that are at or near a condition of equilibrium. Binding networks of roots increase bank shear strength. During flood flows, resilient vegetation is forced into erosion-inhibiting mats. The roughness of vegetation leads to lower velocity, further reducing erosive effects. Structural flow deflection can protect banks from erosion or alter fish habitat. By concentrating flow, a deflector causes a pool to be scoured in the bed.

Geomorphic restoration – Restoration refers to alteration of disturbed streams so their form and behavior emulate those of undisturbed streams. Natural meanders are retained, with grading to gentle slopes on the inside of curves to allow point bars and riffle-pool sequences to develop. Trees are retained to provide scenic quality, biotic productivity, and roots for bank stabilization, supplemented by plantings where necessary.

A restorative approach can be successful where the stream is already approaching equilibrium. However, if upstream urbanization continues new flow regimes will be generated that could disrupt the equilibrium of the treated system.

Grade Control - A grade control structure is a level shelf of a permanent material, such as stone, masonry, or concrete, over which stream water flows. A grade control structure is called a sill, weir, or drop structure, depending on the relation of its invert elevation to upstream and downstream channels.

A sill is installed at the preexisting channel bed elevation to prevent upstream migration of nick points. It establishes a firm base level below which the upstream channel can not erode.

A weir or check dam is installed with invert above the preexisting bed elevation. A weir raises the local base level of the stream and causes aggradation upstream. The gradient, velocity, and erosive potential of the stream channel are reduced. A drop structure lowers the downstream invert below its preexisting elevation, reducing downstream gradient and velocity. Weirs and drop structure control erosion by dissipating energy and reducing slope velocity.

When carefully applied, grade control structures can be highly versatile in establishing human and environmental benefits in stabilized channels. To be successful, application of grade control structures should be guided by analysis of the stream system both upstream and downstream from the area to he reclaimed.

Examples

The California Department of Water Resources began the Urban Stream Restoration Program in 1985. The program provides grant funds to municipalities and community groups to implement stream restoration projects. The projects reduce damages from streambank aid watershed instability arid floods while restoring streams' aesthetic, recreational, and fish and wildlife values.

In Buena Vista Park, upper floodway slopes are gentle and grassed to achieve continuity of usable park land across the channel of small boulders at the base of the slopes.

The San Diego River is a large, vegetative lined channel, which was planted in a variety of species to support riparian wildlife while stabilizing the steep banks of the floodway.

References and Resources

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

Los Angeles County Stormwater Quality. Public Agency Activities Model Program. On-line: http://ladpw.org/wmd/npdes/public_TC.cfm

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Orange County Stormwater Program
http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

San Diego Stormwater Co-permittees Jurisdictional Urban Runoff Management Program (URMP) Municipal Activities Model Program Guidance. 2001. Project Clean Water. November.

United States Environmental Protection Agency (USEPA). 1999. Stormwater Management Fact Sheet Non-stormwater Discharges to Storm Sewers. EPA 832-F-99-022. Office of Water, Washington, D.C. September.

United States Environmental Protection Agency (USEPA). 1999. Stormwater O&M Fact Sheet Catch Basin Cleaning. EPA 832-F-99-011. Office of Water, Washington, D.C. September.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Illegal Dumping Control. On line: http://www.epa.gov/npdes/menuofbmps/poll_7.htm

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line: http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description
Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach
Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications
Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations
Designing New Installations
The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.

- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:

  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff

  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect

  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible

  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth

- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.
- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

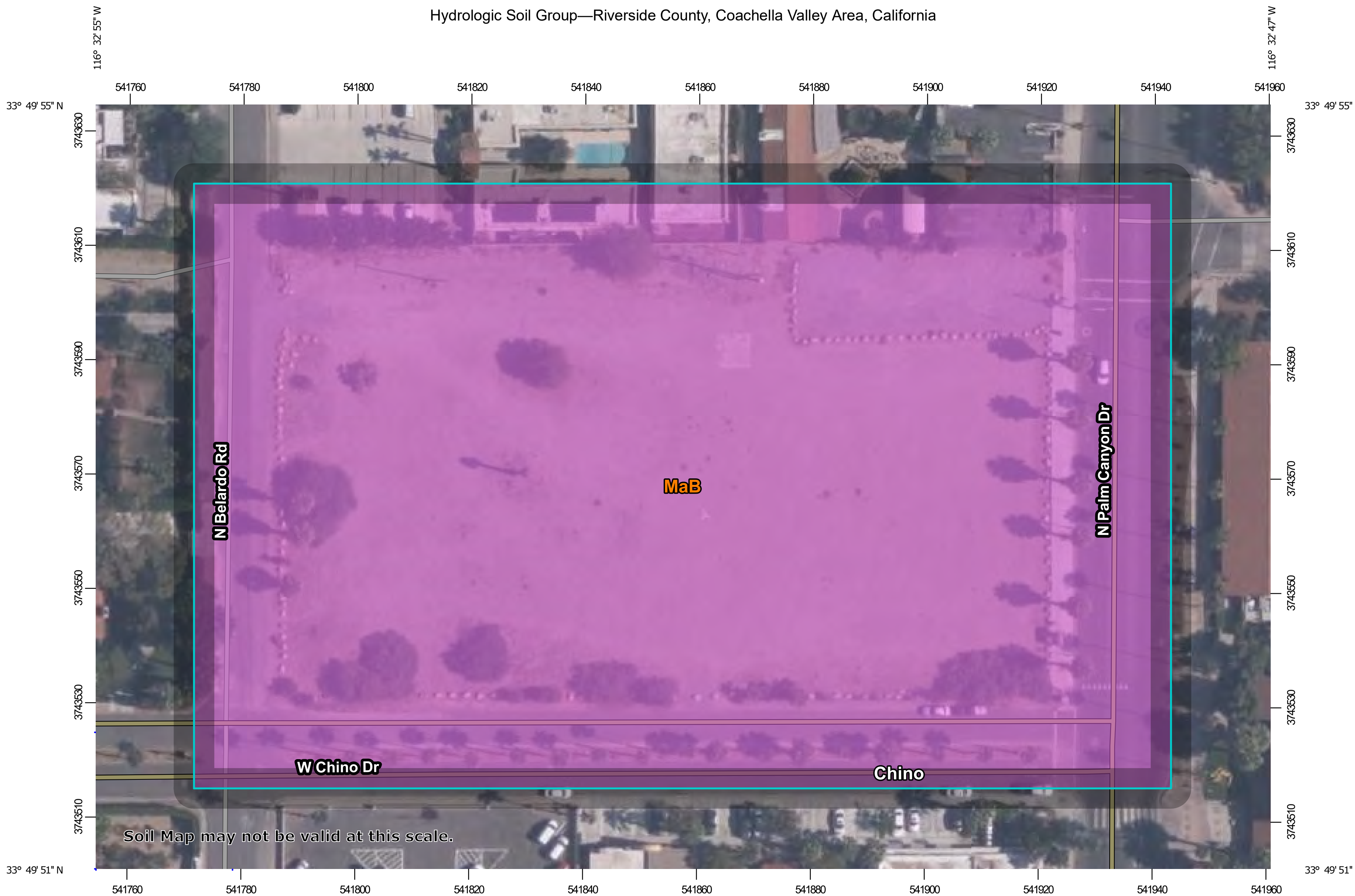
Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

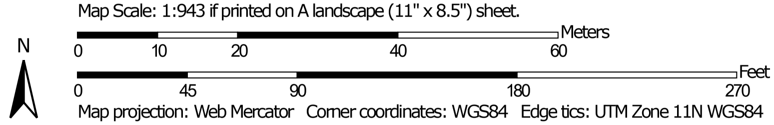
Appendix E

SOILS REPORT

(CURRENTLY NOT AVAILABLE. USDA SOIL INFORMATION IS PROVIDED



Map Scale: 1:943 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 12, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 18, 2018—Aug 22, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaB	Myoma fine sand, 0 to 5 percent slopes	A	4.5	100.0%
Totals for Area of Interest			**4.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Appendix F

STRUCTURAL BMP AND/OR RETENTION FACILITY SIZING CALCULATIONS AND DESIGN DETAILS

SUMMARY OF PRELIMINARY HYDROLOGY REPORT

Whitewater Watershed BMP Design Volume, V_{BMP} & Design Flow Rate, Q_{BMP} (Rev. 06-2014)	Legend:		Required Entries Calculated Cells

Company Name	MSA Consulting, Inc	Date	October 12, 2020
Designed By	SAW	County/City Case No.	
Company Project Number/Name	575 North Palm Canyon Drive		
Drainage Area Number/Name	Project Site		

Enter the Area Tributary to this Feature (A_{TRIB}) — A_{TRIB} = 2.400 acres

Determine the Impervious Area Ratio

Determine the Impervious Area Within A_{TRIB} (A_{IMP}) — A_{IMP} = 1.920 acres

Calculate the Impervious Area Ratio (I_F)

$I_F = A_{IMP}/A_{TRIB}$ — I_F = 0.80

Calculate the Composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ — C_{BMP} = 0.60

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ — V_U = 0.24 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12(in/ft)}$$

V_{BMP} = 2,088 ft^3

BMP Design Flow Rate, Q_{BMP}

$Q_{BMP} = C_{BMP} \times I \times A_{TRIB}$ — Q_{BMP} = 0.29 ft^3/s

I = Design Rainfall Intensity, 0.2 in/hr

Notes:

2449 - 575 NORTH INDIAN CANYON DRIVE
UNDERGROUND RETENTION VOLUMES
PROJECT SITE

Variables

A	B	C	D	E	F
PERC RATE (IN/HR)	GRAVEL VOIDS (%)	PIPE SIZE (IN)	STONE ABOVE PIPE (IN)	STONE BELOW PIPE (IN)	STONE ON PIPE SIDES (IN)
0	40	48	6	12	24

Basin Characteristics

G	H	I	J	K
TRENCH WIDTH (FT)	TRENCH DEPTH (FT)	PIPE VOLUME PER LINEAL FOOT (CUFT/LF)	GRAVEL VOLUME PER LINEAL FOOT (CUFT/LF)	PERLOCATION PER LINEAL FOOT PER HOUR (CUFT/LF/HR)
8.00	5.50	12.57	12.57	0.00

Basin Length Determination

L	M	N	O	P
100 YR STORM (HOUR)	FLOOD VOLUME (CUFT)	PERCOLATION DURING STORM PER LINEAL FOOT (CUFT/LF)	TOTAL RETENTION PER LINEAL FOOT (CUFT/LF)	LENGTH OF BASIN (LF)
WQMP ONLY	2,088	0.00	25.14	84

A - Assumed minimum perc rate
B - StormTech Tech Sheet #1 - Porosity of Structural Backfill, November 2012
C - Selected by Engineer of Record
D - Selected by Engineer of Record
E - Selected by Engineer of Record
F = C / 2
G = [C + (2 x F)] / 12
H = (C + D + E) / 12
I = 3.14 x [(C / 2) / 12]^2
J = [(G x H) - I] x B
K = (A / 12) x G
L - From Synthetic Unit Hydrograph, Shortcut Method
M - From Synthetic Unit Hydrograph, Shortcut Method
N = K x L
O = I + J + N
P = M / O

PRELIMINARY HYDROLOGY REPORT

Lots 1-4, Block 6 of Vista Acres M.B. 11/2, except Parcel 6050-28 as shown on R.S. 42-43-48, Section 10, Township 4 South, Range 4 East, SBM City of Palm Springs, California

575 North Palm Canyon Drive

August 3, 2021

REGISTERED PROFESSIONAL ENGINEER
RODNEY R. REED
C67763
CIVIL
STATE OF CALIFORNIA

Prepared for:
Rios

JN: 2449

MSA CONSULTING, INC.
PLANNING ■ CIVIL ENGINEERING ■ LAND SURVEYING
34200 BOB HOPE DRIVE ■ RANCHO MIRAGE ■ CA 92270
TELEPHONE (760) 320-9811 ■ FAX (760) 323-7893

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LIST OF APPENDICES:

Project Description

The subject project, 575 North Palm Canyon Drive, is located north of Chino Drive between Belardo Road and North Palm Canyon Drive in the city of Palm Springs, California. The proposed site is approximately 2.40 acres, consisting of proposed two-story multi-family housing, (see Vicinity Map, Appendix A).

Existing Conditions

Flood Rate Map: The project area is covered by FIRM Panel Number 06065C1558G, revised August 28, 2008. The site is designated Zone X, indicating areas determined to be outside the 0.2% annual chance floodplain. Insurance purchase is not required in these zones (see Appendix B).

Existing On-Site Conditions: The project area is vacant desert with some vegetation. The on-site vegetation is a mix of native desert plants and volunteers blown in from the surrounding landscaping. Placed boulders ring the site, with an opening at the northwest corner on Belardo Road. Tire tracks criss-cross the site, and the underlaying ground has been compacted from the vehicular traffic.

Existing On-Site Flows: The project area generally slopes toward the east-southeast with storm runoff typically occurring as sheet flow.

Existing Off-Site Flows: The project area is bounded by Belardo Road to the west, Chino Drive to the south, North Palm Canyon Drive to the east, and vacant land to the north. The existing curb along North Palm Canyon Drive prevents flows from entering from the east. An existing catch basin on Belardo Road just north of the project intercepts flows before they reach the site, leaving minimal flow to enter the site from the Belardo Road half-street along the project frontage. Chino Drive runs along the low side of the project, so no flows enter from the south. An existing wall along the northern property line of the vacant land to the north prevents flows from entering the site from that direction, so only runoff from the vacant land enters the site.

Refer to Appendix J for the Existing Conditions Exhibit.

Flood Control Requirements

The project site lies within the flood jurisdiction of the City of Palm Springs. Current City policy for this area dictates that the Whitewater Watershed BMP Design Storage Volume shall be captured and stored until such time as it is percolated into the ground.

Proposed Hydrology and Flood Control Improvements

In the proposed design, all storm runoff generated on-site will be conveyed via surface flow to area drains located throughout the project. The storm drain lines will then convey the runoff to an underground storage system designed to hold the WQMP BMP design storage volume. Runoff in excess of the WQMP BMP design storage volume will then be conveyed via storm drain pipe to the existing storm drain pipe directly north of the site.

Water Quality Management Plan

A formal separate Preliminary Water Quality Management Plan will be prepared for this project. However, the BMP Design Volume worksheet is included in Appendix C for reference.

Run-Off Analysis

Utilizing the information obtained from the NOAA Atlas 14 (Appendix D) and Hydrologic Soil Group Classification (Appendix E) the 10- and 100- year peak flows for the drainage area being conveyed within the site were calculated using RCFC&WCD rational method computer runs and are included in Appendix F and the Proposed Conditions Exhibit is included in Appendix K.

Street Capacity Analysis

Hydraflow Express in AutoCAD Civil 3D 2018 was used to determine the carrying capacity of the private interior street. The minimum longitudinal slope of 0.66% from the Preliminary Grading Exhibit (Appendix L) was used in the calculations. The 10-year peak flow of 2.17 cfs is contained in the street. However, the 3.85 cfs of the 100-year peak flow exceeds the 2.82 cfs capacity of the street. As such, an inlet is required at the midpoint of the street, as well as at the low end. The results are included in Appendix G.

Underground Retention Sizing

An underground retention system is being proposed under the drive aisle on the east side of the project. It will have a volume of 2,112 cu-ft, greater than the 2,088 cu-ft required by the BMP Design Storage Volume for the site. The basin volume calculations are included in Appendix H.

Conclusion

Per the City of Palm Springs, the proposed underground storage system will have adequate capacity to retain the Whitewater Watershed BMP Design Storage Volume.

It is therefore concluded that the proposed development of the subject property will meet the hydrologic requirements set forth by the City of Palm Springs.

Appendix G

AGREEMENTS – CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

Appendix H

Phase 1 Environmental Site Assessment – Summary of Site Remediation Conducted and Use Restrictions

(Not Available)

Appendix I

PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

Project-Specific WQMP Summary Data Form

Applicant Information	
Name and Title	Peter Mahler
Company	Old Las Palmas Partners LLC
Phone	(414) 964-2000
Email	PMahler@mahlerent.com
Project Information	
Project Name (as shown on project application/project-specific WQMP)	Palm Canyon Multi-Family
Street Address	575 N. Palm Canyon Drive
Nearest Cross Streets	Chino Drive
Municipality (City or Unincorporated County)	City of Palm Springs
Zip Code	92262
Tract Number(s) and/or Assessor Parcel Number(s)	APNs 505-322-001; -002; -003; -004
Other (other information to help identify location of project)	33.8315, -116.5476

Indicate type of project.	**Priority Development Projects (Use an "X" in cell preceding project type):**	
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 25%
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 10% & erosive soils
		Commercial or Industrial ≥ 100,000 sq. ft. (Commercial Only)
		Automotive repair shop
		Retail Gasoline Outlet disturbing > 5,000 sq. ft.
		Restaurant disturbing > 5,000 sq. ft.
	X	Home subdivision ≥ 10 housing units
		Parking lot ≥ 5,000 sq. ft. or ≥ 25 parking spaces

Date Project-Specific WQMP Submitted	8/3/2021
Size of Project Area (nearest 0.1 acre)	2.4
Will the project replace more than 50% of the impervious surfaces on an existing developed site?	No
Project Area managed with LID/Site Design BMPs (nearest 0.1 acre)	2.4
Are Treatment Control BMPs required?	No
Is the project subject to onsite retention by ordinance or policy?	Yes
Did the project meet the 100% LID/Site Design Measurable Goal?	Yes
Name of the entity that will implement, operate, and maintain the post-construction BMPs	Old Las Palmas Partners LLC
Contact Name	Peter Mahler
Street or Mailing Address	250 East Wisconsin Avenue, Suite 1610
City	Milwaukee, WI
Zip Code	53202
Phone	(414) 964-2000

Space Below for Use by City/County Staff Only	
Preceding Information Verified by (consistent with information in project-specific WQMP)	**Name:** **Date:**
Date Project-Specific WQMP Approved:	
Data Entered by	**Name:** **Date:**
Other Comments	

Appendix G

Traffic Scoping Letter

Project Scoping Form

This scoping form shall be submitted to the City of Palm Springs to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Palm Canyon Multi-Family
Project Address:	North of W. Chino Dr. and west of Palm Canyon Dr.
Project Opening Year:	
Project Description:	24 multifamily residential units & 2,214 square feet retail

	Consultant:	Developer:
Name:	Urban Crossroads, Inc. - Marlie Whiteman, P.E.	RIOS - Brent Lucy
Address:	1133 Camelback St. #8329	3101 Exposition Place
	Newport Beach, CA 92658	Los Angeles, CA 90018
Telephone:	(714) 585-0574	(323) 200-2080
Fax/Email:	mwhiteman@urbanxroads.com	blucy@rios.com

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, 11th Edition (2021)

Current General Plan Land Use: Central Business District

Proposed General Plan Land Use: Multi-Family Residential

Current Zoning: CBD (Central Business District) & R2 (Limited Multiple-Family Residential Zone)

Proposed Zoning: R2 (Limited Multiple-Family Residential Zone)

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	5	9	14
PM Trips	0	0	0	15	12	27

Trip Internalization: ☐ Yes ☒ No (______% Trip Discount)

Pass-By Allowance: ☐ Yes ☒ No (______% Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses (see Page 11 of the guidelines related to LOS assessment and Pages 24-26).

Is the project screened from LOS assessment? ☒ Yes ☐ No

LOS screening justification (see Page 11 of the guidelines):

* Project generates less than 100 peak hour trips
* Project is less than 150 multi-family units

Is the project screened from VMT assessment? ☒ Yes ☐ No

VMT screening justification (see Pages 24-26 of the guidelines):

*See attached VMT screening analysis

Level of Service Scoping

See attached traffic scoping letter, dated July 29, 2022

- Proposed Trip Distribution (Exhibit 3 of attached traffic scoping letter):

North	South	East	West
%	%	%	%

- Attach list of Approved and Pending Projects that need to be considered (provided by the City of Palm Springs and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach site plan
- Not other specific items to be addressed:
  - Site access
  - On-site circulation
  - Parking
  - Consistency with Plans supporting Bikes/Peds/Transit
  - Other ________________________
- Date of Traffic Counts ________________________
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased)

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____________________________
- Attach Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Detailed VMT Forecasting Information

Most trip-based models generate daily person trip-ends for each TAZ across various trip purposes (HBW, HBO, and NHB, for example) based on population, household, and employment variables. This may create challenges for complying with the VMT guidance because trip generation is not directly tied to specific land use categories. The following methodology addresses this particular challenge among others.

Production and attraction trip-ends are separately calculated for each zone, and generally: production trip-ends are generated by residential land uses and attraction trip-ends are generated by non-residential land uses. OPR's guidance addresses residential, office, and retail land uses. Focusing on residential and office land uses, the first step to forecasting VMT requires translating the land use into model terms, the closest approximations are:

- Residential: home-based production trips
- Office: home-based work attraction trips

Note that this excludes all non-home-based trips including work-based other and other-based other trips.

The challenges with computing VMT for these two types of trips in a trip-based model are 1) production and attraction trip-ends are not distinguishable after the PA to OD conversion process and 2) trip purposes are not maintained after the mode choice step. For these reasons, it not possible to use the VMT results from the standard vehicle assignment (even using a select zone re-assignment). A separate post-process must be developed to re-estimate VMT for each zone that includes trip-end types and trip purposes.

The procedure for extracting VMT from the model is described below:

- Re-skim final loaded congested networks for each mode and time period
- Run a custom PA to OD process that replicates actual model steps, but:
    - Keeps departure and return trips separate
    - Keeps trip purpose and mode separate
    - Converts person trips to vehicle trips based on auto occupancy rates and isolates automobile trips
    - Factors vehicle trips into assignment time periods
- Multiply appropriate distance skim matrices by custom OD matrices to estimate VMT
- Sum matrices by time period, mode, and trip purpose to calculate daily automobile VMT
- Calculate automobile VMT for individual TAZs using marginal totals:
    - Residential (home-based) - row of departure matrix plus column of return matrix
    - Office (home-based work) - column of departure matrix plus row of return matrix

Appropriateness Checks

Regardless of which method is used, the number of vehicle trips from the custom PA to OD process and the total VMT should match as closely as possible with the results from the traditional model process. The estimated results should be checked against the results from a full model run to understand the degree of accuracy. Note that depending on how each model is setup, these custom processes may or may not include IX/XI trips, truck trips, or special generator trips (airport, seaport, stadium, etc.).

When calculating VMT for comparison at the study area, citywide, or regional geography, the same methodology that was used to estimate project-specific VMT should be used. The VMT for these comparisons can be easily calculated by aggregating the row or column totals for all zones that are within the desired geography.

ATTACHMENT: TRAFFIC SCOPING LETTER

urbanxroads.com

August 3, 2022

Mr. Peter Mahler
Old Las Palmas Partners, LLC
250 E Wisconsin Ave, Suite 1610
Milwaukee, WI 53202

SUBJECT: PALM CANYON MULTI-FAMILY TRAFFIC SCOPING LETTER

Dear Mr. Peter Mahler:

The firm of Urban Crossroads, Inc. is pleased to submit this Traffic Scoping Letter for the proposed Palm Canyon Multi-Family ("Project"). It is our understanding that the Project consists of 24 multi-family residential units and 2,214 square feet of retail located on a vacant lot north of W. Chino Drive and west of Palm Canyon Drive in the City of Palm Springs. This letter describes the draft proposed project trip generation and trip distribution.

A preliminary site plan for the proposed Project is shown on Exhibit 1. Exhibit 2 depicts the location of the proposed project in relation to the existing roadway network. A full access (gated) entry to the Project is provided via Belardo Road. A gated access along Palm Canyon Drive will be utilized for fire and emergency access only.

TRIP GENERATOR DESCRIPTION

Determining trip generation for a specific project is based upon estimates of the amount of traffic that is expected to be both attracted to and produced by the specific on-site land use. For this assessment, trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*, 11th Edition, 2021.

The ITE Land Use (LU) Codes 220 and 822 and land use descriptions has been utilized to identify the appropriate ITE description of the proposed Project:

ITE Land Use Code: 220 – Multifamily Housing (Low-Rise)

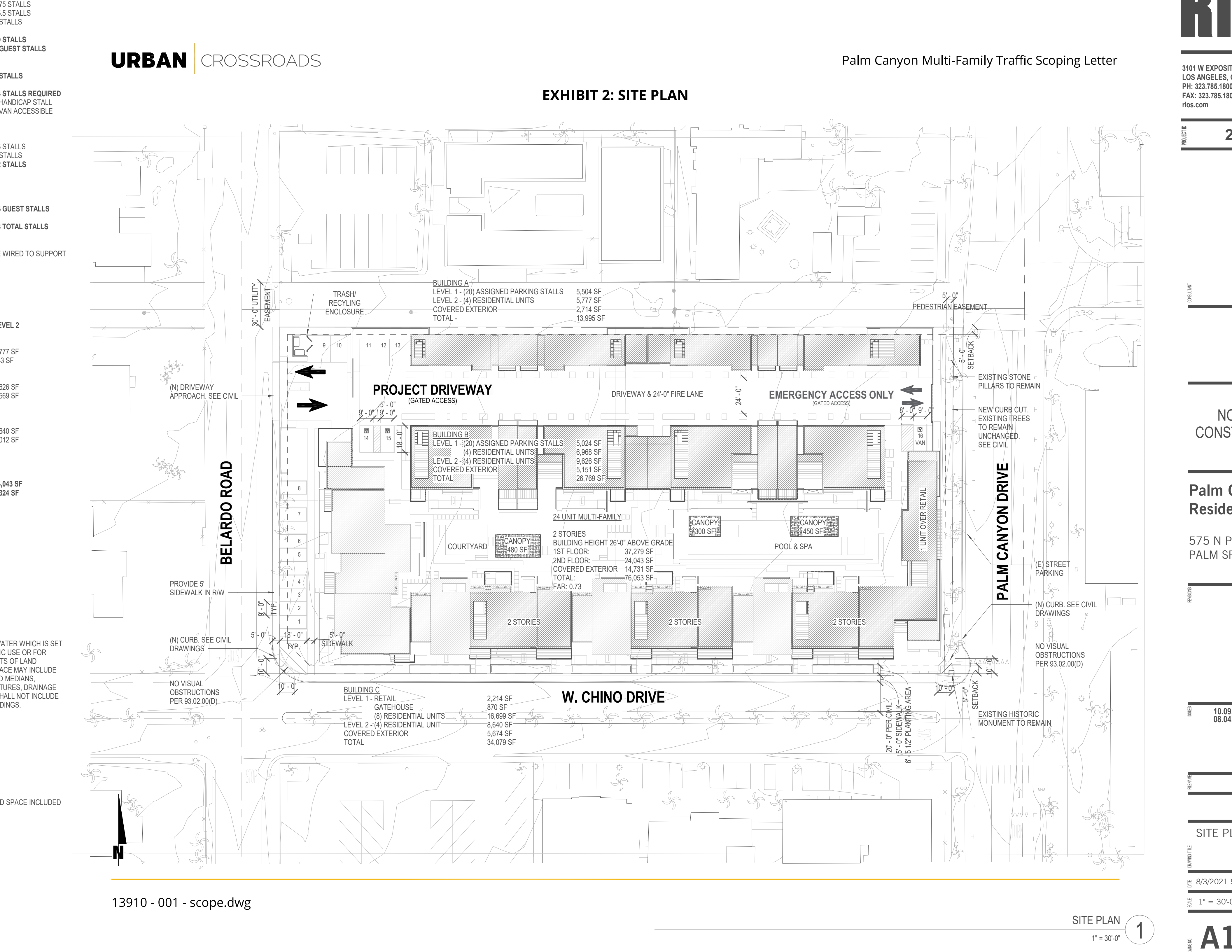
Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors).

ITE Land Use Code: 822 – Local Retail (<40k)

A retail center of less than 40,000 square feet that's owned and operated by one entity.

EXHIBIT 1: LOCATION MAP

EXHIBIT 2: SITE PLAN



PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

Trip generation rates used to estimate Project traffic are shown in Table 1. Table 1 also shows a summary of the Project's trip generation. The proposed Project is anticipated to generate a total of approximately 283 trip-ends per day with 14 vehicles per hour during the AM peak hour and 27 vehicles per hour during the PM peak hour.

TABLE 1: PROJECT TRIP GENERATION SUMMARY

Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]		AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
Multifamily Housing (Low-Rise)	220	24	DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Local Retail (<40k)	822	2.214	TSF	1.42	0.94	2.36	3.30	3.29	6.59	54.45

Trip Generation Results

Land Use	ITE LU Code	Quantity[2]		AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
Multifamily Housing (Low-Rise)	220	24	DU	2	7	9	8	5	13	162
Local Retail (<40k)	822	2.214	TSF	3	2	5	7	7	14	121
TOTAL				5	9	14	15	12	27	283

1 Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).
2 DU = Dwelling Unites; TSF = Thousand Square Feet

Z:\Shared\UcJobs_13600-14000_13900\13910\Excel\[13910 - Scope.xlsx]13910-TG

TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. Exhibit 3 displays the estimated Project traffic distribution pattern.

Based on the identified Project traffic generation and estimated trip distribution pattern, Project peak hour intersection turning movement volumes are shown on Exhibit 4 for morning and evening peak hours, respectively.

GENERAL PLAN CIRCULATION ELEMENT

Exhibit 5 shows the City of Palm Springs Circulation Plan, and Exhibit 6 illustrates the City of Palm Springs Typical Street Cross-Sections.

Palm Canyon Drive – Palm Canyon Drive is a north-south oriented roadway located east of the Project and classified as a 4-lane divided major thoroughfare in the City of Palm Springs Circulation Plan. Palm Canyon Drive Road currently exists as a 3-lane roadway, adjacent to the Project site.

Belardo Road – Belardo Road is a north-south oriented roadway located west of the Project and classified as a 2-lane local roadway in the City of Palm Springs Circulation Plan.

Chino Drive – Chino Drive is an east-west oriented roadway located south of the Project and classified as a 2-lane local roadway in the City of Palm Springs Circulation Plan.

TRAFFIC IMPACT ANALYSIS (TIA) CRITERIA

Per the County of Riverside Traffic Impact Analysis Preparation Guide (2008), the proposed Project does not generate enough traffic to warrant a formal traffic impact analysis. One of the exemptions for preparing a traffic impact analysis is if the Project generates less than 100 vehicle trips during the peak hours. In addition, the County of Riverside Traffic Impact Guidelines also indicate that a traffic analysis is generally only required when a proposed project will add 50 or more peak hour trips to an adjacent intersection.

SITE ACCESS

A full access entry to the Project is provided via Belardo Road (west of Palm Canyon Drive). Peak hour turn volumes shown on Exhibit 4 illustrates that the entering and exiting project traffic at the Project driveway is less than 30 vehicles per hour. Based on the projected low peak hour turn volumes at the project driveway, cross-street stop control the Project driveway location is appropriate.

EXHIBIT 3: PROJECT TRIP DISTRIBUTION

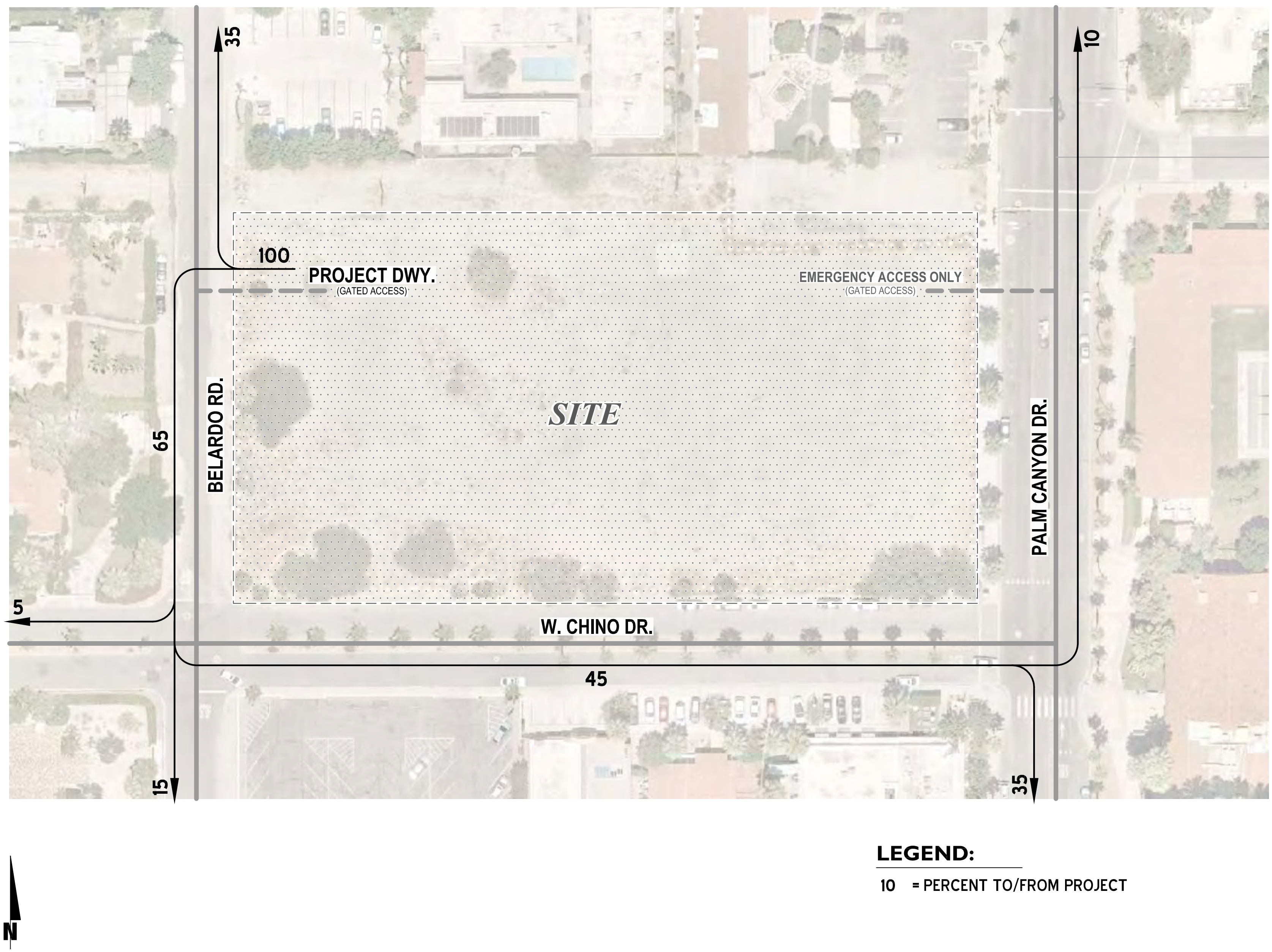
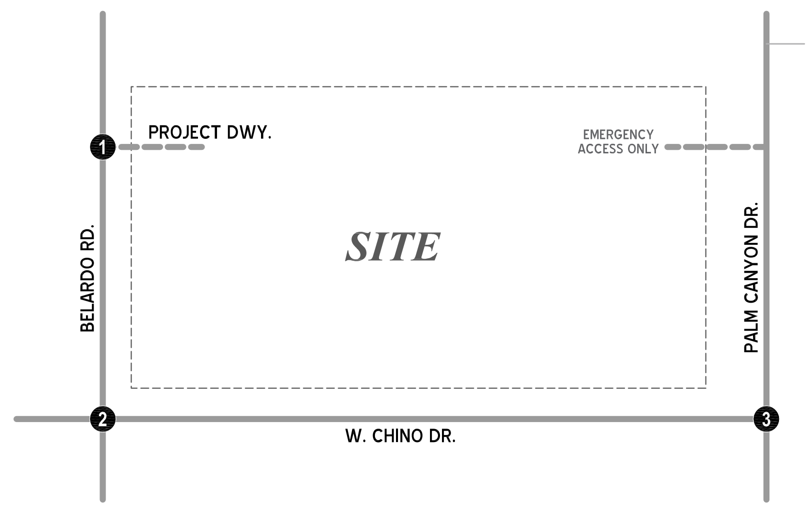
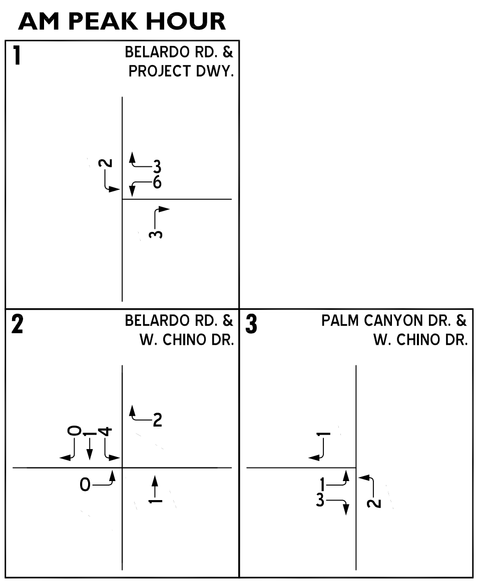


EXHIBIT 4: PROJECT ONLY PEAK HOUR INTERSECTION VOLUMES



LEGEND:

- 1 = INTERSECTION ID
- = FUTURE ROADWAY
- 10 = PEAK HOUR INTERSECTION VOLUMES



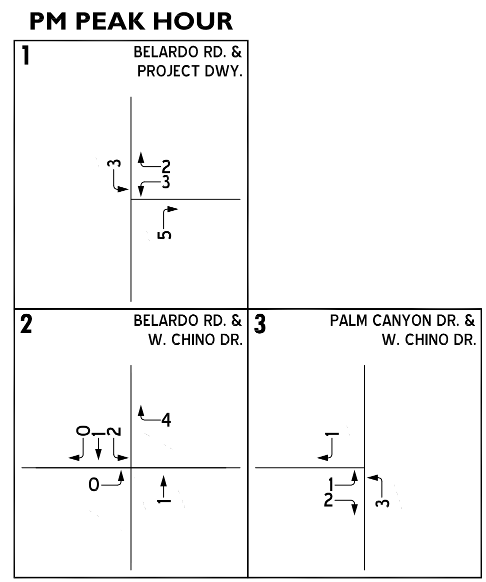
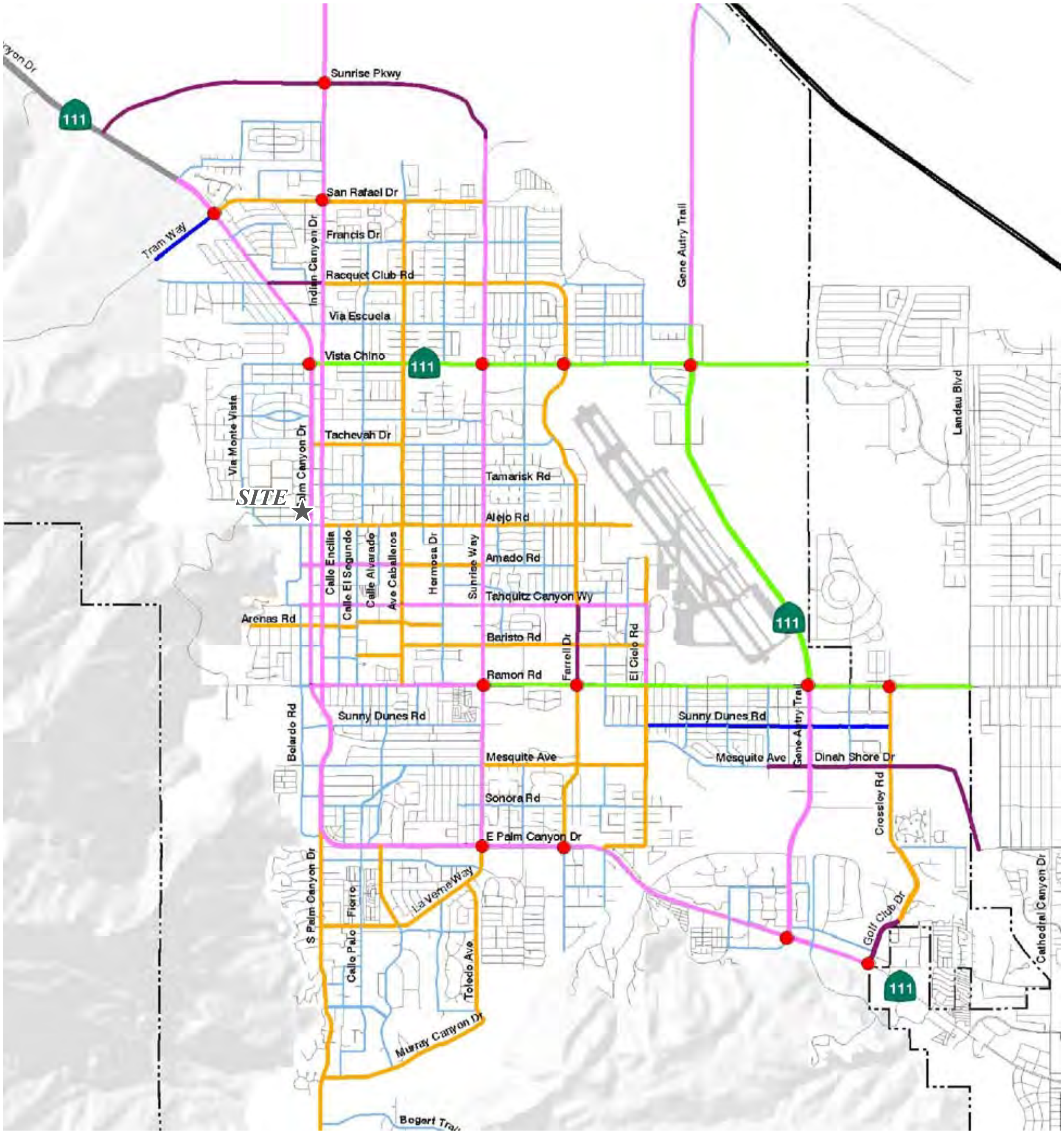


EXHIBIT 5: CITY OF PALM SPRINGS CIRCULATION PLAN



SOURCE: CITY OF PALM SPRINGS GENERAL PLAN (2007)

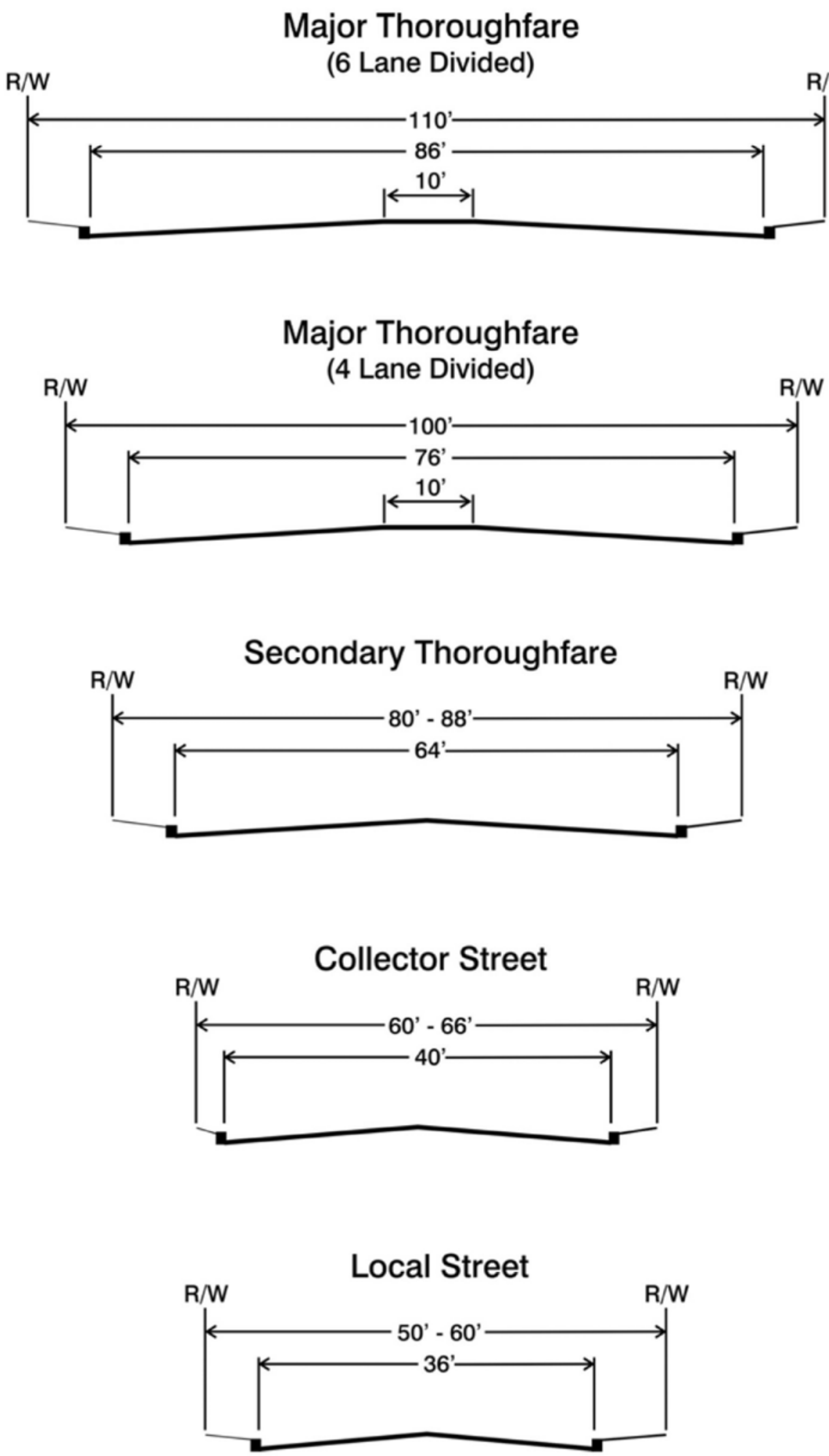
LEGEND:

- Freeway
- Expressway
- Major Thoroughfare (6 - lane divided)
- Major Thoroughfare (4 - lane divided)
- Secondary Thoroughfare (4 - lane divided)
- Secondary Thoroughfare (4 - lane undivided)
- Collector (2 - lane divided)
- Collector (2 - lane undivided)
- Local
- City Boundary
- Sphere of Influence
- Critical Intersection*

*Intersection improvements required to maintain acceptable LOS.

N

EXHIBIT 6: CITY OF PALM SPRINGS TYPICAL STREET CROSS-SECTIONS



SOURCE: CITY OF PALM SPRINGS GENERAL PLAN (2007)

CONCLUSION REGARDING TRAFFIC ANALYSIS

As mentioned previously, the County of Riverside Traffic Impact Guidelines indicate that traffic analysis is generally only required when a proposed project will add 50 or more peak hour trips to an adjacent intersection. The project traffic contribution to the nearest intersections of Belardo Road/Chino Drive and Palm Canyon Drive/Chino Drive are minimal. Therefore, a formal traffic impact analysis is not required for the Project site.

If you have any questions, please contact John Kain at (949) 375-2435 or Marlie Whiteman (714) 585-0574.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain

John Kain, AICP
Principal

Marlie Whiteman

Marlie Whiteman, PE
Senior Associate

ATTACHMENT: VMT SCREENING LETTER

August 3, 2022

Mr. Peter Mahler
Old Las Palmas Partners, LLC
250 E Wisconsin Ave, Suite 1610
Milwaukee, WI 53202

PALM CANYON MULTI-FAMILY VEHICLE MILES TRAVELED (VMT) SCREENING EVALUATION

Mr. Peter Mahler,

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Screening Evaluation for the Palm Canyon Multi-Family development (**Project**) located on a vacant lot north of W. Chino Drive and west of Palm Canyon Drive in the City of Palm Springs (See Attachment A).

PROJECT OVERVIEW

It is our understanding that the Project is proposed to consist of approximately 24 multi-family residential units and 2,214 square feet of retail (See Attachment A).

BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**) (1). Based on the Technical Advisory, the City of Palm Springs has developed and adopted the Traffic Impact Analysis Guidelines (July 2020) (**City Guidelines**) (2). Riverside County has developed and adopted the Transportation Analysis Guidelines for Level of Service, Vehicle Miles Traveled (December 2020) (**County Guidelines**) (3).

The City VMT Guidelines reference the use of the Riverside County Transportation Analysis Model (RIVTAM / RIVCOM), which is used throughout the Coachella Valley and in all of Riverside County for VMT screening and analysis purposes. The City criteria and thresholds for VMT analysis are based upon RIVTAM modeling. This VMT screening utilizes City Guidelines which recognize County thresholds.

VMT SCREENING

Projects that meet certain VMT screening criteria may be presumed to result in a less than significant transportation impact, including the following:

- Project Type Screening
- Projects Near High Quality Transit
- Local-Serving Retail
- Map-Based Screening

A land use project need only meet one of the above screening criteria to result in a less than significant impact.

PROJECT TYPE SCREENING

Small projects such as retail buildings with area less than or equal to 60,000 square feet and multi-family residential projects less than or equal to 147 dwelling units may be presumed to have a less than significant impact.

The Project is proposing 24 residential dwelling units and 2,214 square feet of retail which are lower quantities than the respective residential and retail criteria.

The Project Type screening threshold is met.

PROJECTS NEAR HIGH QUALITY TRANSIT

Projects located within a Transit Priority Area (TPA) (i.e., within ½ mile of an existing "major transit stop"[1] or an existing stop along a "high-quality transit corridor"[2]) may be presumed to have a less than significant impact absent substantial evidence to the contrary.

Southern California Councils of Governments (SCAG) provides TPA data through their graphical information system (GIS). This data was utilized to locate if the Project site and its proximity to a TPA. Results as shown in Attachment B, identify the Project Site is located in a high-quality transit area.

TPA screening criteria is met.

LOCAL-SERVING RETAIL

The introduction of new local-serving retail has been determined to reduce VMT. Therefore, retail projects where no single store on-site exceeds 50,000 square feet can be presumed to cause less-

---

[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

than-significant impact. The retail component of the Project is 2,214 square feet which is less than 50,000 square feet.

Local-serving retail criteria is met.

MAP-BASED SCREENING

As noted in the Technical Advisory, "Residential and office projects that locate in areas with low VMT and that incorporate similar features (density, mix of uses, and transit accessibility) will tend to exhibit similarly low VMT."

Based on the Daily VMT per Service Population Compared to City Average (2012) map (see Attachment C), the Project is not found to be located within a low VMT generating zone.

Map-based screening criteria is not met.

CONCLUSION

Based on our review of applicable VMT screening thresholds, the Project meets the Project Type, Projects Near High Quality Transit, and Local-Serving Retail criteria. The Project would therefore result in a less than significant VMT impact finding. No additional VMT analysis is required.

If you have any questions, please contact us at jkain@urbanxroads.com for John Kain or mwhiteman@urbanxroads.com for Marlie Whiteman.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain

Marlie Whiteman

John Kain, AICP
Principal

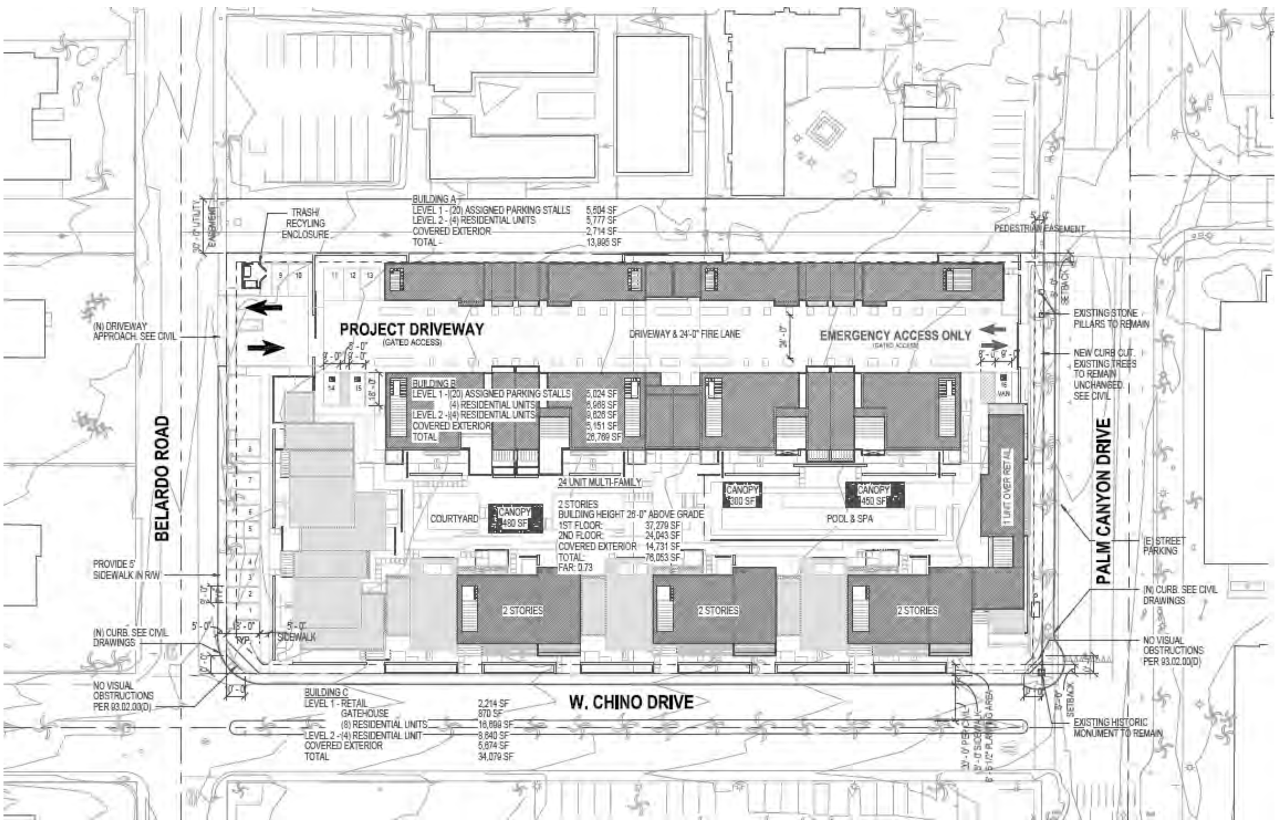
Marlie Whiteman, P.E.
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **City of Palm Springs.** *Traffic Impact Analysis Guidelines.* July 2020.
3. **County of Riverside.** *Transportation Analysis Guidelines for Level of Service, Vehicle Miles Traveled.* December 2020.

ATTACHMENT A

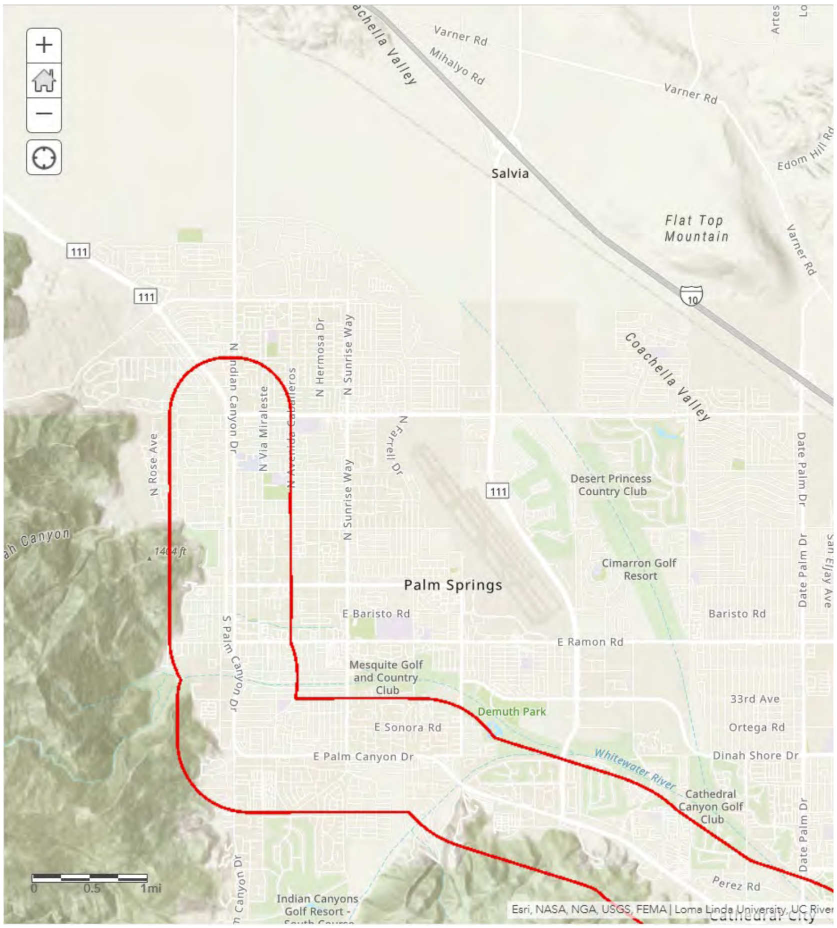
PRELIMINARY SITE PLAN



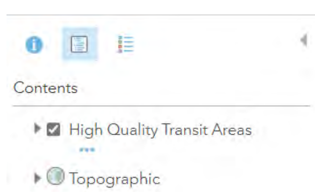
BELARDO ROAD
PALM CANYON DRIVE
W. CHINO DRIVE
PROJECT DRIVEWAY
(GATED ACCESS)
EMERGENCY ACCESS ONLY
DRIVEWAY & 24'-0" FIRE LANE
BUILDING A
LEVEL 1 - (20) ASSIGNED PARKING STALLS 5,504 SF
LEVEL 2 - (4) RESIDENTIAL UNITS 5,777 SF
COVERED EXTERIOR 2,714 SF
TOTAL - 13,995 SF
TRASH/ RECYLING ENCLOSURE
PEDESTRIAN EASEMENT
EXISTING STONE PILLARS TO REMAIN
NEW CURB CUT. EXISTING TREES TO REMAIN UNCHANGED. SEE CIVIL
(N) DRIVEWAY APPROACH. SEE CIVIL
24 UNIT MULTI-FAMILY
2 STORIES
BUILDING HEIGHT 26'-0" ABOVE GRADE
1ST FLOOR: 37,279 SF
2ND FLOOR: 24,043 SF
COVERED EXTERIOR 14,731 SF
TOTAL: 76,053 SF
FAR: 0.73
COURTYARD
POOL & SPA
1 UNIT OVER RETAIL
(E) STREET PARKING
(N) CURB. SEE CIVIL DRAWINGS
NO VISUAL OBSTRUCTIONS PER 93.02.00(D)
PROVIDE 5' SIDEWALK IN R/W
(N) CURB. SEE CIVIL DRAWINGS
BUILDING C
LEVEL 1 - RETAIL 2,214 SF
GATEHOUSE 870 SF
(8) RESIDENTIAL UNITS 16,899 SF
LEVEL 2 - (4) RESIDENTIAL UNIT 8,840 SF
COVERED EXTERIOR 5,674 SF
TOTAL 34,079 SF
EXISTING HISTORIC MONUMENT TO REMAIN
2 STORIES

ATTACHMENT B

TPA MAP



Varner Rd
Mihalyo Rd
Varner Rd
Edom Hill Rd
Salvia
Flat Top Mountain
Varner Rd
111
111
10
Coachella Valley
N Indian Canyon Dr
N Via Miraleste
N Hermosa Dr
N Sunrise Way
N Farrell Dr
N Rose Ave
N Sunrise Way
111
Desert Princess Country Club
Date Palm Dr
Cimarron Golf Resort
Palm Springs
E Baristo Rd
Baristo Rd
E Ramon Rd
S Palm Canyon Dr
Mesquite Golf and Country Club
Demuth Park
33rd Ave
E Sonora Rd
Ortega Rd
E Palm Canyon Dr
Dinah Shore Dr
Whitewater River
Cathedral Canyon Golf Club
Perez Rd
Date Palm Dr
Indian Canyons Golf Resort -
0 0.5 1mi
Esri, NASA, NGA, USGS, FEMA | Loma Linda University, UC River

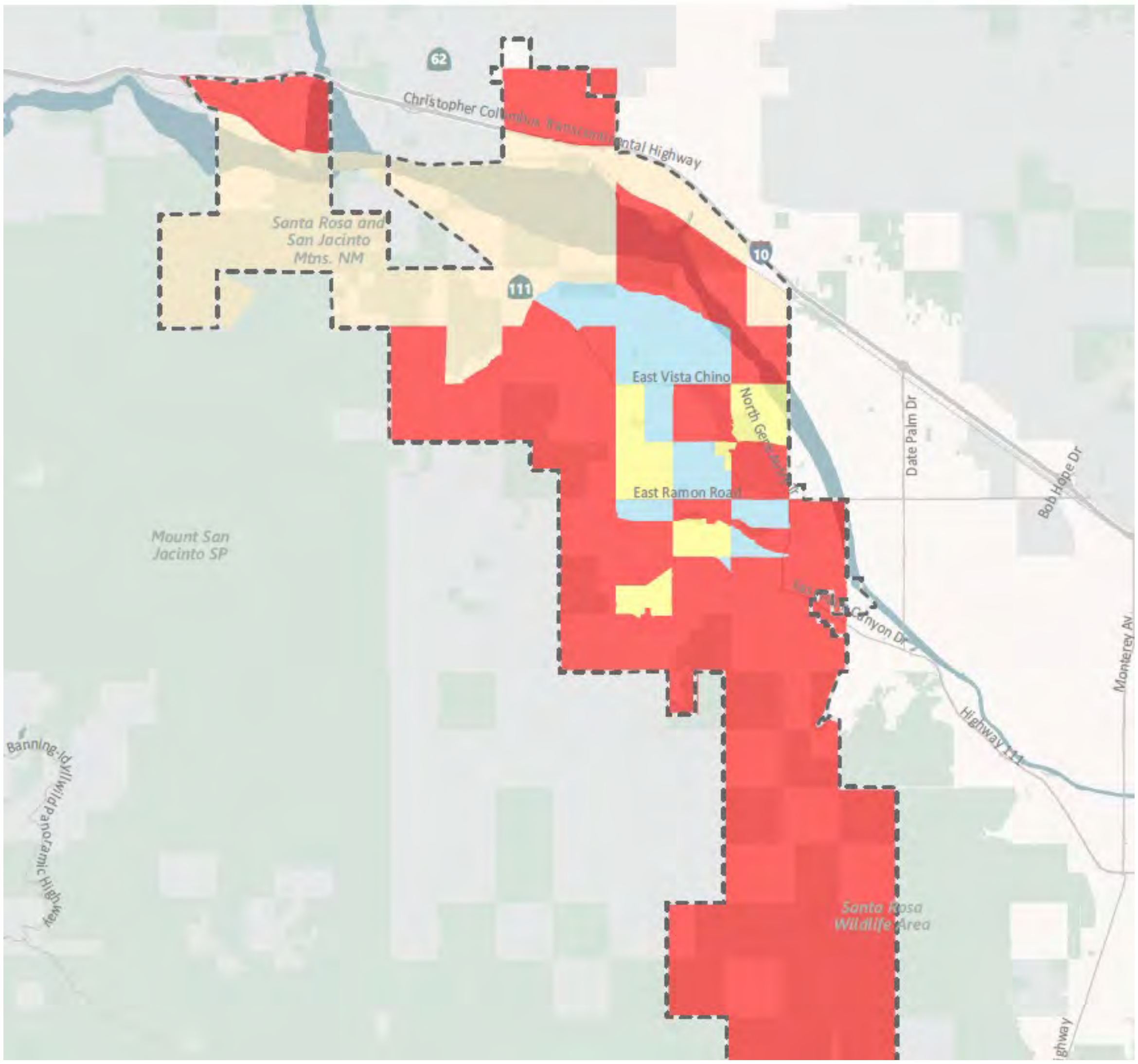


Contents
High Quality Transit Areas
Topographic

ATTACHMENT C

DAILY VMT PER SERVICE POPULATION COMPARED TO CITY AVERAGE (2012)

MAP-BASED SCREENING



RED AREAS MORE THAN CITY AVERAGE