Appendix A Air Quality and Greenhouse Gas Background and Modeling Data

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Air Quality and Greenhouse Gas Appendix

Air Quality and Greenhouse Gas Background and Modeling Data

AIR QUALITY

Air Quality Regulatory Setting

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the Mojave Desert Air Basin (MDAB) and is subject to the rules and regulations imposed by the Mojave Desert Air Quality Management District (MDAQMD). However, MDAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for

sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4,6]	Annual Arithmetic Mean	12 µg/m^3	9 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
6 On February 7, 2024, the national annual $PM_{2.5}$ standard was lowered from 12 µg/m^3 to 9 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary), secondary annual $PM_{2.5}$ standard, and PM_{10} standards (primary and secondary) were retained.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources and include CO, VOC, NO_2, SO_X, PM_{10}, $PM_{2.5}$, and Pb. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_X) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are

the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the MDAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (US EPA 2024a). The MDAB is designated as attainment under the California AAQS and as unclassified/attainment under the National AAQS (CARB 2024a).

Volatile Organic Compounds (VOC) are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols. There are no AAQS for VOCs. However, because they contribute to the formation of O_3, MDAQMD has established a significance threshold for this pollutant. The health effects for ozone are described later in this section.

Nitrogen Oxides (NO_X) are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (US EPA 2023a). The MDAB is designated as attainment for NO_2 under the California AAQS and as unclassified/attainment under the National AAQS (CARB 2024a).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects,

including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; USEPA 2024a). The MDAB is designated as attainment under the California AAQS and as unclassified/attainment under the National AAQS (CARB 2024a).

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤0.01 millimeter). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤0.002.5 millimeter). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The US EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.0001 millimeter) have human health implications because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the US EPA and the California Air Resources Board (CARB) have not adopted AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 2024b). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (South Coast AQMD 2005; US EPA 2024a). The MDAB is designated as attainment for $PM_{2.5}$ under California and as unclassified/attainment under National AAQS (CARB 2024a). In terms of PM_{10}, MDAB is designated as nonattainment under the California and National AAQS (CARB 2024a).

Ozone (O_3) is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis,

1 $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

2 Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

3 Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (US EPA 2024a). The MDAB is designated nonattainment under the California AAQS and nonattainment in the southwestern desert of San Bernardino County for National AAQS (8-hour) (CARB 2024a).

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (South Coast AQMD 2005; US EPA 2018). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the US EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. The MDAB is designated as attainment under the California AAQS and unclassified/attainment under the National AAQS for lead (CARB 2024a).

Table 2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

Table 2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	• Increased response to allergens • Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} and $PM_{2.5}$)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	• Aggravation of respiratory disease (e.g., asthma and emphysema)	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes

Table 2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
	• Reduced lung function	
Lead (Pb)	• Behavioral and learning disabilities in children • Nervous system impairment	Contaminated soil

Source: CARB 2024c.

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/US EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

REGIONAL

The State is divided into air pollution control districts/air quality management districts. These agencies are county or regional governing authorities that have primary responsibility for controlling air pollution from stationary sources. CARB and local air districts are also responsible for developing clean air plans to demonstrate how and when California will attain AAQS established under both the federal and California Clean Air Acts. For the areas in California that have not attained air quality standards, CARB works with air districts to develop and implement state and local attainment plans. In general, attainment plans contain a discussion of ambient air quality data and trends; a baseline emissions inventory; future year projections of emissions, which account for growth projections and already adopted control measures; a comprehensive control strategy of additional measures needed to reach attainment; an attainment demonstration, which generally involves

complex modeling; and contingency measures. Plans may also include interim milestones for progress toward attainment.

AB 617, Community Air Protection Program

Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018, CARB prepared an air monitoring plan (Community Air Protection Blueprint), that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology; adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

AIR QUALITY MANAGEMENT PLANNING

MDAQMD is geographically the second largest of the state's 35 air districts. Air monitoring staff operates and maintains six monitoring stations (Barstow, Hesperia, Phelan, Trona, Twentynine Palms, and Victorville) in the District's 20,000-square-mile jurisdiction. MDAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the MDAB. MDAQMD is responsible for:

- Adopting and enforcing rules and regulations concerning air pollutant sources.
- Issuing permits for stationary sources of air pollutants.
- Inspecting stationary sources of air pollutants.
- Responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.
- Conducting public education campaigns.

The MDAQMD is the agency responsible for preparing the air quality management plan (AQMP) for the San Bernardino and Riverside County portions of the MDAB. MDAQMD has adopted the following attainment plans for nonattainment pollutants that are applicable in the project area (CARB 2024d):

Ozone Attainment Plans

- 2022 8-Hour Ozone State Implementation Plan (SIP): Western Mojave Desert Nonattainment Area
- 2016 8-Hour Ozone SIP: Western Mojave Desert Nonattainment Area
- 2015 8-Hour Ozone Reasonably Available Control Technology (RACT) SIP Analysis: MDAQMD
- 2008 – Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area).
- 2004 – 2004 Ozone Attainment Plan (State and Federal).
- 1996 – Triennial Revision to the 1991 Air Quality Attainment Plan.
- 1994 – Reasonable Further Progress Rate-of-Progress Plan.
- 1996 – Post-1996 Attainment Demonstration and Reasonable Further Progress Plan.
- 1991 – 1991 Air Quality Attainment Plan.

Particulate Matter Attainment Plans

- 1995 – Mojave Desert Planning Area Federal Particulate Matter Attainment Plan.

Existing Conditions

Mojave Desert Air Basin Meteorology

The project site lies within the MDAB. The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also includes the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station (MDAQMD 2020).

Topography

The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB.

The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800 ft elevation). Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 ft). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriels by the Cajon Pass (4,200 ft). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (Morongo Valley).

Wind and Humidity

The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley), whose primary channel is the San Gorgonio Pass (2,300 ft) between the San Bernardino and San Jacinto Mountains. During the summer the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, because these frontal 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.

Temperature and Precipitation

The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4°F (MDAQMD 2020). The lowest average temperature is reported at 36.1°F in December and the highest average temperature is 95.2°F in August (USA.Com 2024). The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). Rainfall averages 14.81 inches per year in the vicinity of the area (USA.Com 2024).

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the MDAB is shown in Table 3, *Attainment Status of Criteria Pollutants in the Mojave Desert Air Basin.*

Table 3 Attainment Status of Criteria Pollutants in the Mojave Desert Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	No Federal Standard

Table 3 Attainment Status of Criteria Pollutants in the Mojave Desert Air Basin

Pollutant	State	Federal
Ozone – 8-hour	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2024a.

EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the MDAQMD. The air quality monitoring station closest to the project site is the Joshua Tree-National Monument Monitoring Station, which only monitors O_3. Data from the San Bernardino-4th Street Monitoring Station has been used to supplement PM_{10}, $PM_{2.5}$, and NO_2. The most current three years of data from these monitoring stations are included in Table 4, *Ambient Air Quality Monitoring Summary*. The data show regular violations of the state and federal O_3 standards, federal PM_{10}, and federal $PM_{2.5}$ standards in the last three years.

Table 4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1,2]		
	2021	2022	2023
Ozone (O_3)			
State 1-Hour $\geq$ 0.09 ppm (days exceed threshold)	3	2	1
State & Federal 8-hour $\geq$ 0.070 ppm (days exceed threshold)	37	37	24
Max. 1-Hour Conc. (ppm)	0.106	0.099	0.096
Max. 8-Hour Conc. (ppm)	0.093	0.083	0.084
Nitrogen Dioxide (NO_2)			
State 1-Hour $\geq$ 0.18 ppm (days exceed threshold)	0	0	0
Max. 1-Hour Conc. (ppb)	0.0563	0.0526	0.0560
Coarse Particulates (PM_{10})			
State 24-Hour > 50 µg/m³ (days exceed threshold)	4	*	0
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	1	1	0
Max. 24-Hour Conc. (µg/m³)	182.4	177.8	*
Fine Particulates ($PM_{2.5}$)			
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	1	2	1
Max. 24-Hour Conc. (µg/m³)	57.9	40.1	52.9

Source: CARB 2024e.
Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; * = Data not available
[1] Data for O_3 from the Joshua Tree-National Monument Monitoring Station. Data for NO_2, $PM_{2.5}$, and PM_{10} from San Bernardino-4th Street Monitoring Station.
[2] Most recent data available as of July 2024.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. The nearest offsite sensitive receptor to the project site is the single-family residences along Antelope Trail and the Yucca Valley Senior Center to the southwest of the project site.

Thresholds of Significance

Air quality impacts in the North Desert and East Desert Regions of San Bernardino County follow the guidance, methodologies, and significance thresholds in MDAQMD's *CEQA and Federal Conformity Guidelines* (2020). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. MDAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

CONSISTENCY WITH AIR QUALITY MANAGEMENT PLANS

MDAQMD requires a consistency evaluation with adopted federal and state AQMPs. If a project is deemed consistent with the existing land use plan, it is considered consistent with the AQMPs. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold (MDAQMD 2020).

REGIONAL SIGNIFICANCE THRESHOLDS

MDAQMD's significance criteria are shown in Table 5, *MDAQMD Regional Significance Thresholds*. The thresholds in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Projects with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

Table 5 MDAQMD Regional Significance Thresholds

Criteria Air Pollutant	Annual Threshold (tons/year)	Daily Threshold (lbs/day)
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	25	137
Carbon Monoxide (CO)	100	548
Nitrogen Oxides (NO_X)	25	137
Sulfur Oxides (SO_X)	25	137
Particulates (PM_{10})	15	82
Particulates ($PM_{2.5}$)	12	65

Source: MDAQMD 2020.
Notes: Lead and hydrogen sulfide are not air quality pollutants of concern for most projects and are typically generated by industrial (MDAQMD permitted) projects only. Project with phases shorter than one year, including construction activities, can be compared to the daily value.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the MDAB and in the state have steadily declined.

In 2007, the MDAB was designated in attainment for CO under both the California AAQS and National AAQS (US EPA 2024b). Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2023).

LOCALIZED SIGNIFICANCE THRESHOLDS

MDAQMD also considers projects that cause or contribute to an exceedance of the California or National AAQS to result in significant impacts. Emissions that do not exceed the daily or annual emission in Table 5 are considered to result in less than significant localized impacts.

HEALTH RISK THRESHOLDS

Whenever a project would require use of chemical compounds that have been identified in MDAQMD Regulation XIII, *New Source Review*, placed on CARB's air toxics list pursuant to AB 1807, Air Contaminant Identification and Control Act (1983); or placed on the US EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment (HRA) is required by MDAQMD. Table 6, *Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project.

Projects that do not generate emissions that exceed the values in Table 5, above, would not substantially contribute to cumulative air quality hazards or exacerbate an existing environmental hazard. Residential, commercial, office, and institutional uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards. Therefore, these thresholds are typically applied to new industrial projects.

Table 6 Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0

Source: MDAQMD 2020

In addition, MDAQMD requires that project types listed below be evaluated using the significance threshold criteria in Table 5 when located within a certain distance of an existing or planned (zoned) sensitive receptor land use:

- Industrial projects within 1,000 feet
- Distribution centers (40 or more trucks per day) within 1,000 feet
- Major transportation projects (50,000 or more vehicles per day) within 1,000 feet
- Dry cleaners using perchloroethylene within 500 feet
- Gasoline dispensing facilities within 300 feet (MDAQMD 2020)

GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[4] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[5]

[4] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[5] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of anthropogenic black carbon since 2013. Under current strategies, anthropogenic black carbon from transportation is expected to be reduced by over 60 percent in 2030 (CARB 2022). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

    - *Chlorofluorocarbons (CFCs*) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

    - *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

    - *Sulfur Hexafluoride (SF_6)* is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

    - *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

    - *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; US EPA 2024c).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 7, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 280 MT of CO_2.[6]

Table 7 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[1]	Sixth Assessment Report (AR6) Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane[2] (CH_4)	25	28	30
Nitrous Oxide (N_2O)	298	265	273

Source: IPCC 2007, 2013, and 2023.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

GHG Regulatory Setting

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US Environmental Protection Agency (US EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The US EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but allow the US EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (US EPA 2009).

To regulate GHGs from passenger vehicles, US EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions, and are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

6 The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the US EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2021 to 2035)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the US EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. In response to Executive Order (EO) 13990, the National Highway Traffic Safety Administration (NHTSA) announced new proposed fuel standards on August 5, 2021 (NHTSA 2021).

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed Safer Affordable Fuel Efficient Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, on March 31, 2022, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent annual for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

On June 7, 2024, NHTSA announced final CAFE standards for passenger cars and light trucks built in model years 2027-2031 and final fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. The final rules establish standards that would require an industry fleet-wide average of approximately 50.4 mpg for passenger cars and light trucks in model year 2031, by increasing fuel economy by 2 percent year over year for passenger cars (model years 2027-2031) and for light trucks (model years 2029-2031). For heavy-duty pickup trucks and vans, the final rule would increase fuel efficiency at a rate of 10 percent per year (model years 2030-2032) and 8 percent per year (model years 2033-2035) (NHTSA 2024).

US EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the US EPA has developed regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the US EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the US EPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence EO. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and set emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants. The Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is assessing options on potential future regulations.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05, EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), AB 1279, Senate Bill 32 (SB 32), and SB 375.

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
    - 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, "Safeguarding California", in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, set a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

2022 Climate Change Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State's anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB's 2022 Scoping Plan identifies strategies as shown in Table 8, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals.

Table 8 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
VMT Reduction	Reduce or eliminate minimum parking standards.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements)

Table 8 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing).
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings).

Source: CARB 2022.

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- Transportation Electrification
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.

- VMT Reduction
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
  - Does not result in the loss or conversion of the State's natural and working lands;
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS);
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.

- At least 20 percent of the units are affordable to lower-income residents;
- Result in no net loss of existing affordable units.

- Building Decarbonization
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 is defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October2018. All SCSs adopted after October 1, 2018, are subject to these new targets. CARB's updated SB 375 targets for the SCAG region were an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19

percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of "percent per capita" reductions in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan (RTP/SCS). For the SCAG region, the 2024-2050 RTP/SCS, Connect SoCal, was adopted on April 4, 2024, and is an update to the 2020-2045 RTP/SCS. In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through the horizon year 2050 (SCAG 2024). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It also forecasts that implementation of the plan will reduce VMT per capita in year 2050 by 6.3 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2024).

Transportation Sector Specific Regulations

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the US EPA. In 2012, the US EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under "Federal.") In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II)

for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and uses market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease

indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

SB 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all state agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

Energy Efficiency Regulations

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

The 2022 Building Energy Efficiency Standards were adopted on August 11, 2021, and went into effect on January 1, 2023. The 2022 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, and more. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

The CEC is currently developing the final code language for the 2025 Building Energy Efficiency Standards, which are anticipated to be adopted in late 2024. The 2025 Building Energy Efficiency Standards will replace the 2022 Building Energy Efficiency Standards and will become effective on January 1, 2026.

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[7] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen standards became effective on January 1, 2023, and provides updates to the residential and non-residential voluntary measures.

Overall, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each

[7] The green building standards became mandatory in the 2010 edition of the code.

city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency Regulations

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite diesel fuel use increasing fivefold (CARB 2024f).

CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2023, the statewide GHG emissions inventory was updated for 2000 to 2021 emissions using the GWPs in IPCC's AR4 and reported that California produced 381.3 MMTCO2e GHG emissions in 2021 (49.7 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$). The growth in statewide emissions from 2020 to 2021 was likely due in large part to the increase of transportation and other economic activity that occurred in 2021 relative to 2020 as the California emerged from the COVID-19 pandemic (CARB 2023).

California's transportation sector was the single-largest generator of GHG emissions, producing 38.2 percent of the state's total emissions. Industrial sector emissions made up 19.4 percent, and electric power generation made up 16.4 percent of the state's emissions inventory. Other major sectors of GHG emissions include residential and commercial (10.2 percent), agriculture and forestry (8.1 percent), high GWP (5.6 percent), and recycling and waste (2.2 percent). Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit (AB 32 target for year 2020) and have remained below the Limit since that time. Additionally, per capita GHG emissions have dropped from a 2001 peak of 13.8 $MTCO_2e$ per person to 9.7 $MTCO_2e$ per person in 2021, a 30 percent decrease (CARB 2023).

Transportation emissions increased from 2020, likely from passenger vehicles whose emissions rebounded after COVID-19 shelter-in-place orders were lifted. Electricity emissions also increased compared to 2020; however, there has been continued growth of in-state solar generation and imported renewable electricity. High-GWP emissions have continued to increase as high-GWP gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (i.e., the amount of carbon pollution per million dollars of gross domestic product) is declining. From 2000 to 2021, the carbon intensity of California's economy decreased by 50.8 percent while the gross domestic product increased by 67.9 percent (CARB 2023).

Thresholds of Significance

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

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. 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.[8]

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The analysis of the project's air quality impacts follows the guidance and methodologies recommended in MDAQMD's *CEQA and Federal Conformity Guidelines* (2020). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. MDAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

GHG Significance Thresholds

MDAQMD's significance criteria are shown in Table 9, *MDAQMD Greenhouse Gas Significance Thresholds*. The thresholds identified in this table are applied to both construction and operational phases of the project regardless of whether they are stationary or mobile sources, resulting in a conservative estimate of air quality impacts of the project. Project with phases shorter than one year (e.g., construction activities) should be compared to the daily value.

Table 9 MDAQMD Greenhouse Gas Significance Thresholds

Annual (tons/year)	Daily (lbs/day)[1]
100,000 (90,718 $MTCO_2e$/year)	548,000

Source: MDAQMD 2020.
[1] Project with phases shorter than one year, including construction activities, can be compared to the daily value.

[8] 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.

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Assumptions Worksheet

CalEEMod Inputs- Yucca Valley Community Center Athletic Facility Project, Construction

Name:	Yucca Valley Community Center Athletic Facility Project, Construction
Project Number:	TYV-08
Project Location:	57090 29 Palms Hwy, Yucca Valley, CA 92284
County/Air Basin:	San Bernardino-Mojave Desert
Land Use Setting:	Rural
Operational Year:	2025
Gas Company:	Southern California Gas
Electric Company:	Southern California Edison
Air Basin:	Mojave Desert
Air District:	Mojave Desert AQMD

Project Site Acreage	2.90
Disturbed Site Acreage	2.66

Project Components			
Demolition	***SQFT***	***Amount of Debris***	
Phase 2			
Asphalt Demolition (Tons)	5,000	74	
Phase 3			
Asphalt Demolition (Tons)	10,000	148	
Construction	**SQFT**	**Acres**	**Stalls**
Building Area			
Shade Structure	4,000	0.09	NA
Restroom Buildings	400	0.01	NA
SUBTOTAL	**4,400**	**0.10**	
Surface Work			
Phase 1			
Parking Lot	10,400	0.24	26
Landscaping	676	0.02	NA
Hardscape	36,000	0.83	NA
Pickleball Courts	35,000	0.80	NA
Phase 2			
Parking Lot	9,200	0.21	23
Landscaping	100	0.00	NA
Basketball Courts	10,000	0.23	NA
Phase 3			
Skatepark	10,000	0.23	NA
TOTAL	**115,776**	**2.66**	

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscaped Area
Education	Racquet Club	0.40	1000 sqft	0.03	400	776
Parking	Parking Lot	19.60	1000 sqft	0.45	19,600	-
Parking	Other Asphalt Surfaces	45.00	1000 sqft	1.03	45,000	-
Parking	Other Non-Asphalt Surfaces	50.00	1000 sqft	1.15	50,000	-
				2.66		

Notes

[1] Racquet Club land use accounts for Restroom building square footage.

[2] Other Asphalt Surfaces land use accounts for Pickleball and Basketball courts square footage.

[3] Other Non-Asphalt Surfaces land use accounts for Shade Structure, hardscape and Skatepark square footage.

Demolition

Component	Amount to be Demolished[1]	Haul Truck Capacity[2]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends Per Day
Asphalt (tons)	222	20	20	23	9	3
Total				23		

Notes

[1] Combined Asphalt Demolition Phase 2 and 3.

[2] CalEEMod default used.

Soil Haul

Construction Activities	Volume (CY)[1]	Haul Truck Capacity (CY)[2]	Haul Distance (miles)[2]	Total Trip Ends	Duration (days)	Trip Ends per Day
Site Preparation Import	4,725	16	20	591	1	591

Notes

[1] Assume 4,725 CY of import as worst-case scenario based on preliminary information provided by Applicant.

[2] CalEEMod default used.

Architectural Coating

	Percent Painted
Interior Painted:	75%
Exterior Painted:	25%

Notes

[1] Caleemod default used.

MDAQMD Rule 1113

Interior Non-Residential Paint VOC content:	50	grams per liter
Exterior Non-Residential Paint VOC content:	50	grams per liter
Parking Paint VOC contect:	100	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Non-Residential Structures					
Restroom Buildings	400	2.0	800	600	200
				600	**200**
Parking					
Parking Lot	19,600	6%	1,176	-	1,176
Other Asphalt Surfaces	45,000	6%	2,700	-	2,700
Other Non-Asphalt Surfaces	50,000	6%	3,000	-	3,000
					6,876

Notes

[1] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

[3] CalEEMod assumes that 6% of surfaces area of parking, other asphalt surfaces, and other non-asphalt surfaces will be striped.

Southern California Edison Carbon Intensity Factors

Forecasted Year	2025	
CO_2:	348.64	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt Demolition P2	5,000	0.333	1,667	89	148,148	74.07
Asphalt Demolition P3	10,000	0.333	3,333	89	296,296	148.15
Total	15,000					222

[1] Asphalt demolition amount provided by Applicant.

[2] Gibbons, Jim. 1999. Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Connecticut Cooperative Extension System. https://www.uni-groupusa.org/PDF/NEMO_tech_8.pdf

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Construction Activities and Schedule Assumptions

* based on schedule provided by Applicant

CalEEMod Default Construction Schedule				
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	Demolition	10/1/2024	10/29/2024	21
Site Preparation	Site Preparation	10/30/2024	11/3/2024	3
Grading	Grading	11/4/2024	11/12/2024	7
Building Construction	Building Construction	11/13/2024	9/17/2025	221
Paving	Paving	9/4/2025	9/17/2025	10
Architectural Coating	Architectural Coating	9/4/2025	9/17/2025	10
			Total Days	**322**

Notes

[1] Conservatively assume building construction, paving, and architectural coating phases overlap.

Normalization Calculations				
CalEEMod Defaults Construction Duration			**Assumed Construction Duration**	
351	days of construction		11/1/2024	4/1/2025
0.96	years of construction		151	days
11.54	months of construction		4.96	months
		Norm Factor:	0.43	

Modified Construction Schedule (CalEEMod)			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Asphalt Demolition	11/1/2024	11/13/2024	9
Site Preparation	11/14/2024	11/14/2024	1
Grading	11/15/2024	11/19/2024	3
Building Construction	11/20/2024	4/1/2025	95
Paving	3/27/2025	4/1/2025	4
Architectural Coating	3/27/2025	4/1/2025	4

Overlapping Modified Construction Schedule (CalEEMod)			
Construction Activities	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Asphalt Demolition	11/1/2024	11/13/2024	9
Site Preparation	11/14/2024	11/14/2024	1
Grading	11/15/2024	11/19/2024	3
Building Construction	11/20/2024	3/26/2025	91
Building Construction, Paving, Architectural Coating	3/27/2025	4/1/2025	4

CalEEMod Construction Off-Road Equipment Inputs

Source: CalEEMod defualts (except where noted).

Construction Equipment Details			
Equipment	**# of Equipment**	**hr/day**	**total trips per day**
Asphalt Demolition			
Tractors/Loaders/Backhoes	3	8	
Rubber Tired Dozers	1	8	
Concrete/Industrial Saws	1	8	
Worker Trips			13
Vendor Trips			2
Hauling Trips			3
Water Trucks	Acres Disturbed:	2.00	10
	Onsite Travel (mi/day):	0.83	
Site Preperation			
Graders	1	8	
Scrapers	1	8	
Tractors/Loaders/Backhoes	1	7	
Worker Trips			8
Vendor Trips			1
Hauling Trips			591
Water Trucks	Acres Disturbed:	1.94	10
	Onsite Travel (mi/day):	0.80	
Grading			
Graders	1	8	
Rubber Tired Dozers	1	8	
Tractors/Loaders/Backhoes	2	7	
Worker Trips			10
Vendor Trips			3
Hauling Trips			0
Water Trucks	Acres Disturbed:	1.9	10
	Onsite Travel (mi/day):	0.77	

Building Construction				
	Cranes	1	8	
	Forklifts	2	7	
	Generator Sets	1	8	
	Tractors/Loaders/Backhoes	1	6	
	Welders	3	8	
	Worker Trips			20
	Vendor Trips			3
	Hauling Trips			0
Paving				
	Tractors/Loaders/Backhoes	1	8	
	Pavers	1	8	
	Paving Equipment	1	8	
	Rollers	2	8	
	Cement and Mortar Mixers	1	8	
	Worker Trips			15
	Vendor Trips			2
	Hauling Trips			0
Architectural Coating				
	Air Compressors	1	6	
	Worker Trips			4
	Vendor Trips			0
	Hauling Trips			0

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:
McLellan Industries. 2022, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3] Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

Phase Name	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Start Date	End Date	Workdays
Asphalt Demolition	13	12	3	11/1/2024	11/13/2024	9
Site Preparation	8	11	591	11/14/2024	11/14/2024	1
Grading	10	13	0	11/15/2024	11/19/2024	3
Building Construction	20	3	0	11/20/2024	4/1/2025	95
Paving	15	2	0	3/27/2025	4/1/2025	4
Architectural Coating	4	0	0	3/27/2025	4/1/2025	4

Construction Activity (Overlapping)	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Start Date	End Date	Workdays
Asphalt Demolition	13	12	3	11/1/2024	11/13/2024	9
Site Preparation	8	11	591	11/14/2024	11/14/2024	1
Grading	10	13	0	11/15/2024	11/19/2024	3
Building Construction	20	3	0	11/20/2024	3/26/2025	91
Building Construction, Paving, Architectural Coating	39	5	0	3/27/2025	4/1/2025	4
	39	**13**	**591**			

CalEEMod Inputs- Sycamore Academy Wildomar Campus Expansion Project, Operation

Name: Yucca Valley Community Center Athletic Facility Project, Construction
Project Number: TYV-08
Project Location: 57090 29 Palms Hwy, Yucca Valley, CA 92284
County/Air Basin: San Bernardino-Mojave Desert
Land Use Setting: Rural
Operational Year: 2025
Gas Company: Southern California Gas
Electric Company: Southern California Edison
Air Basin: Mojave Desert
Air District: Mojave Desert AQMD

Project Site Acreage	2.90
Disturbed Site Acreage	2.66

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Land Use Square Feet
Education	Racquet Club	0.400	1000 sqft	0.03	400	776
Parking	Parking Lot	19.600	1000 sqft	0.45	19,600	-
Parking	Other Asphalt Surfaces	45.000	1000 sqft	1.03	45,000	-
Parking	Other Non-Asphalt Surfaces	50.000	1000 sqft	1.15	50,000	-
				2.66		

Trips

Land Use Type	Average Daily Trips	CalEEMod Trip Rate	Saturday Trips	CalEEMod Trip Rate	Sunday Trips	CalEEMod Trip Rate
Racquet Club	580	**1,450**	584	**1,460**	584	**1,460**

Source: Fehr & Peers. 2024. Yucca Valley Community Athletic Center Trip Generation Estimates.

Notes

[1] Raquet Club land use accounts for SQFT of pickleball courts.

Water Use (CalEEMod Defaults) [1]

	Indoor (gals/year)	Outdoor (gals/year)	Total
Proposed Project Water Use	23,657	17,180	40,837

Notes

[1] Assumes 100% aerobic treatment.

Solid Waste (CalEEMod Defaults)

Land Use	Solid Waste Generation Rate (tons/unit/yr)	Total Solid Waste (tons/yr)
Solid Waste	5.70	2.28

CalEEMod Energy Use (CalEEMod Defaults)

Land Use Subtype	Total Annual Electricity Consumption (kWh/year)	Total Annual Natural Gas Consumption (kBTU/year)	Title-24 Electricity Energy Intensity (kWhr/size/year)*	Title-24 Natural Gas Energy Intensity (KBTU/size/year)*	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
Racquet Club	3,815.09	17,154.44	**3,256.93**	**6,637.18**	558.16	10,517.26
Parkng Lot	17,169.60	0.00	**17,169.60**	**0.00**	0.00	0.00
Total	**20,984.69**	**17,154.44**				

Lighting (Electricity Use)

Total Annual kWh	**31,536**

Notes

[1] Energy consumption based on hardscape SQFT to account for proposed outdoor lighting.

Calculation of GHGs from Proposed Lighting

CO_2	CH_4	N_2O	CO_2e	CO_2e
lbs/Mwh	lbs/Mwh	lbs/Mwh	lbs/Mwh	MT/Kwh
348.64	0.03300	0.00400	348.67	0.0002

CO_2e from Lighting (MT/Year)	**4.99**

Architectural Coating

**see Construction assumptions*

Southern California Edison Carbon Intensity Factors

Forecasted Year	2025	
CO_2:	348.64	pounds per megawatt hour
CH_4:	0.033	pound per megawatt hour
N_2O:	0.004	pound per megawatt hour

Changes to the CalEEMod Defaults - Fleet Mix 2025

					Trips	580								
Default	HHD	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHD	OBUS	SBUS	UBUS	
FleetMix (Model Default Percentage	1.957255043	48.63565266	4.441097379	20.86244971	3.462066129	0.937731005	2.632907592	15.74465334	0.605690619	0.540603092	0.049393502	0.106819905	0.0236775	100.00
FleetMix (Converted)	0.01957255	0.486356527	0.044410974	0.208624497	0.034620661	0.00937731	0.026329076	0.157446533	0.006056906	0.005406031	0.000493935	0.001068199	0.000236775	100%
Trips	11	282	26	121	20	5	15	91	4	3	0	1	0	580
Percent		77%			8%			16%						100%
without buses/MH	0.019573	0.486357	0.044411	0.208624	0.034621	0.009377	0.026329	0.157447	0.000000	0.005406	0	0.000000	0	99%
Percent		77%			7%			16%						99%
Adjusted without buses/MH	0.021802	0.486357	0.044411	0.208624	0.038564	0.010445	0.029328	0.157447	0.000000	0.006022	0.000000	0.000000	0.000000	
Percent adjusted		77%			8%			16%						100%
Assumed Mix		97.0%			1.00%			2.00%						100%
Adjusted with Assumed Mix Percentage	0.002838	0.613703	0.056039	0.263250	0.005019	0.001359	0.037007	0.020000	0.000000	0.000784	0.000000	0.000000	0.000000	100%
Adjusted CalEEMod Input	0.283757	61.370330	5.603947	26.325038	0.501919	0.135949	3.700685	2.000000	0.000000	0.078375	0.000000	0.000000	0.000000	
Percent Check:		97%			1%			2%						
Trips	2	356	33	153	3	1	21	12	0	0	0	0	0	580
		563			*37*			*12*						

Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.

CalEEMod Construction and Operation Model

Yucca Valley Community Center Athletic Facility Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Yucca Valley Community Center Athletic Facility
Construction Start Date	11/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	14.4
Location	34.12532169133209, -116.4186384377058
County	San Bernardino-Mojave Desert
City	Yucca Valley
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5144
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Racquet Club	0.40	1000sqft	0.03	400	776	—	—	—

Parking Lot	19.6	1000sqft	0.45	0.00	0.00	—	—	—
Other Asphalt Surfaces	45.0	1000sqft	1.03	0.00	0.00	—	—	—
Other Non-Asphalt Surfaces	50.0	1000sqft	1.15	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.1	11.7	17.9	23.7	0.04	0.71	0.40	1.11	0.65	0.10	0.75	—	4,124	4,124	0.16	0.06	1.86	4,148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.1	11.6	62.1	23.0	0.30	1.34	14.0	15.4	1.29	3.13	4.42	—	44,286	44,286	0.17	6.54	2.30	46,241
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	0.35	2.00	2.40	< 0.005	0.08	0.11	0.18	0.07	0.02	0.08	—	458	458	0.02	0.02	0.17	461
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.06	0.36	0.44	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	75.9	75.9	< 0.005	< 0.005	0.03	76.3

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	12.1	11.7	17.9	23.7	0.04	0.71	0.40	1.11	0.65	0.10	0.75	—	4,124	4,124	0.16	0.06	1.86	4,148
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.77	2.16	62.1	22.4	0.30	1.34	14.0	15.4	1.29	3.13	4.42	—	44,286	44,286	0.15	6.54	2.30	46,241
2025	12.1	11.6	17.9	23.0	0.04	0.71	0.40	1.11	0.65	0.10	0.75	—	4,076	4,076	0.17	0.06	0.05	4,099
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.21	0.18	1.64	1.68	< 0.005	0.06	0.11	0.18	0.06	0.02	0.08	—	427	427	0.01	0.02	0.17	434
2025	0.40	0.35	2.00	2.40	< 0.005	0.08	0.04	0.11	0.07	0.01	0.08	—	458	458	0.02	0.01	0.08	461
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	0.03	0.30	0.31	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	70.6	70.6	< 0.005	< 0.005	0.03	71.9
2025	0.07	0.06	0.36	0.44	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	75.9	75.9	< 0.005	< 0.005	0.01	76.3

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.26	2.99	1.65	30.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	1.28	5,582	5,583	0.37	0.16	21.0	5,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.97	2.71	1.82	23.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	1.28	4,966	4,968	0.38	0.17	0.55	5,028
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	2.98	2.72	1.89	25.9	0.05	0.03	5.24	5.27	0.03	1.32	1.35	1.28	5,082	5,083	0.38	0.17	9.01	5,154
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.50	0.34	4.72	0.01	0.01	0.96	0.96	< 0.005	0.24	0.25	0.21	841	842	0.06	0.03	1.49	853

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.23	2.96	1.65	30.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	5,556	5,556	0.24	0.16	21.0	5,631
Area	0.03	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Waste	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	3.26	2.99	1.65	30.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	1.28	5,582	5,583	0.37	0.16	21.0	5,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.95	2.68	1.82	23.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	4,940	4,940	0.25	0.17	0.54	4,998
Area	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Waste	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	2.97	2.71	1.82	23.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	1.28	4,966	4,968	0.38	0.17	0.55	5,028
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	2.95	2.69	1.88	25.8	0.05	0.03	5.24	5.27	0.03	1.32	1.35	—	5,056	5,056	0.25	0.17	9.01	5,123
Area	0.03	0.03	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.5	25.5	< 0.005	< 0.005	—	25.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Waste	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	2.98	2.72	1.89	25.9	0.05	0.03	5.24	5.27	0.03	1.32	1.35	1.28	5,082	5,083	0.38	0.17	9.01	5,154
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.54	0.49	0.34	4.72	0.01	< 0.005	0.96	0.96	< 0.005	0.24	0.25	—	837	837	0.04	0.03	1.49	848
Area	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.23	4.23	< 0.005	< 0.005	—	4.25
Water	—	—	—	—	—	—	—	—	—	—	—	0.01	0.03	0.04	< 0.005	< 0.005	—	0.05
Waste	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.71
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	0.54	0.50	0.34	4.72	0.01	0.01	0.96	0.96	< 0.005	0.24	0.25	0.21	841	842	0.06	0.03	1.49	853

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	1.92	1.61	15.6	16.0	0.02	0.67	—	0.67	0.62	—	0.62	—	2,494	2,494	0.10	0.02	—	2,502
Demolition	—	—	—	—	—	—	0.55	0.55	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	1.22	1.22	< 0.005	0.12	0.12	—	5.15	5.15	< 0.005	< 0.005	< 0.005	5.39
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	61.5	61.5	< 0.005	< 0.005	—	61.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.2	10.2	< 0.005	< 0.005	—	10.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.59	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	120	120	0.01	< 0.005	0.01	121
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	321	321	< 0.005	0.04	0.02	334

Hauling	0.01	< 0.005	0.25	0.05	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	209	209	< 0.005	0.03	0.01	219
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.04	3.04	< 0.005	< 0.005	0.01	3.09
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.92	7.92	< 0.005	< 0.005	0.01	8.24
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.15	5.15	< 0.005	< 0.005	< 0.005	5.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.51
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.31	1.31	< 0.005	< 0.005	< 0.005	1.36
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.89

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.31	12.7	11.4	0.03	0.55	—	0.55	0.51	—	0.51	—	2,716	2,716	0.11	0.02	—	2,725
Dust From Material Movement	—	—	—	—	—	—	1.99	1.99	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	1.18	1.18	< 0.005	0.12	0.12	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.29
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.44	7.44	< 0.005	< 0.005	—	7.47
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.23	1.23	< 0.005	< 0.005	—	1.24
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.35	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.9	71.9	< 0.005	< 0.005	0.01	72.9
Vendor	0.02	0.01	0.34	0.16	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	< 0.005	0.04	0.02	306
Hauling	1.16	0.81	49.0	10.4	0.27	0.78	10.7	11.5	0.78	2.74	3.52	—	41,199	41,199	0.04	6.48	2.27	43,132
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.84
Hauling	< 0.005	< 0.005	0.13	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.10	118
Annual	—	—	—	—	—	—	—	—	—A-62	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.02	19.6

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.96	1.65	15.9	15.4	0.02	0.74	—	0.74	0.68	—	0.68	—	2,454	2,454	0.10	0.02	—	2,462
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	1.13	1.13	< 0.005	0.11	0.11	—	4.95	4.95	< 0.005	< 0.005	< 0.005	5.18
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.2	20.2	< 0.005	< 0.005	—	20.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.47	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	95.9	95.9	0.01	< 0.005	0.01	97.2
Vendor	0.02	0.01	0.41	0.19	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	348	348	< 0.005	0.05	0.02	362
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.86	2.86	< 0.005	< 0.005	< 0.005	2.98
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.49
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.58	1.32	11.2	11.9	0.02	0.46	—	0.46	0.42	—	0.42	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.13	0.11	0.92	0.98	< 0.005	0.04	—	0.04	0.03	—	0.03	—	181	181	0.01	< 0.005	—	182
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02	0.02	0.17	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.09	0.94	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	192	192	0.01	0.01	0.02	194
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.4	80.4	< 0.005	0.01	0.01	83.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	0.03	16.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.69	2.69	< 0.005	< 0.005	< 0.005	2.73
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.14
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.49	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.49	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	1.89	2.11	< 0.005	0.07	—	0.07	0.07	—	0.07	—	392	392	0.02	< 0.005	—	393

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.34	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.25	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	212	212	0.01	0.01	0.77	215
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.8	78.8	< 0.005	0.01	0.21	82.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.86	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	188	188	0.01	0.01	0.02	190
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.9	78.9	< 0.005	0.01	0.01	82.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.4	34.4	< 0.005	< 0.005	0.06	34.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	0.02	14.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.70	5.70	< 0.005	< 0.005	0.01	5.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.32	2.32	< 0.005	< 0.005	< 0.005	2.42
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.13	8.21	0.01	0.27	—	0.27	0.25	—	0.25	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.97	0.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.13	8.21	0.01	0.27	—	0.27	0.25	—	0.25	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.97	0.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.6	13.6	< 0.005	< 0.005	—	13.7
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.26	2.26	< 0.005	< 0.005	—	2.26
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.06	0.94	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	159	159	0.01	0.01	0.58	161
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.5	52.5	< 0.005	0.01	0.14	54.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.65	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	141	141	0.01	0.01	0.01	143
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	< 0.005	54.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.61
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.60
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	8.43	8.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	8.43	8.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
Architectural Coatings	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.24	0.24	< 0.005	< 0.005	—	0.24
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.25	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.4	42.4	< 0.005	< 0.005	0.15	43.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	< 0.005	38.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.42	0.42	< 0.005	< 0.005	< 0.005	0.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	3.23	2.96	1.65	30.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	5,556	5,556	0.24	0.16	21.0	5,631
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.23	2.96	1.65	30.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	5,556	5,556	0.24	0.16	21.0	5,631
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	2.95	2.68	1.82	23.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	4,940	4,940	0.25	0.17	0.54	4,998
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.95	2.68	1.82	23.9	0.05	0.03	5.32	5.35	0.03	1.34	1.37	—	4,940	4,940	0.25	0.17	0.54	4,998
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	0.54	0.49	0.34	4.72	0.01	< 0.005	0.96	0.96	< 0.005	0.24	0.25	—	837	837	0.04	0.03	1.49	848
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.54	0.49	0.34	4.72	0.01	< 0.005	0.96	0.96	< 0.005	0.24	0.25	—	837	837	0.04	0.03	1.49	848

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	3.64	3.64	< 0.005	< 0.005	—	3.67
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	16.4	16.4	< 0.005	< 0.005	—	16.5

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	20.0	20.0	< 0.005	< 0.005	—	20.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	3.64	3.64	< 0.005	< 0.005	—	3.67
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	16.4	16.4	< 0.005	< 0.005	—	16.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	20.0	20.0	< 0.005	< 0.005	—	20.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60	< 0.005	< 0.005	—	0.61
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	2.72	2.72	< 0.005	< 0.005	—	2.73
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.32	3.32	< 0.005	< 0.005	—	3.34

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.51
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.51
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.51
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.50	5.50	< 0.005	< 0.005	—	5.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.91
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.91

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Total	0.03	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.05	0.20	0.25	< 0.005	< 0.005	—	0.29
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.01	0.03	0.04	< 0.005	< 0.005	—	0.05
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.01	0.03	0.04	< 0.005	< 0.005	—	0.05

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.23	0.00	1.23	0.12	0.00	—	4.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.71
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.71

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	11/1/2024	11/13/2024	5.00	9.00	—
Site Preparation	Site Preparation	11/14/2024	11/14/2024	5.00	1.00	—
Grading	Grading	11/15/2024	11/19/2024	5.00	3.00	—
Building Construction	Building Construction	11/20/2024	4/1/2025	5.00	95.0	—
Paving	Paving	3/27/2025	4/1/2025	5.00	4.00	—
Architectural Coating	Architectural Coating	3/27/2025	4/1/2025	5.00	4.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	13.4	LDA,LDT1,LDT2
Demolition	Vendor	12.0	8.33	HHDT,MHDT
Demolition	Hauling	3.00	20.0	HHDT
Demolition	Onsite truck	1.00	0.83	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	13.4	LDA,LDT1,LDT2
Site Preparation	Vendor	11.0	8.33	HHDT,MHDT
Site Preparation	Hauling	591	20.0	HHDT
Site Preparation	Onsite truck	1.00	0.80	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	13.4	LDA,LDT1,LDT2
Grading	Vendor	13.0	8.33	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	1.00	0.77	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.0	13.4	LDA,LDT1,LDT2
Building Construction	Vendor	3.00	8.33	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	13.4	LDA,LDT1,LDT2
Paving	Vendor	2.00	8.33	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT

Paving	Onsite truck	0.00	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.00	13.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	0.00	8.33	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	0.00	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	600	200	6,876

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	222	—
Site Preparation	4,725	0.00	3.00	0.00	—
Paving	0.00	0.00	0.00	0.00	2.63

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Racquet Club	0.00	0%
Parking Lot	0.45	100%
Other Asphalt Surfaces	1.03	100%
Other Non-Asphalt Surfaces	1.15	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Racquet Club	580	584	584	212,117	7,605	7,658	7,658	2,781,381
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	600	200	6,876

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Racquet Club	3,815	349	0.0330	0.0040	17,154
Parking Lot	17,170	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Racquet Club	23,657	17,180
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Racquet Club	2.28	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Land Use	Based on Applicant info., see assumptions file
Construction: Construction Phases	Based on overall construction schedule provided by Applicant, see assumptions file
Construction: Trips and VMT	Included calculated water truck trips and onsite truck trips and trip length, see assumptions file
Operations: Fleet Mix	Adjusted fleet mix, see assumptions file
Operations: Water and Waste Water	Assume 100% aerobic treatment, see assumptions file
Operations: Vehicle Data	Fehr & Peers, 2024 trip generation estimates.
Construction: Dust From Material Movement	Assume 4,725 CY of import as worst-case scenario based on preliminary information provided by Applicant.

CalEEMod Lighting Model

Outdoor Lighting

Yucca Valley Community Center Athletic Facility Lighting Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Yucca Valley Community Center Athletic Facility Lighting
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	14.4
Location	34.12509394206633, -116.41865164634216
County	San Bernardino-Mojave Desert
City	Yucca Valley
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5144
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Parking Lot	36.0	1000sqft	0.83	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	4.99	< 0.005	< 0.005	0.00	5.02

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.1	30.1	< 0.005	< 0.005	0.00	30.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	4.99	4.99	< 0.005	< 0.005	—	5.02
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	4.99	< 0.005	< 0.005	0.00	5.02

4. Operations Emissions Details

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	30.1	30.1	< 0.005	< 0.005	—	30.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.99	4.99	< 0.005	< 0.005	—	5.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	4.99	4.99	< 0.005	< 0.005	—	5.02

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

5. Activity Data

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Parking Lot	31,536	349	0.0330	0.0040	0.00

Emissions Worksheet

Regional Construction Emissions Worksheet:

3.1. Demolition (2024) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5 Total
Onsite	**Winter**					
Off-Road Equipment	1.61	15.60	16.00	0.02	0.67	0.62
Demolition	0.00	0.00	0.00	0.00	0.55	0.08
Onsite truck	0.01	0.02	0.02	0.01	1.22	0.12
Total	**1.62**	**15.62**	**16.02**	**0.03**	**2.44**	**0.82**
Offsite						
Worker	0.06	0.06	0.59	0.00	0.12	0.03
Vendor	0.01	0.38	0.17	0.01	0.09	0.03
Hauling	0.01	0.25	0.05	0.01	0.06	0.02
Total	**0.08**	**0.69**	**0.81**	**0.01**	**0.27**	**0.08**
TOTAL	***1.69***	***16.31***	***16.83***	***0.04***	***2.71***	***0.90***

3.3. Site Preparation (2024) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5 Total
Onsite	**Winter**					
Off-Road Equipment	1.31	12.70	11.40	0.03	0.55	0.51
Dust From Material Movement	0.00	0.00	0.00	0.00	1.99	0.23
Onsite truck	0.01	0.02	0.02	0.01	1.18	0.12
Total	**1.32**	**12.72**	**11.42**	**0.04**	**3.72**	**0.86**
Offsite						
Worker	0.04	0.04	0.35	0.00	0.07	0.02
Vendor	0.01	0.34	0.16	0.01	0.08	0.03
Hauling	0.81	49.00	10.40	0.27	11.50	3.52
Total	**0.86**	**49.38**	**10.91**	**0.28**	**11.65**	**3.57**
TOTAL	***2.18***	***62.10***	***22.33***	***0.31***	***15.37***	***4.43***

3.5. Grading (2024) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5 Total
Onsite	**Winter**					
Off-Road Equipment	1.65	15.90	15.40	0.02	0.74	0.68
Dust From Material Movement	0.01	0.02	0.02	0.01	1.13	0.11
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.66**	**15.92**	**15.42**	**0.03**	**1.87**	**0.79**
Offsite						
Worker	0.05	0.05	0.47	0.00	0.09	0.02
Vendor	0.01	0.41	0.19	0.01	0.10	0.03
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.46**	**0.66**	**0.01**	**0.19**	**0.05**
TOTAL	***1.72***	***16.38***	***16.08***	***0.03***	***2.06***	***0.84***

3.7. Building Construction (2024) - Unmitigated	ROG	NOx	CO	SO[2]	PM10 Total	PM2.5 Total
Onsite	**Winter**					
Off-Road Equipment	1.32	11.20	11.90	0.02	0.46	0.42
Dust From Material Movement	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.32**	**11.20**	**11.90**	**0.02**	**0.46**	**0.42**
Offsite						
Worker	0.10	0.09	0.94	0.00	0.19	0.04
Vendor	0.01	0.09	0.04	0.01	0.02	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.11**	**0.18**	**0.98**	**0.01**	**0.21**	**0.05**
TOTAL	***1.43***	***11.38***	***12.88***	***0.03***	***0.67***	***0.47***

3.9. Building Construction (2025) - Unmitigated	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**Summer**					
Off-Road Equipment	1.24	10.60	11.90	0.02	0.40	0.37
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.24**	**10.60**	**11.90**	**0.02**	**0.40**	**0.37**
Offsite						
Worker	0.10	0.07	1.25	0.00	0.19	0.04
Vendor	0.01	0.09	0.04	0.01	0.02	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.11**	**0.16**	**1.29**	**0.01**	**0.21**	**0.05**
TOTAL	***1.35***	***10.76***	***13.19***	***0.03***	***0.61***	***0.42***

3.11. Paving (2025) - Unmitigated

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.70	6.13	8.21	0.01	0.27	0.25
	Paving	0.97	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**1.67**	**6.13**	**8.21**	**0.01**	**0.27**	**0.25**
Offsite							
	Worker	0.08	0.06	0.94	0.00	0.14	0.03
	Vendor	0.01	0.06	0.03	0.01	0.01	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.09**	**0.12**	**0.97**	**0.01**	**0.15**	**0.04**
TOTAL		***1.76***	***6.25***	***9.18***	***0.02***	***0.42***	***0.29***

3.13. Architectural Coating (2025) - Unmitigated

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**Summer**					
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	8.43	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**8.56**	**0.88**	**1.14**	**0.01**	**0.03**	**0.03**
Offsite							
	Worker	0.02	0.01	0.25	0.00	0.04	0.01
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.02**	**0.01**	**0.25**	**0.00**	**0.04**	**0.01**
TOTAL		***8.58***	***0.89***	***1.39***	***0.01***	***0.07***	***0.04***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Asphalt Demolition	***2***	***16***	***17***	***0***	***3***	***1***
Site Preparation	***2***	***62***	***22***	***0***	***15***	***4***
Grading	***2***	***16***	***16***	***0***	***2***	***1***
Building Construction 2024	***1***	***11***	***13***	***0***	***1***	***0***
Building Construction 2025	***1***	***11***	***13***	***0***	***1***	***0***
Building Construction 2025, Paving, and Architectural Coating	***12***	***18***	***24***	***0***	***1***	***1***

MAX DAILY	**12**	**62**	**24**	**0**	**15**	**4**
MDAQMD Regional Thresholds (lbs/day)	**137**	**137**	**548**	**137**	**82**	**65**
Exceeds Thresholds?	No	No	No	No	No	No

Regional Annual Construction Emissions Worksheet

Annual		**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 Total**	**PM2.5 Total**
	2024	0.03	0.30	0.31	0.01	0.03	0.01
	2025	0.06	0.36	0.44	0.01	0.02	0.01
MAX ANNUAL		**0.06**	**0.36**	**0.44**	**0.01**	**0.03**	**0.01**
MDAQMD Regional Thresholds (tons/year)		**25**	**25**	**100**	**25**	**15**	**12**
Exceeds Thresholds?		No	No	No	No	No	No

Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1

MAX Daily (lbs/day)

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	2.96	1.65	30.90	0.05	5.35	1.37
Area	0.03	0.01	0.02	0.01	0.01	0.01
Energy	0.01	0.01	0.01	0.01	0.01	0.01
Total	**3.00**	**1.66**	**30.93**	**0.06**	**5.36**	**1.38**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	2.68	1.82	23.90	0.05	5.35	1.37
Area	0.03	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.01	0.01	0.01	0.01	0.01
Total	**2.72**	**1.83**	**23.91**	**0.06**	**5.36**	**1.38**

MAX Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	2.96	1.82	30.90	0.05	5.35	1.37
Area	0.03	0.01	0.02	0.01	0.01	0.01
Energy	0.01	0.01	0.01	0.01	0.01	0.01
Total	**3.00**	**1.83**	**30.93**	**0.06**	**5.36**	**1.38**
MDAQMD Regional Thresholds (lbs/day)	**137**	**137**	**548**	**137**	**82**	**65**
Exceeds Thresholds?	No	No	No	No	No	No

Annual (tons/year)

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.49	0.34	4.72	0.01	0.96	0.25
Area	0.01	0.01	0.01	0.01	0.01	0.01
Energy	0.01	0.01	0.01	0.01	0.01	0.01
Total	**0.51**	**0.35**	**4.73**	**0.02**	**0.97**	**0.26**
MDAQMD Regional Thresholds (tons/year)	**25**	**25**	**100**	**25**	**15**	**12**
Exceeds Thresholds?	No	No	No	No	No	No

GHG Emissions Inventory

Proposed Project Buildout

Construction[1]

	Annual ($MTCO_2e$/Year)	Max Daily (CO_2e/day)
2024	72	46,241
2025	76	4,148
Total Construction	**148**	**50,389**
30-Year Amortization[2]	**5**	**1,680**

Notes

1 CalEEMod, Version 2022.1

2 Total construction emissions are amortized over 30 years per SCAQMD methodology; SCAQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

Operations[1]

	Annual ($MTCO_2e$/Year)	Max Daily (CO_2e/day)	Percent of Emissions
Mobile	848	5,631	98%
Area	0	0	0%
Energy	4	26	0%
Energy – Outdoor Lighting[2]	5	30	1%
Water	0	0	0%
Solid Waste	1	4	0%
Refrigerants	0	0	0%
30-Year Construction Amortization	5	1,680	1%
Total	**863**	**7,371**	100%
MDAQMD Threshold (MTCO2e/year)[3]	90,719	548,000	
Exceed Threshold?	**No**	**No**	

Notes

1 CalEEMod, Version 2022.1

2 Outdoor lighting emissions based on hardscape square footage and SCE's 2025 carbon intensity factors.

3 MDAQMD Threshold is in tons per year (100,000 tons).

Appendix B General Biological Assessment for Yucca Valley Community Center Athletic Facility Project

Appendix

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GENERAL BIOLOGICAL ASSESSMENT
FOR
YUCCA VALLEY COMMUNITY CENTER ATHLETIC FACILITY PROJECT

YUCCA VALLEY
SAN BERNARDINO COUNTY
CALIFORNIA

Prepared for:

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JULY 2024

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APPENDICES

1.0 Introduction

Hernandez Environmental Services (HES) was contracted by Placeworks to prepare a General Biological Assessment (GBA) for an approximately 4.46-acre project site in the Town of Yucca Valley, San Bernardino County, California. The project site consists of the northeast portion of Assessor's Parcel Number (APN) 0595-36-127.

1.1 Project Site Location

The project site is located at 57090 29 Palms Hwy Yucca Valley, California 92284. Specifically, the project site is located within Section 35, Township 1 North and Range 5 East, in the *Yucca Valley North* and *Yucca Valley South* United States Geological Survey (USGS) 7.5' topographic quadrangles. The center point latitude and longitude for the project site are 34° 07' 30.8062" North, 116° 25' 06.2869" West (Figures 1 and 2).

1.2 Project Description

The proposed project includes recreational development within the northeast portion of the project site, located within the Yucca Valley Community Center. Development of the site will include basketball courts, pickleball courts, and a skate park. The project also includes the installation of related parking facilities, fencing, tables and benches (Figure 3).

2.0 Methodology

2.1 Literature Review

HES conducted a literature review and reviewed aerial photographs and topographic maps of the project site and surrounding areas. A five-mile radius was used to identify sensitive species with the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife Service (USFWS) Endangered Species Lists, and the California Native Plant Society (CNPS) rare plant lists to obtain species information for the project area. The CNDDB and USFWS critical habitat databases were utilized, together with Geographic Information System (GIS) software, to locate the previously recorded locations of sensitive plant and wildlife occurrences and designated critical habitat and determine the distance from the project site.

2.2 Field Survey

On May 7, 2024, HES conducted a field survey of the project site. The ambient temperature at 10:30 A.M. was 72 degrees Fahrenheit, sunny, with winds ranging from zero to four miles per hour from the southeast. The purpose of the field survey was to document the existing habitat conditions, obtain plant and animal species information, view the surrounding land uses, assess the potential for state and federal waters, assess the potential for wildlife movement corridors, and assess the presence of constituent elements for critical habitat, if present.

Linear transects spaced approximately 50 to 100 feet apart were walked across the project site for 100 percent coverage. All species observed were recorded. Global Positioning System (GPS) waypoints were taken to delineate specific habitat types, species locations, state or federal waters, and any other information that would be useful for the assessment of the project site. A comprehensive list of all plant and wildlife species that were detected during the field survey within the project site is included in Appendix A. Sensitive plant and wildlife species with the potential to occur within the project area are listed in Appendix B. Representative site photographs were taken and are included within Appendix B.

3.0 Existing Conditions and Results

3.1 Environmental Setting

The project site consists primarily of developed areas with a public safety office on site and disturbed habitat with sparse native vegetation. The site is bordered by residential development to the north, east, and west and recreational development to the south. The site is relatively flat with onsite elevations ranging from 3,241 feet above mean sea-level (AMSL) to 3,258 feet AMSL.

3.2 Plant and Habitat Communities

The 4.46-acre project site has two habitat types including 1.77 acres disturbed areas and 2.69 acres of developed areas.

Disturbed

The project site has 1.77 acres of disturbed areas on site. The disturbed areas on site are characterized by the presence of Joshua tree (*Yucca brevifolia*) and contain primarily non-native vegetation such as common Mediterranean grass (*Schismus barbatus*), within the understory. Other species observed in this area include cheatgrass (*Bromus tectorum*), red stemmed filaree (*Erodium cicutarium*), desert globemallow (*Sphaeralcea ambigua*), and Jerusalem thorn (*Parkinsonia aculeata)*.

Developed

The project site has 2.69 acres of developed areas on site. The developed areas on site contain cultivated vegetation including creosote (*Larrea tridentata*) and plains prickly pear (*Opuntia polyacantha*). Other species observed include, honey locust (*Gleditsia triacanthos*), Mexican walnut (*Juglans mollis*), Chinese pistache (*Pistacia chinensis*), desert almond (*Prunus fasciculata*), and jojoba (*Simmondsia chinensis*). There are areas of disturbance including dirt mounds and piles of gravel on site.

3.3 Wildlife

General wildlife species documented on the project site or within the vicinity of the site include the cactus wren (*Campylorhynchus brunneicapillus*), common raven (*Corvus corax*), desert

iguana (*Dipsosaurus dorsalis*), house finch (*Haemorhous mexicanus*), and house sparrow (*Passer domesticus*).

3.4 Regional Connectivity/Wildlife Movement

Wildlife movement corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbances. The project area was evaluated for its function as a wildlife corridor that species use to move between wildlife habitat zones. The project area consists of developed and disturbed habitat and is flat. No wildlife movement corridors were found to be present on the project site.

3.5 Sensitive Biological Resources

According to the CNDDB, a total of 31 sensitive species of plants and 36 sensitive species of animals have the potential to occur on or within the vicinity of the project area. These include those species listed or candidates for listing by the U. S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS). All habitats with the potential to be used by sensitive species were evaluated during the site visit and a determination has been made for the presence or probability of presence within this report. This section will address those species listed as Candidate, Rare, Threatened, or Endangered under the state and federal endangered species laws. Sensitive species which have a potential to occur will also be discussed in this section. Other special status species are addressed within Appendix B.

3.5.1 Sensitive Plant Resources

A total of 5 plant species are listed as state and/or federal Threatened, Endangered, or Candidate species; are 1B.1 listed plants on the CNPS Rare Plan Inventory; below are descriptions of these species:

Chaparral sand-verbena
Chaparral sand-verbena (*Abronia villosa var. aurita*) is ranked 1B.1 in the CNPS Rare Plant Inventory. It is found in sandy areas of chaparral, coastal scrub, and desert dunes habitats. No habitat for this species is present on the project site. **This species is not present.**

Coachella Valley milk-vetch
Coachella Velley milk-vetch (*Astragalus lentiginosus var. coachellae*) is a federally listed Endangered species and is ranked 1B.2 in the CNPS Rare Plant Inventory. It is typically found in sandy flats, washes, outwash fans, and on dunes. Its habitat includes desert dunes and Sonoran Desert scrub. No habitat for this species is present on the project site. **This species is not present.**

Triple-ribbed milk-vetch
The triple-ribbed milk-vetch (*Astragalus tricarinatus*) is a federally listed Endangered species and ranked 1B.2 in the CNPS Rare Plant Inventory. Its habitat include desert wash, Joshua tree woodland, and sonoran desert scrub habitats. It is often found on hot, rocky slopes in canyons and along edge of boulder-strewn desert washes with *Larrea* and *Encelia*. No habitat for this species exists on the project site. **This species is not present.**

Slender-horned spineflower
Slender-horned spineflower (*Dodecahema leptoceras*) is a federally and state listed Endangered species and is ranked 1B.1 in the CNPS Rare Plant inventory. This species is typically found near flood deposited terraces and washes. Its habitat includes chaparral, cismontane woodland, and coastal scrub (alluvial fan sage scrub). No habitat for this species is present on the project site. **This species is not present.**

Parish's daisy
Parish's daisy (*Erigeron parishii*) is a is a federally Threatened Species and is ranked 1B.1 in the CNPS Rare Plant Inventory. This species is typically found on carbonate; limestone mountain slopes; often associated with drainages and sometimes on granite. Its habitat includes Mojavean desert scrub, pinyon and juniper woodland. No habitat for this species exists on the project site. **This species is not present.**

Western Joshua tree
Western Joshua tree (*Yucca brevilfolia*) is listed as a Candidate Species under the California Endangered Species Act (CESA), which requires authorization under CESA for any take of the species (including removal of western Joshua tree or similar actions). This species is generally found at moderate elevations in the Mojave Desert between creosote bush scrub and pinyon-juniper woodlands. Suitable habitat is present on the project site. **This species is present**.

3.5.2 Sensitive Animal Resources

A total of 5 animal species are listed as state and/or federal Threatened, Endangered, Candidate will be reviewed in this section All sensitive species within a 5-mile radius of project area were reviewed and a complete list of those species are discussed within Appendix B. Below are descriptions of these species:

Burrowing owl
Burrowing owl (*Athene cunicularia*) is a CDFW Species of Special Concern. This species is a subterranean nester, dependent upon burrowing mammals such as the California ground squirrel. It inhabits open, dry annual or perennial grasslands and scrublands characterized by low-growing

vegetation. The project site is mostly paved. No burrows suitable for burrowing owl were found on site. No suitable habitat for this species occurs on site. **This species is not present.**

Crotch bumble bee

Crotch bumble bee (*Bombus crotchii*) is a state Candidate Endangered species. It's located in coastal California east to the Sierra-Cascade crest and south into Mexico. Its food plan genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. There is no habitat for this species on the project site. **This species is not present.**

Desert tortoise

Desert tortoise (*Gopherus agassizii*) is a state and federally listed Threatened species. This species is found in Joshua tree woodland, Mojavean desert scrub, and Sonoran Desert scrub habitats. It requires friable soil for burrow and nest construction. It prefers creosote bush habitat with large annual wildflower blooms. The project site is disturbed and adjacent to busy roads and human development. No burrows suitable for desert tortoise were found on site. No suitable habitat occurs on site. **This species is not present**.

Peninsular bighorn sheep DPS

Peninsular bighorn sheep DPS (*Ovis canadensis nelsoni pop. 2*) is a federally listed Endangered and state listed Threatened species. This species habitats include Eastern slopes of the Peninsular Ranges below 4,600 ft elevation. This DPS of the subspecies inhabits the Peninsular Ranges in southern California from the San Jacinto Mountains south to the US-Mexico International Border. Optimal habitat includes steep walled canyons and ridges bisected by rocky or sandy washes, with available water. No suitable habitat for this species is present on the project site. **This species is not present**.

Coachella Valley fringe-toed lizard

Coachella Valley fringe-toed lizard (*Uma inornata*) is a federally listed Threatened and state listed Endangered species. This species habitats include desert dunes and desert wash. This species is limited to sandy areas in Coachella Valley, Riverside County. It requires fine, loose, windblown sand for burrowing, interspersed with hardpan and widely spaced desert shrubs. No suitable habitat occurs on site. **This species is not present**.

Least Bell's vireo

Least Bell's vireo (*Vireo bellii pusillus)* is a federal and state listed Endangered Species. This species is found in riparian forest, riparian scrub, and riparian woodland. Nesting habitat of this species is restricted to willow and/or mule fat dominated riparian scrub along permanent or nearly permanent streams. No suitable habitat for this species is present on the project site. **This species is not present.**

3.6 Critical Habitat

Critical habitat is designated by USFWS for endangered and threatened species per the federal ESA (16 U.S.C. § 1533 (a)(3)), and to the extent prudent and determinable. Special management of critical habitat, including measures for water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types is required to ensure the long-term survival and recovery of the identified species. Critical habitat designation delineates all suitable habitat for the species. The project site is not located within or adjacent to federally designated critical habitat for endangered species.

3.7 Nesting Birds

Migratory non-game native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. The project site contains shrubs and trees that can be utilized by nesting birds and raptors during the nesting bird season of February 1 through September 15.

3.8 Jurisdictional Waters

The project site does not contain any drainage, riparian, or riverine features. There are no CDFW, United States Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB) jurisdictional waters within the project site boundaries.

4.0 Project Impacts

Impacts to Habitats

The proposed project consists of recreational development within the northeast portion of the project site, located within the Yucca Valley Community Center on the 4.46-acre site. Implementation of the proposed project will impact the entire 4.46-acre project site (Figure 5).

4.2 Impacts to Sensitive Species

Western Joshua tree

Western Joshua tree is listed as a Candidate Species under the California Endangered Species Act (CESA). One hundred thirty-five Joshua trees occur within the project boundary. Seventy-five Joshua trees are expected to be impacted by project activities through removal.

4.3 Impacts to Nesting Birds

Potential impacts to nesting birds may occur if ground disturbing activities or vegetation removal occur during the bird nesting season of February 1 through September 15. Implementation of the measures identified in the Recommendations section of this report will ensure that potential impacts to nesting birds are less than significant.

4.4 Impacts to Critical Habitat

The project site is not within federal critical habitat. No impacts to federal critical habitat are expected.

4.5 Impacts to Wildlife Movement Corridors

No wildlife movement corridors were found to be present on the project site. No impacts are expected.

4.6 Conflict with Local Policies or Ordinances Protecting Biological Resources

The project area is zoned as Public/Quasi-Public. If the Town of Yucca Valley guidelines and requirements are followed, no conflicts are expected.

4.7 Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan

The Project would not be anticipated to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.8 State and Federal Drainages

The project site does not contain any state or federal drainages, therefore no impacts to any jurisdictional drainages are expected.

5.0 Recommendations

Based upon the findings of this report, it is recommended that the following studies or surveys be performed as part of the project.

<u>Nesting Birds</u>

- It is recommended that vegetation removal be conducted outside of the nesting season for migratory birds to avoid direct impacts.

- If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, pre-construction nesting bird surveys shall be performed within three days prior to vegetation removal.

- If active nests are found during nesting bird surveys, they shall be flagged. A 250-foot buffer shall be fenced around song bird nests and a 500-foot buffer shall be fenced around raptor nests.

Western Joshua tree

- The western Joshua tree is listed as a Candidate Species and protected from unauthorized take under CESA Section 2081. The western Joshua tree has full protection under CESA and any take of the species (including removal of western Joshua tree or similar actions) will require authorization under CESA. A take may be authorized by the CDFW under a 2081 incidental take permit. CDFW also recommends you contact your city and county regarding any additional permits or approvals that they may require, because city and county permit processes may be separate from permits that are needed from CDFW. The project site is located within the standard fee area, as defined in subsection (e) of the California Department of Fish and Wildlife Code (Section 1927).

- A qualified biological monitor should be present on site during the transplantation or removal of the Joshua trees. During the remainder of the project the biological monitor shall perform weekly site visits to ensure no further project activities occur in the vicinity of the Joshua trees. The designated botanist shall be responsible for monitoring project activities to help avoid incidental take of Joshua trees.

- An education program (Worker Environmental Awareness Program-WEAP) shall be conducted for all persons employed or working in the project area before performing any work. The WEAP will inform all personnel of the Joshua trees protected status and instruct them to not enter the Joshua tree woodland south of the project site.

- Project-related personnel shall access the project area using existing routes, or routes identified in the project description, and shall not cross Joshua tree habitat outside or on route to the project area.

- The designated botanist shall have authority to immediately stop any activity and/or to order any reasonable measure to avoid unauthorized take of an individual Joshua tree.

6.0 Certification

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

Date 07/01/2024 Signed _____

PROJECT MANAGER

Fieldwork Performed By:

Sarah Vasquez

_____

Associate Biologist

Carissa Gomez

_____

Associate Biologist

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FIGURE 1

Figure 1

Location Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

Project Site Boundary

N

Hernandez Environmental Services

FIGURE 2

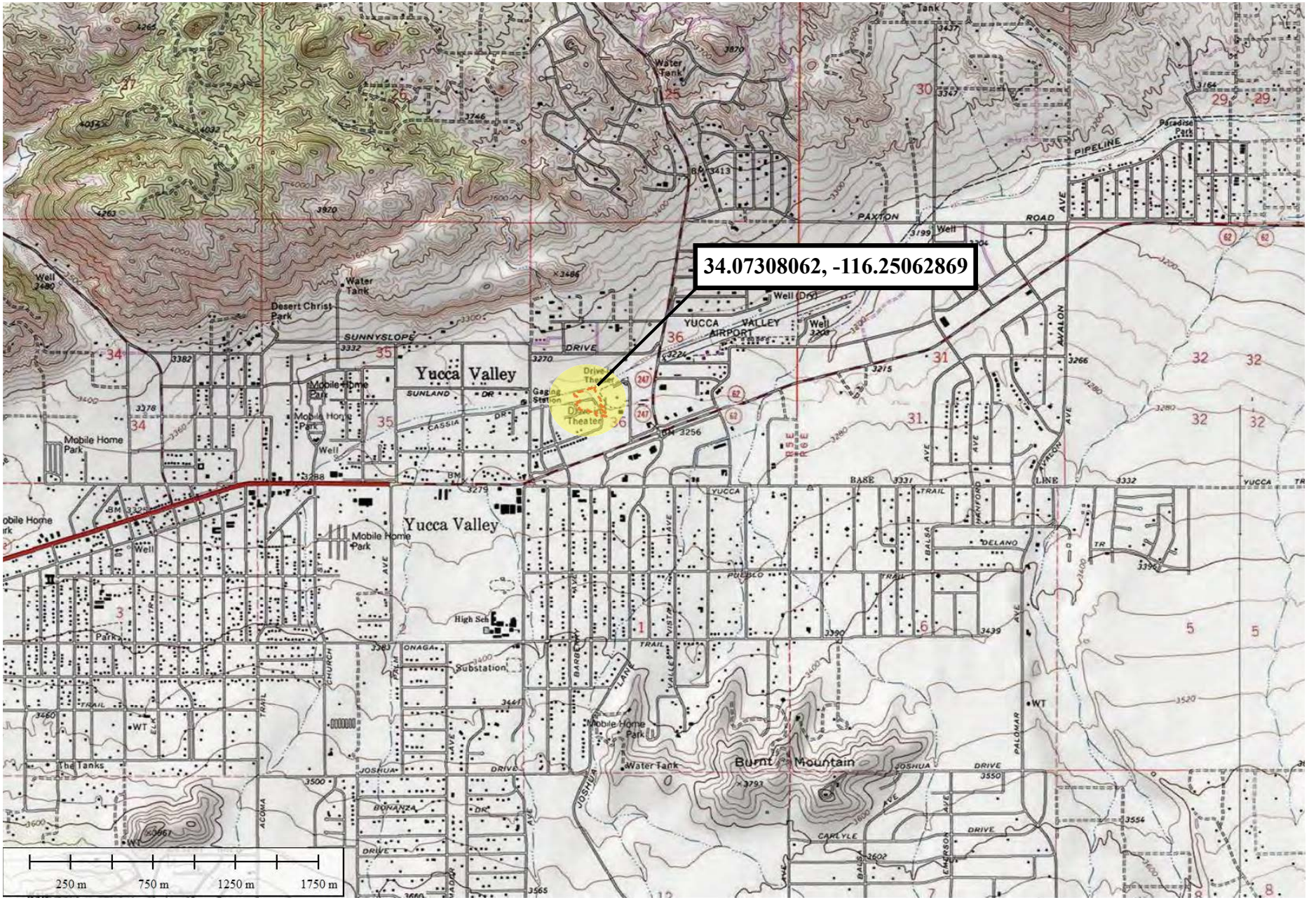

Figure 2

Vicinity Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

Project Site Boundary

N

Hernandez Environmental Services

FIGURE 3

Figure 4 - Site Plan

NEW AMENITIES

1 ASPHALT PARKING (24 STD STALLS AND 2 ADA STALLS)
2 TWO FULL BASKETBALL COURTS
3 THIRTEEN STANDARD PICKLEBALL COURTS
4 ONE TOURNAMENT PICKLEBALL COURT
5 SKATE PARK
6 PERIMETER FENCING
7 TABLES WITH STEEL SHADE STRUCTURES
8 BENCHES WITH FABRIC SHADE STRUCTURES
9 BLEACHERS WITH FABRIC SHADE STRUCTURES
10 DRINKING FOUNTAIN AND BOTTLE FILLER
11 ADDITIONAL ASPHALT PARKING (24 STANDARD STALLS)
12 RESTROOM BUILDING
13 BASKETBALL BARRIER FENCE

LEGEND

CONCRETE PAVING
ACCENT CONCRETE PAVERS
ASPHALT PAVING
PLANTER AREA
NEW TREES

Project Boundary

0 75
Scale (Feet)

Source: RHA Architects 2024.

FIGURE 4

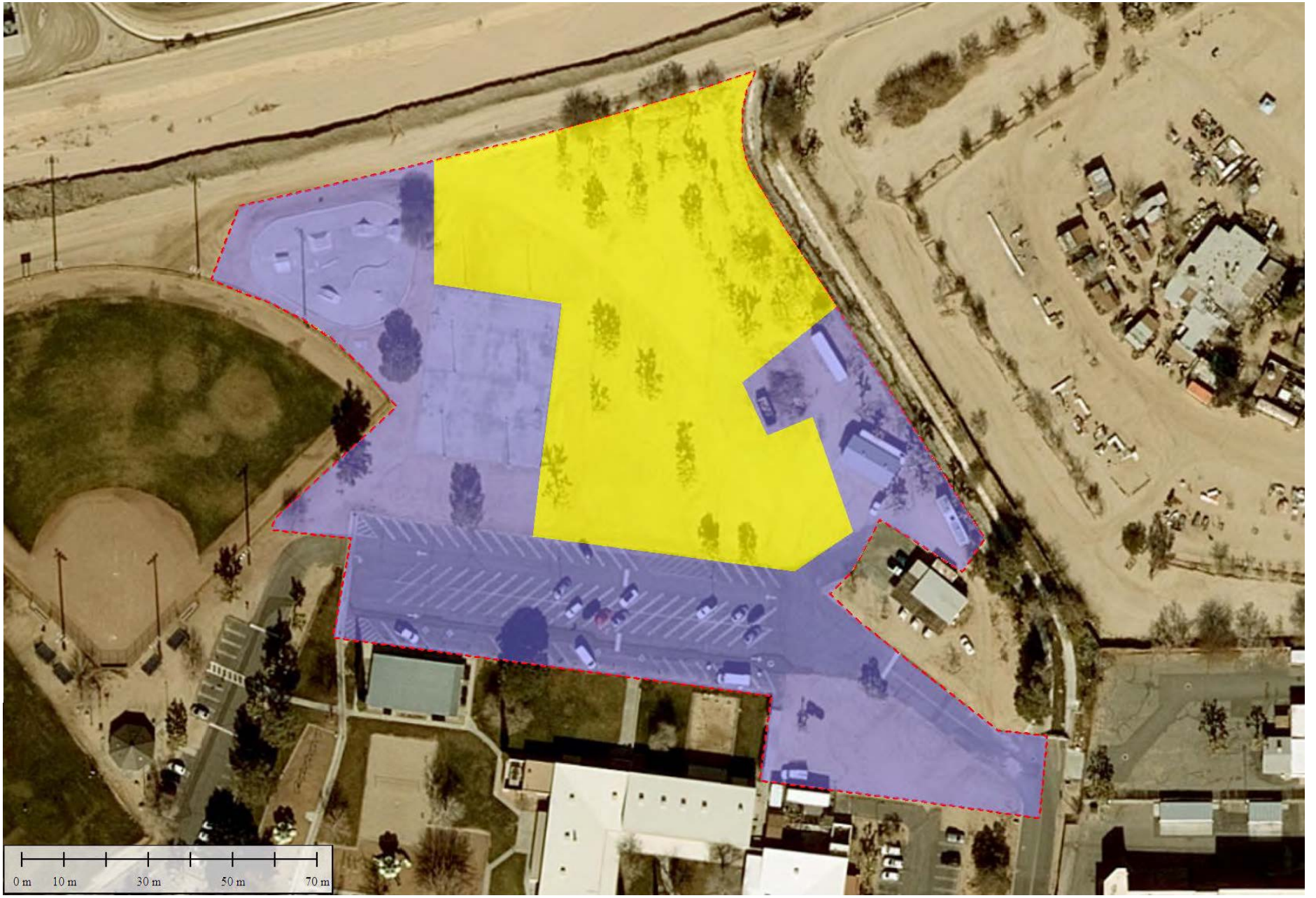

Figure 4

Habitat Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

- Project Site Boundary
- Disturbed (1.77 Acres)
- Developed (2.69 Acres)

N

Hernandez Environmental Services

FIGURE 5

Figure 5

Impact Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

Project Site Boundary

N

Hernandez Environmental Services

APPENDIX A

Observed Species List

Plant List

Scientific Name	Common Name
Bromus rubens	Red brome
Bromus tectorum	Cheatgrass
Calocedrus decurrens	Incense cedar
Chilopsis linearis	Desert willow
Cleomella arborea	Bladderpod
Cylindropuntia echinocarpa	Silver cholla
Cylindropuntia ramosissima	Branched pencil cholla
Echinocereus engelmannii	Engelmann's hedgehog cactus
Encelia farinosa	Brittlebush
Eragrostis mexicana	Mexican lovegrass
Eschscholzia californica	California poppy
Eucalyptus robusta	Swamp mahogany
Euonymus japonicus	Japanese euonymus
Ferocactus cylindraceus	Barrel cactus
Fouquieria splendens	Ocotillo
Gleditsia triacanthos	Honey locust
Juglans mollis	Mexican walnut
Larrea tridentata	Creosote
Opuntia polyacantha	Plains pricklypear
Opuntia basilaris	Beavertail cactus
Parkinsonia aculeata	Jerusalem thorn
Pinus sp.	Pine sp.

Pistacia chinensis	Chinese pistache
Prosopis glandulosa	Honey mesquite
Prunus fasciculata	Desert almond
Psorothamnus schotti	Schott's dalea
Salsola tragus	Tumbleweed
Salvia apiana	White sage
Schismus barbatus	Common Mediterranean grass
Simmondsia chinensis	Jojoba
Sphaeralcea ambigua	Desert globemallow
Stipa speciosa	Desert needle grass
Yucca brevifolia	Joshua tree

Wildlife List

Scientific Name	Common Name
Campylorhynchus brunneicapillus	Cactus wren
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Dipsosaurus dorsalis	Desert iguana
Haemorhous mexicanus	House finch
Otospermophilus beecheyi	California ground squirrel
Passer domesticus	House sparrow

APPENDIX B

Scientific Name	Common Name	Taxon Group	Federal List	State List	Rare Plant Rank	Other Status	Habitats	General Habitat	Microhabitat	Presence/ Absence
Abronia villosa var. aurita	chaparral sand-verbena	Dicots	None	None	1B.1	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral | Coastal scrub | Desert dunes	Chaparral, coastal scrub, desert dunes.	Sandy areas. -60-1570 m.	There is no suitable habitat on site. **This species is not present.**
Astragalus bernardinus	San Bernardino milk-vetch	Dicots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Joshua tree woodland | Limestone | Pinon & juniper woodlands	Joshua tree woodland, pinyon and juniper woodland.	Granitic or carbonate substrates. 290-2290 m.	There is no suitable habitat on site. **This species is not present.**
Astragalus lentiginosus var. coachellae	Coachella Valley milk-vetch	Dicots	Endangered	None	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_USDA-US Dept of Agriculture	Desert dunes | Sonoran desert scrub	Sonoran desert scrub, desert dunes.	Sandy flats, washes, outwash fans, sometimes on dunes. 35-695 m.	There is no suitable habitat on site. **This species is not present.**

Astragalus tricarinatus	triple-ribbed milk-vetch	Dicots	Endangered	None	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Desert wash | Joshua tree woodland | Sonoran desert scrub	Joshua tree woodland, Sonoran desert scrub.	Hot, rocky slopes in canyons and along edge of boulder-strewn desert washes, with Larrea and Encelia. 455-1585 m.	There is no suitable habitat on site. **This species is not present.**
Berberis fremontii	Fremont barberry	Dicots	None	None	2B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Joshua tree woodland | Pinon & juniper woodlands	Pinyon and juniper woodland, Joshua tree woodland.	Rocky, sometimes granitic. 1140-1770 m.	There is no suitable habitat on site. **This species is not present.**
Boechera dispar	pinyon rockcress	Dicots	None	None	2B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Joshua tree woodland | Mojavean desert scrub | Pinon & juniper woodlands	Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub.	Granitic, gravelly slopes and mesas. Often under desert shrubs which support it as it grows. 1005-2805 m.	There is no suitable habitat on site. **This species is not present.**
Boechera lincolnensis	Lincoln rockcress	Dicots	None	None	2B.3	BLM_S-Sensitive	Chenopod scrub | Limestone | Mojavean desert scrub	Chenopod scrub, Mojavean desert scrub.	On limestone. 880-2410 m.	There is no suitable habitat on site. **This species is not present.**

Boechera shockleyi	Shockley's rockcress	Dicots	None	None	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Limestone | Pinon & juniper woodlands	Pinyon and juniper woodland.	On ridges, rocky outcrops and openings on limestone or quartzite. 875-2515 m.	There is no suitable habitat on site. **This species is not present.**
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Monocots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden | USFS_S-Sensitive	Chaparral | Lower montane coniferous forest | Meadow & seep	Meadows and seeps, chaparral, lower montane coniferous forest.	Vernally moist places in yellow-pine forest, chaparral. 195-2530 m.	There is no suitable habitat on site. **This species is not present.**
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Dicots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_USDA-US Dept of Agriculture | USFS_S-Sensitive	Coastal scrub | Mojavean desert scrub | Pinon & juniper woodlands	Mojavean desert scrub, pinyon and juniper woodland, coastal scrub (alluvial fans).	Sandy or gravelly places. 365-1830 m.	There is no suitable habitat on site. **This species is not present.**

Cymopterus multinervatus	purple-nerve cymopterus	Dicots	None	None	2B.2		Joshua tree woodland | Mojavean desert scrub	Mojavean desert scrub, pinyon and juniper woodland.	Sandy or gravelly places. 765-2195 m.	There is no suitable habitat on site. **This species is not present.**
Desert Fan Palm Oasis Woodland	Desert Fan Palm Oasis Woodland	Riparian	None	None			Riparian woodland			There is no suitable habitat on site. **This species is not present.**
Dodecahema leptoceras	slender-horned spineflower	Dicots	Endangered	Endangered	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral | Cismontane woodland | Coastal scrub	Chaparral, cismontane woodland, coastal scrub (alluvial fan sage scrub).	Flood deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. Sandy soils. 200-765 m.	There is no suitable habitat on site. **This species is not present.**

Eremothera boothii ssp. boothii	Booth's evening-primrose	Dicots	None	None	2B.3		Joshua tree woodland | Pinon & juniper woodlands	Joshua tree woodland, pinyon and juniper woodland.	285-2290 m.	There is no suitable habitat on site. **This species is not present.**
Eriastrum harwoodii	Harwood's eriastrum	Dicots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_USDA-US Dept of Agriculture	Desert dunes	Desert dunes.	Sandy soils. 15-1100m.	There is no suitable habitat on site. **This species is not present.**
Erigeron parishii	Parish's daisy	Dicots	Threatened	None	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Limestone | Mojavean desert scrub | Pinon & juniper woodlands	Mojavean desert scrub, pinyon and juniper woodland.	Often on carbonate; limestone mountain slopes; often associated with drainages. Sometimes on grainite. 1050-2245 m.	There is no suitable habitat on site. **This species is not present.**

Euphorbia arizonica	Arizona spurge	Dicots	None	None	2B.3		Sonoran desert scrub	Sonoran desert scrub.	Sandy soils. 150-900 m.	There is no suitable habitat on site. **This species is not present.**
Euphorbia misera	cliff spurge	Dicots	None	None	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Coastal bluff scrub | Coastal scrub | Mojavean desert scrub	Coastal bluff scrub, coastal scrub, Mojavean desert scrub.	Rocky sites. 3-430 m.	There is no suitable habitat on site. **This species is not present.**
Grusonia parishii	Parish's club-cholla	Dicots	None	None	2B.2		Joshua tree woodland | Mojavean desert scrub | Sonoran desert scrub	Mojavean desert scrub, Sonoran desert scrub, Joshua tree woodland.	Sandy or rocky sites. 840-1600 m.	There is no suitable habitat on site. **This species is not present.**
Linanthus bernardinus	Pioneertown linanthus	Dicots	None	None	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Joshua tree woodland | Pinon & juniper woodlands	Joshua tree woodland, pinyon and juniper woodland.	1120-1345 m.	There is no suitable habitat on site. **This species is not present.**

Linanthus maculatus ssp. maculatus	Little San Bernardino Mtns. linanthus	Dicots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Desert dunes | Desert wash | Joshua tree woodland | Mojavean desert scrub | Sonoran desert scrub	Desert dunes, Sonoran desert scrub, Mojavean desert scrub, Joshua tree woodland.	Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 135-1220 m.	There is no suitable habitat on site. **This species is not present.**
Mentzelia tricuspis	spiny-hair blazing star	Dicots	None	None	2B.1		Mojavean desert scrub	Mojavean desert scrub.	Sandy or gravelly slopes and washes.150-1280 m.	There is no suitable habitat on site. **This species is not present.**
Mesquite Bosque	Mesquite Bosque	Riparian	None	None			Riparian forest			There is no suitable habitat on site. **This species is not present.**
Mojave Riparian Forest	Mojave Riparian Forest	Riparian	None	None			Riparian forest			There is no suitable habitat on site. **This species is not present.**

Monardella robisonii	Robison's monardella	Dicots	None	None	1B.3	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Pinon & juniper woodlands	Pinyon and juniper woodland.	Rocky desert slopes, often among granitic boulders. 610-1615 m.	There is no suitable habitat on site. **This species is not present.**
Nemacaulis denudata var. gracilis	slender cottonheads	Dicots	None	None	2B.2		Coastal dunes | Desert dunes | Sonoran desert scrub	Coastal dunes, desert dunes, Sonoran desert scrub.	In dunes or sand. -45-745 m.	There is no suitable habitat on site. **This species is not present.**
Penstemon clevelandii var. mohavensis	Mojave beardtongue	Dicots	None	None	1B.2		Mojavean desert scrub | Pinon & juniper woodlands	Mojavean desert scrub, pinyon and juniper woodland.	Rocky, granitic (often). 925-1620 m.	There is no suitable habitat on site. **This species is not present.**
Petalonyx linearis	narrow-leaf sandpaper-plant	Dicots	None	None	2B.3		Mojavean desert scrub | Sonoran desert scrub	Mojavean desert scrub, Sonoran desert scrub.	Sandy or rocky canyons. -30-1090 m.	There is no suitable habitat on site. **This species is not present.**

Saltugilia latimeri	Latimer's woodland-gilia	Dicots	None	None	1B.2	BLM_S-Sensitive | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | SB_USDA-US Dept of Agriculture | USFS_S-Sensitive	Chaparral | Limestone | Mojavean desert scrub | Pinon & juniper woodlands	Chaparral, Mojavean desert scrub, pinyon and juniper woodland.	Rocky or sandy substrate; sometimes in washes, sometimes limestone. 120-2200 m.	There is no suitable habitat on site. **This species is not present.**
Selaginella eremophila	desert spike-moss	Ferns	None	None	2B.2		Chaparral | Sonoran desert scrub	Sonoran desert scrub, chaparral.	Shaded sites, gravelly soils; crevices or among rocks. 225-1570 m.	There is no suitable habitat on site. **This species is not present.**
Streptanthus campestris	southern jewelflower	Dicots	None	None	1B.3	BLM_S-Sensitive | SB_CRES-San Diego Zoo CRES Native Gene Seed Bank | USFS_S-Sensitive	Chaparral | Lower montane coniferous forest | Pinon & juniper woodlands	Chaparral, lower montane coniferous forest, pinyon and juniper woodland.	Open, rocky areas. 605-2590 m.	There is no suitable habitat on site. **This species is not present.**

Scientific Name	Common Name	Taxon Group	Federal List	State List	Other Status	Habitats	General Habitat	Microhabitat	Presence/ Absence
Accipiter cooperii	Cooper's hawk	Birds	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest	Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	There is no suitable habitat on site. **This species is not present.**
Anniella stebbinsi	Southern California legless lizard	Reptiles	None	None	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub	Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County.	Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	There is no suitable habitat on site. **This species is not present.**

Antrozous pallidus	pallid bat	Mammals	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	There is no suitable habitat on site. **This species is not present.**
Aquila chrysaetos	golden eagle	Birds	None	None	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern	Broadleaved upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin scrub | Lower montane coniferous forest | Pinon & juniper woodlands | Upper montane coniferous forest | Valley & foothill grassland	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	There is no suitable habitat on site. **This species is not present.**

Asio otus	long-eared owl	Birds	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Cismontane woodland | Great Basin scrub | Riparian forest | Riparian woodland | Upper montane coniferous forest	Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses.	Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	There is no suitable habitat on site. **This species is not present.**
Athene cunicularia	burrowing owl	Birds	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	There is no suitable habitat on site. **This species is not present.**
Bombus crotchii	Crotch's bumble bee	Insects	None	Candidate Endangered	IUCN_EN-Endangered		Coastal California east to the Sierra-Cascade crest and south into Mexico.	Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	There is no suitable habitat on site. **This species is not present.**

Chaetodipus fallax pallidus	pallid San Diego pocket mouse	Mammals	None	None		Desert wash | Pinon & juniper woodlands | Sonoran desert scrub	Desert border areas of San Diego, Riverside, San Bernardino, and Los Angeles counties in desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc.	Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	There is no suitable habitat on site. **This species is not present.**

Corynorhinus townsendii	Townsend's big-eared bat	Mammals	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	There is no suitable habitat on site. **This species is not present.**
Crotalus ruber	red-diamond rattlesnake	Reptiles	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Mojavean desert scrub | Sonoran desert scrub	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains.	Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	There is no suitable habitat on site. **This species is not present.**

Eremarionta morongoana	Morongo (=Colorado) desertsnail	Mollusks	None	None	IUCN_NT-Near Threatened	Mojavean desert scrub	Found in the eastern San Bernardino Mountains, the Little San Bernardino Mountains, and Mecca Hills along the the edge of the Coachella Valley and southern Mojave Desert.	Occur in rockslides with deep talus surrounded by desert scrub, or under beds of fallen palm fronds where tumbled rocks are present at palm oases.	There is no suitable habitat on site. **This species is not present.**
Falco mexicanus	prairie falcon	Birds	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland	Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	There is no suitable habitat on site. **This species is not present.**
Gopherus agassizii	desert tortoise	Reptiles	Threatened	Threatened	IUCN_CR-Critically Endangered	Joshua tree woodland | Mojavean desert scrub | Sonoran desert scrub	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat.	Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	There is no suitable habitat on site. **This species is not present.**

Icteria virens	yellow-breasted chat	Birds	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses.	Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	There is no suitable habitat on site. **This species is not present.**
Lasiurus cinereus	hoary bat	Mammals	None	None	IUCN_LC-Least Concern	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	There is no suitable habitat on site. **This species is not present.**
Lasiurus xanthinus	western yellow bat	Mammals	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Desert wash	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats.	Roosts in trees, particularly palms. Forages over water and among trees.	There is no suitable habitat on site. **This species is not present.**

Myiarchus tyrannulus	brown-crested flycatcher	Birds	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forest | Riparian woodland	Inhabits desert riparian areas along the Colorado River, as well as other desert oases and riparian areas NW to Victorville.	Requires riparian thickets, trees, snags, and shrubs for foraging perches, nesting cavities, and cover.	There is no suitable habitat on site. **This species is not present.**
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	None	None	CDFW_SSC-Species of Special Concern	Coastal scrub	Coastal scrub of Southern California from San Diego County to San Luis Obispo County.	Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	There is no suitable habitat on site. **This species is not present.**

Ovis canadensis nelsoni	desert bighorn sheep	Mammals	None	None	BLM_S-Sensitive | CDFW_FP-Fully Protected | USFS_S-Sensitive	Alpine | Alpine dwarf scrub | Chaparral | Chenopod scrub | Great Basin scrub | Mojavean desert scrub | Montane dwarf scrub | Pinon & juniper woodlands | Riparian woodland | Sonoran desert scrub	Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co.	Open, rocky, steep areas with available water and herbaceous forage.	There is no suitable habitat on site. **This species is not present.**
Ovis canadensis nelsoni pop. 2	Peninsular bighorn sheep DPS	Mammals	Endangered	Threatened	CDFW_FP-Fully Protected	Alpine | Alpine dwarf scrub | Chaparral | Chenopod scrub | Great Basin scrub | Mojavean desert scrub | Montane dwarf scrub | Pinon & juniper woodlands | Riparian woodland | Sonoran desert scrub	Eastern slopes of the Peninsular Ranges below 4,600 ft elevation. This DPS of the subspecies inhabits the Peninsular Ranges in southern California from the San Jacinto Mountains south to the US-Mexico International Border.	Optimal habitat includes steep walled canyons and ridges bisected by rocky or sandy washes, with available water.	There is no suitable habitat on site. **This species is not present.**

Paranomada californica	California cuckoo bee	Insects	None	None					There is no suitable habitat on site. **This species is not present.**
Parnopes borregoensis	Borrego parnopes cuckoo wasp	Insects	None	None			Known from San Diego, San Bernardino, and Inyo counties.		There is no suitable habitat on site. **This species is not present.**
Perognathus longimembris bangsi	Palm Springs pocket mouse	Mammals	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern	Desert wash | Sonoran desert scrub	Desert riparian, desert scrub, desert wash and sagebrush habitats. Most common in creosote-dominated desert scrub.	Rarely found on rocky sites. Occurs in all canopy coverage classes.	There is no suitable habitat on site. **This species is not present.**

Phrynosoma blainvillii	coast horned lizard	Reptiles	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	There is no suitable habitat on site. **This species is not present.**
Phrynosoma mcallii	flat-tailed horned lizard	Reptiles	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Desert dunes | Mojavean desert scrub | Sonoran desert scrub	Restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial counties.	Critical habitat element is fine sand, into which lizards burrow to avoid temperature extremes; requires vegetative cover and ants.	There is no suitable habitat on site. **This species is not present.**
Piranga rubra	summer tanager	Birds	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest	Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts.	Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	There is no suitable habitat on site. **This species is not present.**

Pyrocephalus rubinus	vermilion flycatcher	Birds	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Wetland	During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, and other open, mesic areas.	Nest in cottonwood, willow, mesquite, and other large desert riparian trees.	There is no suitable habitat on site. **This species is not present.**
Setophaga petechia	yellow warbler	Birds	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada.	Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	There is no suitable habitat on site. **This species is not present.**
Stenopelmatus cahuilaensis	Coachella Valley jerusalem cricket	Insects	None	None	IUCN_VU-Vulnerable	Desert dunes	Inhabits a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs.	Found in the large, undulating dunes piled up at the north base of Mt San Jacinto.	There is no suitable habitat on site. **This species is not present.**

Taxidea taxus	American badger	Mammals	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone |	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	There is no suitable habitat on site. **This species is not present.**

Toxostoma bendirei	Bendire's thrasher	Birds	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFWS_BCC-Birds of Conservation Concern	Joshua tree woodland | Mojavean desert scrub	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert.	Nests in cholla, yucca, palo verde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	There is no suitable habitat on site. **This species is not present.**
Toxostoma lecontei	Le Conte's thrasher	Birds	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Desert wash | Mojavean desert scrub | Sonoran desert scrub	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats.	Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	There is no suitable habitat on site. **This species is not present.**
Uma inornata	Coachella Valley fringe-toed lizard	Reptiles	Threatened	Endangered	IUCN_EN-Endangered	Desert dunes | Desert wash	Limited to sandy areas in the Coachella Valley, Riverside County.	Requires fine, loose, windblown sand (for burrowing), interspersed with hardpan and widely-spaced desert shrubs.	There is no suitable habitat on site. **This species is not present.**

Uma scoparia	Mojave fringe-toed lizard	Reptiles	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Desert dunes | Desert wash | Mojavean desert scrub	Fine, loose, wind-blown sand in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub and desert scrub.	Shrubs or annual plants may be necessary for arthropods found in the diet.	There is no suitable habitat on site. **This species is not present.**
Vireo bellii pusillus	least Bell's vireo	Birds	Endangered	Endangered		Riparian forest | Riparian scrub | Riparian woodland	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	There is no suitable habitat on site. **This species is not present.**
Xerospermophilus tereticaudus chlorus	Palm Springs round-tailed ground squirrel	Mammals	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern	Chenopod scrub | Sonoran desert scrub	Restricted to the Coachella Valley. Prefers desert succulent scrub, desert wash, desert scrub, alkali scrub, and levees.	Prefers open, flat, grassy areas in fine-textured, sandy soil. Density correlated with winter rainfall.	There is no suitable habitat on site. **This species is not present.**

APPENDIX C

View of cultivated vegetation near entrance of site. View looking east.

View of the public safety office on site. View looking northeast.

View of parking lot within southern portion of site. View looking west.

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View of skate park within northern portion of site. View looking northeast.

View of disturbed area with Joshua trees to be removed. View looking east.

View of disturbed area where impacts will occur followed by developed area. View looking south.

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APPENDIX D

WESTERN JOSHUA TREE CENSUS REPORT
FOR
YUCCA VALLEY COMMUNITY CENTER ATHLETIC FACILITY PROJECT

YUCCA VALLEY
SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

Placeworks
3 MacArthur Place, Suite 1100
Santa Ana, CA 92707

Prepared by:

Hernandez Environmental Services
17037 Lakeshore Drive
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JULY 2024

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APPENDICES

1.0 Introduction

Hernandez Environmental Services (HES) was retained by Placeworks to conduct a census of the western Joshua tree (WJT) on the approximately 4.46-acre project site in the Town of Yucca Valley, San Bernardino County, California. The project site consists of the northeast portion of Assessor's Parcel Number (APN) 0595-36-127.

1.1 Purpose

The purpose of this report is to identify and locate all WJT on the project site and within a 50-foot buffer area around the project site. HES biologists took measurements, photographs, and descriptions of each tree to accurately determine the number of trees that will be impacted by project activities.

1.2 Project Location

The project site is located at 57090 29 Palms Hwy Yucca Valley, California 92284. Specifically, the project site is located within Section 35, Township 1 North and Range 5 East, in the *Yucca Valley North* and *Yucca Valley South* United States Geological Survey (USGS) 7.5' topographic quadrangles. The center point latitude and longitude for the project site are 34° 07' 30.8062" North, 116° 25' 06.2869" West (Figures 1 and 2).

1.3 Project Description

The modified project includes recreational development within the northeast portion of the project site, located within the Yucca Valley Community Center. Development of the site will include basketball courts, pickleball courts, and a skate park. The project also includes the installation of related parking facilities, fencing, tables and benches (Figure 3).

2.0 Regulatory Background

"Pursuant to the provisions of Section 2074.2 of the Fish and Game Code, the California Fish and Game Commission (Commission), at its September 22, 2020, meeting, accepted for consideration the petition submitted to list the WJT (*Yucca brevifolia*) as threatened or endangered under the California Endangered Species Act. Pursuant to subdivision (e)(2) of Section 2074.2 of the Fish and Game Code, the Commission determined that the amount of information contained in the petition, when considered in light of the California Department of Fish and Wildlife's written evaluation report, the comments received, and the remainder of the administrative record, would lead a reasonable person to conclude there is a substantial possibility the requested listing could occur. Based on that finding and the acceptance of the

petition, the Commission is also providing notice that the western Joshua tree is a candidate species as defined by Section 2068 of the Fish and Game Code."

On July 10, 2023, the WJT Conservation Act (WJTCA) was passed to conserve WJT and its habitat while supporting the states renewable energy and housing priorities. The WJTCA prohibits the importation, export, take, possession, purchase, or sale of any WJT in California unless authorized by California Department of Fish and Wildlife (CDFW). According to Section 1927.3 of the Fish and Game Code, the department may authorize, by permit, the taking of a WJT if all of the following conditions are met:

(1) The permittee submits to the department for its approval a census of all WJT on the project site, including size information and photographs, that categorize the WJT according to the following size classes: (A) Less than one meter in height. (B) One meter or greater but less than five meters in height. (C) Five meters or greater in height.

(2) The permittee avoids and minimizes impacts to, and the taking of, the WJT to the maximum extent practicable. Minimization may include trimming, encroachment on root systems, relocation, or other actions that result in detrimental but nonlethal impacts to a WJT.

(3) The permittee mitigates all impacts to, and taking of, the WJT. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking of the species. When various measures are available to meet this obligation, the measures required shall maintain the permittee's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. The permittee shall ensure adequate funding to implement the mitigation measures. In lieu of completing the mitigation obligation on its own, the permittee may elect to satisfy this mitigation obligation by paying fees, pursuant to the fee schedule outlined in the WJTCA for deposit into the fund.

(4) (A) The department may include permit conditions that require the permittee to relocate one or more of the WJT. If relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the WJT. These relocation measures shall include, but are not limited to, all of the following:

   i. A requirement that the relocated WJT is placed in a location and with proper orientation to improve its survival.
   ii. A requirement that WJT are relocated at a time that maximizes their survival when feasible.
   iii. A requirement that a desert native plant specialist be onsite to oversee relocation.

   (B) The department may limit relocation to certain size classes of trees.

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(C) By July 1, 2024, the department shall adopt guidelines and relocation protocols, based on the best available science, to relocate WJT successfully. The department shall consult with desert native plant specialists as part of the development of these guidelines and relocation protocols. Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code shall not apply to the development, adoption, or amendment of guidelines and relocation protocols pursuant to this subparagraph.

3.0 Methodology

HES conducted a focused WJT survey on May 7, 2024. The onsite evaluation complies with the CDFW Census Instructions. The entire project site was traversed on foot. HES systematically surveyed the site using parallel transects. All WJTs onsite and within a 50-foot buffer were mapped using a sub-meter Geographical Positioning System (GPS). A photograph of each tree was taken. The height from the middle of the base of the trunk to the top of the leaf furthest from the base of each WJT stem or trunk arising from the ground was obtained using a measuring tape. Current flower clusters or old flower stalks were not included in the measurements. Any leaning WJT were not measured perpendicular to the ground. No more than two measurements were used to measure WJT trunks that followed an unusual path.

Other data that was collected during the survey includes whether or not each tree was mature; if fruits and/or flowers were present; and, if a tree was live or dead. WJT only branch after flowering, so any tree that had flowers/fruits or more than one branch was considered mature. A tree was only recorded as having fruits if the fruits appeared to have been from the current growing season. Fruits that are starting to develop while flowers are present were also recorded. Any dark brown or small/undeveloped fruits were not recorded. According to the WJTCA a tree is considered dead if it meets at least one of the following criteria:

(1) Has not burned and has no green leaves, no new growth on the main stem, and no basal sprouts.
(2) Has partially or fully burned at least 18 months prior and otherwise satisfies paragraph (1).
(3) Has fallen and is completely detached from its roots or has fallen and its roots are no longer in contact with the soil.

4.0 Results

A total of one hundred thirty-five WJTs were documented within the project area. Seventy-five of these trees are expected to be impacted by project activities. WJT locations are displayed on Figure 3, *Joshua Tree Location Map*. Appendix A of this report, The WJT Census Table, contains all other data collected on the WJT documented within the project area including the

tree height and health of each WJT found on the site.

The project site is located within the standard fee area, as defined in subsection (e) of the California Department of Fish and Wildlife Code (Section 1927) and as identified below within Table 1.

Table 1.

WJT Tree Size Class & Mitigation Fee

WJT Size Class		Number of WJT	Reduced Mitigation Fee
A	Less than one meter in height	14	$150
B	One meter or greater but less than five meters in height	36	$200
C	Five meters or greater in height	25	$1000

5.0 Recommendations

Based upon the findings of this report, it is recommended that the following measures be implemented as part of the project to avoid, minimize, or compensate for the anticipated impacts from project activities:

- Prior to the initiation of WJT removal, obtain a WJT Conservation Act Incidental Take Permit from CDFW. The incidental take permit will contain a description of your project and avoidance and minimization measures to reduce the project's impact on WJTs.
    - The applicant shall pay statutorily prescribed fees in lieu of conducting mitigation activities.

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6.0 Certification

I hereby certify that the statements furnished above, the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: July 1, 2024

Signed: 

Juan J. Hernandez
Principal Biologist

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7.0 References

California Department of Fish and Wildlife. 2023. Fish and Game Code of California, Division 2. Chapter 11.5. *Western Joshua Tree Conservation Act* Section 1927-1927.12.

FIGURE 1

Figure 1

Location Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

Project Site Boundary

N

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FIGURE 2

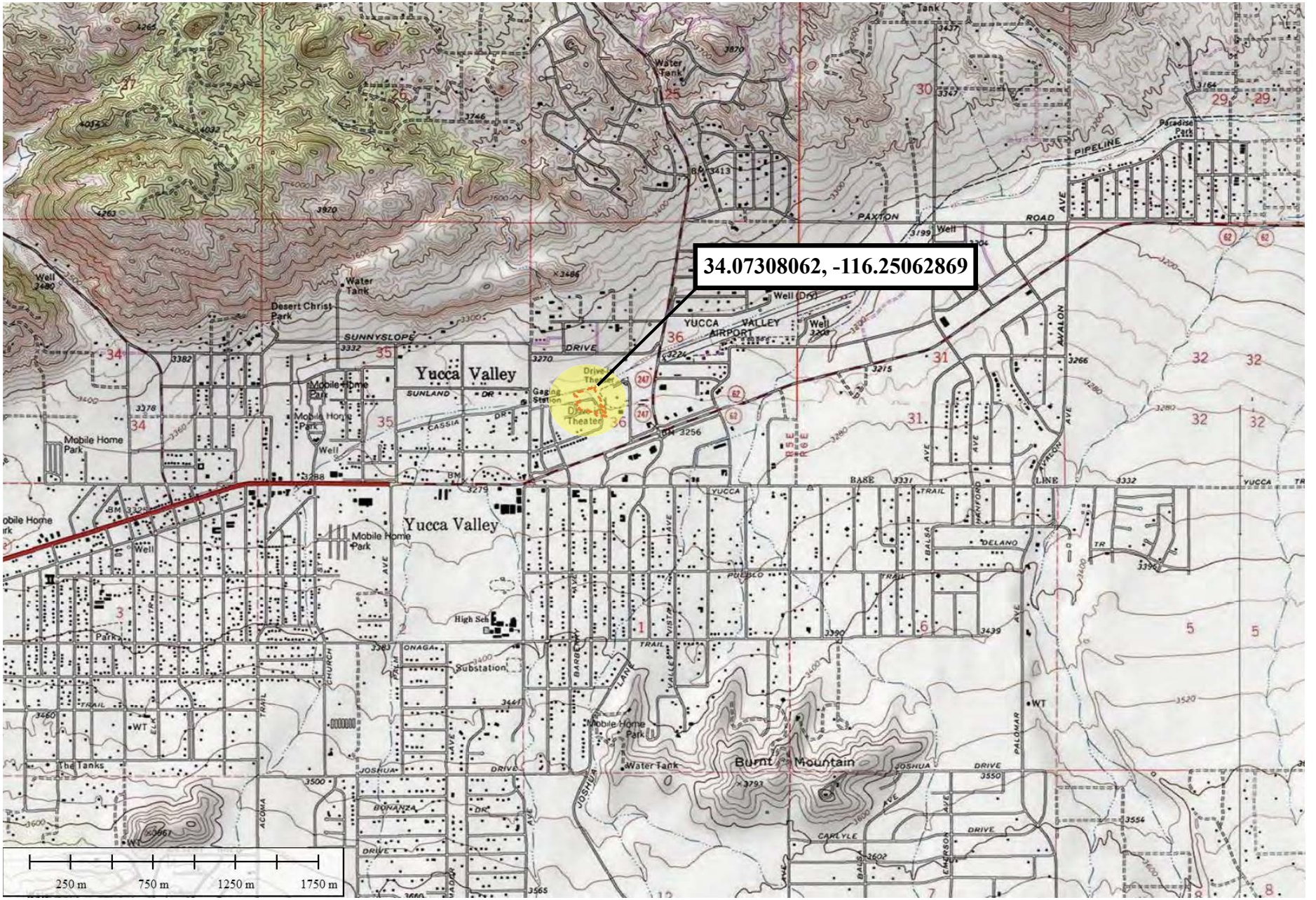

Figure 2

Vicinity Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

Legend

Project Site Boundary

N

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FIGURE 3

Figure 4 - Site Plan

NEW AMENITIES

1 ASPHALT PARKING (24 STD STALLS AND 2 ADA STALLS)
2 TWO FULL BASKETBALL COURTS
3 THIRTEEN STANDARD PICKLEBALL COURTS
4 ONE TOURNAMENT PICKLEBALL COURT
5 SKATE PARK
6 PERIMETER FENCING
7 TABLES WITH STEEL SHADE STRUCTURES
8 BENCHES WITH FABRIC SHADE STRUCTURES
9 BLEACHERS WITH FABRIC SHADE STRUCTURES
10 DRINKING FOUNTAIN AND BOTTLE FILLER
11 ADDITIONAL ASPHALT PARKING (24 STANDARD STALLS)
12 RESTROOM BUILDING
13 BASKETBALL BARRIER FENCE

LEGEND

CONCRETE PAVING
ACCENT CONCRETE PAVERS
ASPHALT PAVING
PLANTER AREA
NEW TREES

Project Boundary

0 75
Scale (Feet)

Source: RHA Architects 2024.

FIGURE 4

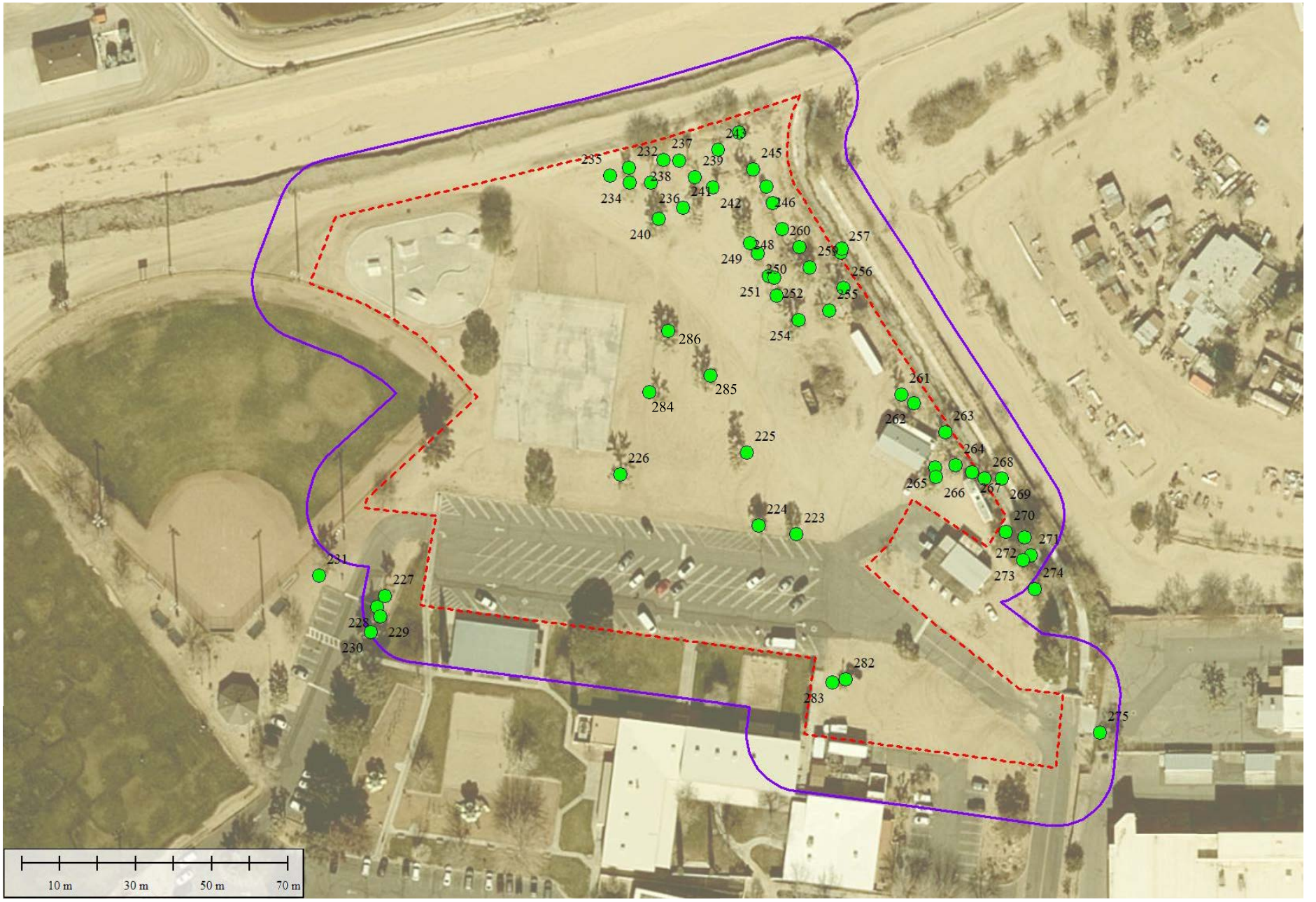


Figure 4

Joshua Tree Location Map
57090 29 Palms Hwy
Yucca Valley, San Bernardino County, California

APPENDIX A

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
223	34° 07' 29.8884" N	116° 25' 05.1240" W	C	5.2	Live	Y	None	Removal	Y	N/A	Old fruit on tree
224	34° 07' 29.9604" N	116° 25' 05.5128" W	C	5.2	Live	Y	None	Removal	Y	N/A	
225	34° 07' 30.5832" N	116° 25' 05.6352" W	C	7.6	Live	Y	None	Removal	Y	N/A	
226	34° 07' 30.3960" N	116° 25' 06.9456" W	C	7.3	Live	Y	None	Removal	Y	N/A	
227A	34° 07' 29.3592" N	116° 25' 09.3612" W	C	7.3	Live	Y	None	TBD	Y	N/A	
227B	34° 07' 29.3592" N	116° 25' 09.3612" W	B	2.4	Live	N	None	TBD	Y	N/A	
228A	34° 07' 29.2692" N	116° 25' 09.4440" W	B	2.4	Live	N	None	TBD	Y	N/A	
228B	34° 07' 29.2692" N	116° 25' 09.4440" W	B	2.4	Dead	Y	None	TBD	Y	N/A	
228C	34° 07' 29.2692" N	116° 25' 09.4440" W	A	0.61	Live	N	None	TBD	Y	N/A	
228D	34° 07' 29.2692" N	116° 25' 09.4440" W	A	0.46	Live	N	None	TBD	Y	N/A	
228E	34° 07' 29.2692" N	116° 25' 09.4440" W	A	0.76	Live	N	None	TBD	Y	N/A	
228F	34° 07' 29.2692" N	116° 25' 09.4440" W	B	4.5	Live	Y	None	TBD	Y	N/A	
228G	34° 07' 29.2692" N	116° 25' 09.4440" W	B	1.4	Live	N	None	TBD	Y	N/A	
228H	34° 07' 29.2692" N	116° 25' 09.4440" W	B	1.4	Live	N	None	TBD	Y	N/A	
228I	34° 07' 29.2692" N	116° 25' 09.4440" W	B	3.6	Live	Y	None	TBD	Y	N/A	
228J	34° 07' 29.2692" N	116° 25' 09.4440" W	B	1.8	Live	Y	None	TBD	Y	N/A	
228K	34° 07' 29.2692" N	116° 25' 09.4440" W	A	0.24	Live	N	None	TBD	Y	N/A	
229	34° 07' 29.1864" N	116° 25' 09.4116" W	C	9.1	Live	Y	None	TBD	Y	N/A	
230	34° 07' 29.0532" N	116° 25' 09.5052" W	C	8.8	Live	Y	None	TBD	Y	N/A	
231	34° 07' 29.5356" N	116° 25' 10.0380" W	C	7.6	Live	Y	None	TBD	N	N/A	
232	34° 07' 33.0096" N	116° 25' 06.8520" W	C	5.8	Live	Y	None	Removal	Y	N/A	
234	34° 07' 32.8800" N	116° 25' 06.8412" W	C	5.8	Live	Y	None	Removal	Y	N/A	
236	34° 07' 32.8800" N	116° 25' 06.6252" W	C	5.2	Live	Y	None	Removal	Y	N/A	
237	34° 07' 33.0708" N	116° 25' 06.4992" W	B	3.3	Live	Y	None	Removal	Y	N/A	
238	34° 07' 33.0636" N	116° 25' 06.3372" W	C	5.2	Live	Y	None	Removal	Y	N/A	

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
239	34° 07' 32.9268" N	116° 25' 06.1752" W	B	3.6	Live	Y	None	Removal	Y	N/A	
240	34° 07' 32.5704" N	116° 25' 06.5460" W	C	7.6	Live	Y	None	Removal	Y	N/A	
241	34° 07' 32.6676" N	116° 25' 06.2976" W	C	7.6	Live	Y	None	Removal	Y	N/A	
242	34° 07' 32.8404" N	116° 25' 05.9880" W	B	3	Dead	Y	None	Removal	Y	N/A	
243	34° 07' 33.1608" N	116° 25' 05.9340" W	B	4.7	Dead	Y	None	Removal	Y	N/A	
244	34° 07' 33.3048" N	116° 25' 05.7180" W	B	4.6	Live	Y	None	Removal	Y	N/A	
245A	34° 07' 32.9952" N	116° 25' 05.5740" W	C	6	Live	Y	None	Removal	Y	N/A	3 off-shoots
245B	34° 07' 32.9952" N	116° 25' 05.5740" W	B	1.5	Live	N	None	Removal	Y	N/A	
245C	34° 07' 32.9952" N	116° 25' 05.5740" W	B	2.4	Live	Y	None	Removal	Y	N/A	
246	34° 07' 32.8440" N	116° 25' 05.4336" W	B	4.9	Live	Y	None	Removal	Y	N/A	
247	34° 07' 32.7072" N	116° 25' 05.3652" W	B	3	Live	Y	None	Removal	Y	N/A	
248	34° 07' 32.4840" N	116° 25' 05.2752" W	C	6.7	Dead	Y	None	Removal	Y	N/A	
249	34° 07' 32.3652" N	116° 25' 05.5992" W	B	1.8	Live	Y	None	Removal	Y	N/A	
250A	34° 07' 32.2824" N	116° 25' 05.5236" W	A	0.61	Live	N	None	Removal	Y	N/A	
250B	34° 07' 32.2824" N	116° 25' 05.5236" W	B	3	Live	Y	None	Removal	Y	N/A	
251A	34° 07' 32.0844" N	116° 25' 05.4120" W	B	1.2	Live	N	None	Removal	Y	N/A	
251B	34° 07' 32.0844" N	116° 25' 05.4120" W	B	3.3	Live	Y	None	Removal	Y	N/A	
252	34° 07' 32.0736" N	116° 25' 05.3544" W	B	4.6	Live	Y	None	Removal	Y	N/A	
253	34° 07' 31.9188" N	116° 25' 05.3328" W	B	4.6	Live	Y	Fruiting	Removal	Y	N/A	
254A	34° 07' 31.7136" N	116° 25' 05.1060" W	A	0.3	Live	N	None	Removal	Y	N/A	
254B	34° 07' 31.7136" N	116° 25' 05.1060" W	C	7.9	Live	Y	None	Removal	Y	N/A	
255A	34° 07' 31.7892" N	116° 25' 04.7856" W	C	9.1	Live	Y	Fruiting	Removal	Y	N/A	
255B	34° 07' 31.7892" N	116° 25' 04.7856" W	A	0.6	Live	N	None	Removal	Y	N/A	
256	34° 07' 31.9872" N	116° 25' 04.6416" W	C	7.6	Live	Y	None	Removal	Y	N/A	
257A	34° 07' 32.2860" N	116° 25' 04.6704" W	B	1.2	Live	Y	None	TBD	Y	N/A	

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
257B	34° 07' 32.2860" N	116° 25' 04.6704" W	A	0.6	Live	N	None	TBD	Y	N/A	
257C	34° 07' 32.2860" N	116° 25' 04.6704" W	B	3	Live	Y	None	TBD	Y	N/A	
257D	34° 07' 32.2860" N	116° 25' 04.6704" W	B	1.2	Dead	N	None	TBD	Y	N/A	
257E	34° 07' 32.2860" N	116° 25' 04.6704" W	A	0.2	Live	N	None	TBD	Y	N/A	
257F	34° 07' 32.2860" N	116° 25' 04.6704" W	A	0.76	Live	N	None	TBD	Y	N/A	
257G	34° 07' 32.2860" N	116° 25' 04.6704" W	B	1.7	Dead	N	None	TBD	Y	N/A	
257H	34° 07' 32.2860" N	116° 25' 04.6704" W	B	2.3	Live	Y	None	TBD	Y	N/A	
257I	34° 07' 32.2860" N	116° 25' 04.6704" W	B	4.9	Live	Y	None	TBD	Y	N/A	
258	34° 07' 32.3220" N	116° 25' 04.6560" W	A	0.3	Live	N	None	TBD	Y	N/A	
259	34° 07' 32.1600" N	116° 25' 04.9872" W	C	7.6	Live	Y	Fruiting	Removal	Y	N/A	
260	34° 07' 32.3292" N	116° 25' 05.0916" W	B	3	Live	Y	None	Removal	Y	N/A	
261	34° 07' 31.0800" N	116° 25' 04.0440" W	C	6.4	Live	Y	None	Removal	Y	N/A	
262	34° 07' 31.0008" N	116° 25' 03.9144" W	B	4.6	Live	Y	None	Removal	Y	N/A	
263	34° 07' 30.7596" N	116° 25' 03.5940" W	C	7.9	Live	Y	None	Removal	Y	N/A	
264A	34° 07' 30.4788" N	116° 25' 03.4932" W	C	5.2	Live	Y	None	Removal	Y	N/A	
264B	34° 07' 30.4788" N	116° 25' 03.4932" W	B	1.2	Live	N	None	Removal	Y	N/A	
264C	34° 07' 30.4788" N	116° 25' 03.4932" W	B	1.1	Live	N	None	Removal	Y	N/A	
264D	34° 07' 30.4788" N	116° 25' 03.4932" W	B	2.3	Dead	N	None	Removal	Y	N/A	
264E	34° 07' 30.4788" N	116° 25' 03.4932" W	B	1.5	Live	N	None	Removal	Y	N/A	
264F	34° 07' 30.4788" N	116° 25' 03.4932" W	A	0.9	Live	N	None	Removal	Y	N/A	
265	34° 07' 30.4572" N	116° 25' 03.7020" W	C	7.6	Live	Y	None	Removal	Y	N/A	
266	34° 07' 30.3744" N	116° 25' 03.6948" W	C	6	Live	Y	None	Removal	Y	N/A	
267	34° 07' 30.4176" N	116° 25' 03.3240" W	C	6.4	Live	Y	None	Removal	Y	N/A	
268	34° 07' 30.3600" N	116° 25' 03.1908" W	C	6	Live	Y	None	TBD	Y	N/A	
269A	34° 07' 30.3600" N	116° 25' 03.0180" W	B	4.6	Live	Y	None	TBD	Y	N/A	

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
269B	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.5	Live	N	None	TBD	Y	N/A	
269C	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.4	Live	N	None	TBD	Y	N/A	
269D	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.5	Live	N	None	TBD	Y	N/A	
269E	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.2	Live	N	None	TBD	Y	N/A	
269F	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.2	Live	N	None	TBD	Y	N/A	
269G	34° 07' 30.3600" N	116° 25' 03.0180" W	B	1.1	Live	N	None	TBD	Y	N/A	
269H	34° 07' 30.3600" N	116° 25' 03.0180" W	A	0.8	Live	N	None	TBD	Y	N/A	
269I	34° 07' 30.3600" N	116° 25' 03.0180" W	C	6.1	Dead	Y	None	TBD	Y	N/A	
270	34° 07' 29.9064" N	116° 25' 02.9748" W	C	7.6	Live	Y	None	TBD	Y	N/A	
271A	34° 07' 29.7084" N	116° 25' 02.7156" W	B	1.1	Live	N	None	TBD	Y	N/A	
271B	34° 07' 29.7084" N	116° 25' 02.7156" W	B	1.8	Live	N	None	TBD	Y	N/A	
271C	34° 07' 29.7084" N	116° 25' 02.7156" W	A	0.3	Live	N	None	TBD	Y	N/A	
271D	34° 07' 29.7084" N	116° 25' 02.7156" W	B	4.6	Live	Y	None	TBD	Y	N/A	
271E	34° 07' 29.7084" N	116° 25' 02.7156" W	A	0.6	Live	N	None	TBD	Y	N/A	
271F	34° 07' 29.7084" N	116° 25' 02.7156" W	A	0.6	Live	N	None	TBD	Y	N/A	
272	34° 07' 29.8632" N	116° 25' 02.7768" W	A	0.2	Live	N	None	TBD	Y	N/A	
273	34° 07' 29.6688" N	116° 25' 02.7948" W	A	0.2	Live	N	None	TBD	Y	N/A	
274A	34° 07' 29.4240" N	116° 25' 02.6760" W	A	0.2	Live	N	None	TBD	N	N/A	
274B	34° 07' 29.4240" N	116° 25' 02.6760" W	C	7	Live	Y	None	TBD	N	N/A	
275	34° 07' 28.2036" N	116° 25' 02.0028" W	C	7.6	Live	Y	None	TBD	Y	N/A	
277A	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.3	Live	N	None	TBD	Y	N/A	
277B	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.3	Live	N	None	TBD	Y	N/A	
277C	34° 07' 27.6564" N	116° 25' 03.9144" W	B	1.2	Live	N	None	TBD	Y	N/A	
277D	34° 07' 27.6564" N	116° 25' 03.9144" W	B	2.7	Live	N	None	TBD	Y	N/A	
277E	34° 07' 27.6564" N	116° 25' 03.9144" W	B	1.8	Live	N	None	TBD	Y	N/A	

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
277F	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.3	Live	N	None	TBD	Y	N/A	
277G	34° 07' 27.6564" N	116° 25' 03.9144" W	B	1.8	Live	N	None	TBD	Y	N/A	
277H	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.6	Live	N	None	TBD	Y	N/A	
277I	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.76	Live	N	None	TBD	Y	N/A	
277J	34° 07' 27.6564" N	116° 25' 03.9144" W	A	0.2	Live	N	None	TBD	Y	N/A	
278A	34° 07' 27.6024" N	116° 25' 03.9684" W	A	0.3	Live	N	None	TBD	Y	N/A	
278B	34° 07' 27.6024" N	116° 25' 03.9684" W	A	0.2	Live	N	None	TBD	Y	N/A	
279	34° 07' 27.6564" N	116° 25' 04.0008" W	A	0.76	Live	N	None	TBD	Y	N/A	
280	34° 07' 27.5664" N	116° 25' 04.0044" W	C	7.6	Live	Y	None	TBD	N	N/A	
281	34° 07' 27.6492" N	116° 25' 04.0224" W	C	7.9	Live	Y	None	TBD	Y	N/A	
282A	34° 07' 28.6536" N	116° 25' 04.6200" W	B	4.6	Live	Y	None	Removal	Y	N/A	
282B	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.46	Live	N	None	Removal	Y	N/A	
282C	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.46	Live	N	None	Removal	Y	N/A	
282D	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.46	Live	N	None	Removal	Y	N/A	
282E	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.76	Live	N	None	Removal	Y	N/A	
282F	34° 07' 28.6536" N	116° 25' 04.6200" W	B	1.4	Live	N	None	Removal	Y	N/A	
282G	34° 07' 28.6536" N	116° 25' 04.6200" W	B	1.8	Live	N	None	Removal	Y	N/A	
282H	34° 07' 28.6536" N	116° 25' 04.6200" W	B	2.3	Live	N	None	Removal	Y	N/A	
282I	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.3	Live	N	None	Removal	Y	N/A	
282J	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.3	Live	N	None	Removal	Y	N/A	
282K	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.3	Live	N	None	Removal	Y	N/A	
282L	34° 07' 28.6536" N	116° 25' 04.6200" W	A	0.2	Live	N	None	Removal	Y	N/A	
282M	34° 07' 28.6536" N	116° 25' 04.6200" W	B	3	Live	N	None	Removal	Y	N/A	
282N	34° 07' 28.6536" N	116° 25' 04.6200" W	B	1.2	Live	N	None	Removal	Y	N/A	
282O	34° 07' 28.6536" N	116° 25' 04.6200" W	B	1.4	Live	N	None	Removal	Y	N/A	

Western Joshua Tree Census Table											
Tree ID	Tree Latitude	Tree Longitude	Size Class	Actual Height of Tree (meters)	Live or Dead?	Mature Tree (branched)?	Flowering or Fruiting Stage? (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other, or none)	Will project activities be within 15 meters of tree?	Relocation Site	Additional Notes
282P	34° 07' 28.6536" N	116° 25' 04.6200" W	B	1.4	Live	N	None	Removal	Y	N/A	
282Q	34° 07' 28.6536" N	116° 25' 04.6200" W	B	4.6	Live	Y	None	Removal	Y	N/A	
282R	34° 07' 28.6536" N	116° 25' 04.6200" W	B	2.4	Live	Y	None	Removal	Y	N/A	
283	34° 07' 28.6248" N	116° 25' 04.7568" W	A	0.46	Live	N	None	Removal	Y	N/A	
284A	34° 07' 31.0944" N	116° 25' 06.6432" W	B	1.67	Live	N	None	Removal	Y	N/A	
284B	34° 07' 31.0944" N	116° 25' 06.6432" W	B	1.2	Live	N	None	Removal	Y	N/A	
284C	34° 07' 31.0944" N	116° 25' 06.6432" W	A	0.46	Live	N	None	Removal	Y	N/A	
284D	34° 07' 31.0944" N	116° 25' 06.6432" W	B	1.3	Live	N	None	Removal	Y	N/A	
284E	34° 07' 31.0944" N	116° 25' 06.6432" W	B	1.4	Live	N	None	Removal	Y	N/A	
284F	34° 07' 31.0944" N	116° 25' 06.6432" W	B	1.4	Live	N	None	Removal	Y	N/A	
284G	34° 07' 31.0944" N	116° 25' 06.6432" W	C	5.2	Live	Y	None	Removal	Y	N/A	
285	34° 07' 31.2348" N	116° 25' 06.0132" W	C	5.5	Live	Y	None	Removal	Y	N/A	
286	34° 07' 31.6164" N	116° 25' 06.4524" W	C	5.5	Live	Y	None	Removal	Y	N/A	

APPENDIX B

Hernandez Environmental Services

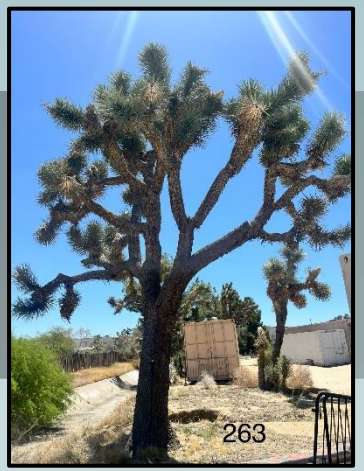
Hernandez Environmental Services

Hernandez Environmental Services

Hernandez Environmental Services

Hernandez Environmental Services

Hernandez Environmental Services



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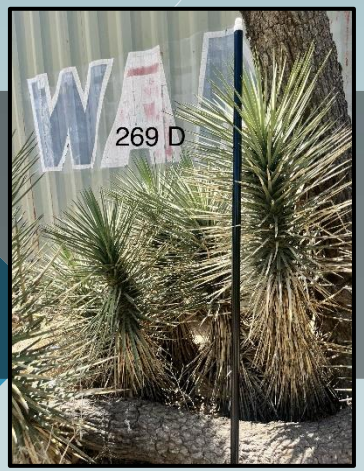

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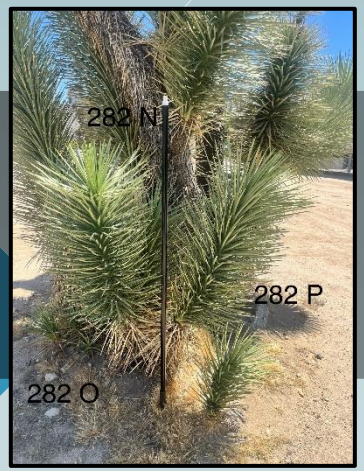

Hernandez Environmental Services

Hernandez Environmental Services

Appendix C Fundamentals of Noise

Appendix

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00

PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

9.34.080: NOISE:
This section establishes standards concerning acceptable noise levels for both noise sensitive land uses and for noise generating land uses.

A. Noise Measurement: Noise shall be measured:

1. At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise sensitive land uses;

2. With a sound level meter that meets the standards of the American National Standards Institute (ANSI section SI4 1979, type 1 or type 2);

3. Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micro newtons per meter squared). The unit of measure shall be designated as dB(A).

B. Noise Impacted Areas: Areas within the town shall be designated as noise impacted if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in subsections C1, "Noise Standards For Stationary Noise Sources", and C3, "Noise Standards For Adjacent Mobile Noise Sources", of this section. New development of residential or other noise sensitive land uses shall not be allowed in noise impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

C. Noise Standards: The following legend is for use with all tables in this section:

Leq	=	Equivalent energy level. The sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period, typically 1, 8 or 24 hours.
dB(A)	=	A-weighted sound pressure level. The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.
Ldn	=	Day-night noise level. The average equivalent A-weighted sound level during a 24 hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10:00 P.M. to 7:00 A.M.). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.
CNEL	=	Community noise equivalent level. The average equivalent A-weighted sound level during a 24 hour day, obtained after addition of approximately 5 decibels to sound levels in the evening from 7:00 P.M. to 10:00 A.M. and 10 decibels to sound levels in the night before 7:00 A.M. and after 10:00 P.M.

1. Noise Standards For Stationary Noise Sources: Table 3-15, "Noise Standards For Stationary Noise Sources", of this section describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

TABLE 3-15

NOISE STANDARDS FOR STATIONARY NOISE SOURCES

Affected Land Uses	7:00 A.M. To 10:00 P.M. Leq	10:00 P.M. To 7:00 A.M. Leq
Residential	55 dB(A)	45 dB(A)
Professional services	55 dB(A)	55 dB(A)

Other commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

2. Noise Limit Categories: No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

a. The noise standard for the receiving land use as specified in subsection B, "Noise Impacted Areas", of this section, for a cumulative period of more than thirty (30) minutes in any hour.

b. The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour.

c. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour.

d. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour.

e. The noise standard plus twenty (20) dB(A) for any period of time.

3. Noise Standards For Adjacent Mobile Noise Sources: Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in table 3-16, "Noise Standards For Adjacent Mobile Noise Sources", of this section.

TABLE 3-16

NOISE STANDARDS FOR ADJACENT MOBILE NOISE SOURCES

Categories	**Uses**	**Ldn (Or CNEL) dB(A)**	
		Interior[1]	Exterior[2,3]
Categories	**Uses**	**Ldn (Or CNEL) dB(A)**	
		Interior[1]	Exterior[2,3]
Residential	Single-family, multi-family, duplex, mobilehomes	45	60
Commercial	Amphitheater, concert hall, auditorium, movie theater	45	n/a
	Commercial retail, bank, restaurant	50	n/a
	Hotel, motel, transient housing	45	60
	Office building, research and development, professional offices	45	65
Institutional/public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open space	Park	n/a	65

Notes:

1. The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

2. The outdoor environment shall be limited to:

Hospital/office building patios

Hotel and motel recreation areas

Mobilehome parks

Multi-family private patios or balconies

Park picnic areas

Private yard of single-family dwellings

School playgrounds

3. An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

D. Increases In Allowable Noise Levels: If the measured ambient level exceeds any of the first four (4) noise limit categories in subsection C2 of this section, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in subsection C2 of this section, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

E. Reductions In Allowable Noise Levels: If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in table 3-15, "Noise Standards For Stationary Noise Sources", of this section shall be reduced by five (5) dB(A).

F. Exempt Noise: The following sources of noise shall be exempt from the regulations of this section:

1. Motor vehicles not under the control of the commercial or industrial use.

2. Emergency equipment, vehicles, and devices.

3. Temporary construction, maintenance, repair, or demolition activities between seven o'clock (7:00) A.M. and ten o'clock (10:00) P.M., except Sundays and federal holidays.

G. Noise Standards For Other Structures: All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria shown in table 3-17, "Noise Standards For Other Structures", of this section.

TABLE 3-17

NOISE STANDARDS FOR OTHER STRUCTURES

Typical Uses	12 Hour Equivalent Sound Level (Interior) In dB(A) Ldn
Educational, institutions, libraries, meeting facilities, and similar	45[1]
General office, reception, and similar	50[1]
Retail stores, restaurants, and similar	55[1]
Other areas for manufacturing, assembly, testing, warehousing, and similar	65[1]

Note:

1. In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24 hour period shall not exceed 65 dB(A) interior.

(Ord. 254, 12-16-2014)

9.34.090: VIBRATION:

A. Vibration Standard: No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to 0.2 inch per second measured at or beyond the lot line.

B. Vibration Measurement: Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.

C. Exempt Vibrations: The following sources of vibration shall be exempt from the regulations of this section:

Motor vehicles not under the control of the subject use.

Temporary construction maintenance or demolition activities between seven o'clock (7:00) A.M. and ten o'clock (10:00) P.M. (Ord. 254, 12-16-2014)

Measurement Report

Report Summary

Meter's File Name	LxT_Data.052.s	Computer's File Name	LxT_0005426-20240523 145713-LxT_Data.052.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LZ	Location	Town of Yucca Valley
Job Description	TYV-08.0		
Note	ST-1		

Start Time	2024-05-23 14:57:13	Duration	0:15:00.3		
End Time	2024-05-23 15:12:14	Run Time	0:15:00.3	Pause Time	0:00:00.0
Pre-Calibration	2024-05-23 14:04:01	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	50.1 dB		
LAE	79.6 dB	SEA	--- dB
EA	10.2 µPa²h		
EA8	327.5 µPa²h		
EA40	1.6 mPa²h		
LZS_{peak}	107.4 dB	2024-05-23 14:59:57	
LAS_{max}	64.5 dB	2024-05-23 14:58:18	
LAS_{min}	43.3 dB	2024-05-23 15:07:59	
LA_{eq}	50.1 dB		
LC_{eq}	67.9 dB	LC_{eq} - LA_{eq}	17.8 dB
LAI_{eq}	52.4 dB	LAI_{eq} - LA_{eq}	2.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}
--- dB	--- dB	0.0 dB

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	50.1 dB		--- dB		--- dB	
$L_{S(max)}$	64.5 dB	2024-05-23 14:58:18	--- dB	None	--- dB	None
$L_{S(min)}$	43.3 dB	2024-05-23 15:07:59	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	107.4 dB	2024-05-23 14:59:57

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	56.4 dB
LAS 8.0	52.3 dB
LAS 25.0	50.1 dB
LAS 50.0	48.5 dB
LAS 90.0	45.9 dB
LAS 99.0	44.3 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.050.s	Computer's File Name	LxT_0005426-20240523 141104-LxT_Data.050.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LZ	Location	Town of Yucca Valley
Job Description	TYV-08.0		
Note	ST-2		

Start Time	2024-05-23 14:11:04	Duration	0:15:00.7		
End Time	2024-05-23 14:26:04	Run Time	0:15:00.7	Pause Time	0:00:00.0
Pre-Calibration	2024-05-23 14:04:01	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	51.5 dB		
LAE	81.0 dB	SEA	--- dB
EA	14.1 µPa²h		
EA8	452.0 µPa²h		
EA40	2.3 mPa²h		
LZS_{peak}	100.5 dB	2024-05-23 14:15:35	
LAS_{max}	66.3 dB	2024-05-23 14:14:58	
LAS_{min}	43.0 dB	2024-05-23 14:12:02	
LA_{eq}	51.5 dB		
LC_{eq}	67.5 dB	LC_{eq} - LA_{eq}	16.0 dB
LAI_{eq}	53.4 dB	LAI_{eq} - LA_{eq}	1.9 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}
--- dB	--- dB	0.0 dB

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	51.5 dB		--- dB		--- dB	
$L_{S(max)}$	66.3 dB	2024-05-23 14:14:58	--- dB	None	--- dB	None
$L_{S(min)}$	43.0 dB	2024-05-23 14:12:02	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	100.5 dB	2024-05-23 14:15:35

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	61.3 dB
LAS 8.0	52.8 dB
LAS 25.0	50.3 dB
LAS 50.0	48.4 dB
LAS 90.0	45.7 dB
LAS 99.0	43.5 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.051.s	Computer's File Name	LxT_0005426-20240523 143247-LxT_Data.051.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LZ	Location	Town of Yucca Valley
Job Description	TYV-08.0		
Note	ST-3		

Start Time	2024-05-23 14:32:47	Duration	0:15:07.2		
End Time	2024-05-23 14:47:54	Run Time	0:15:07.2	Pause Time	0:00:00.0
Pre-Calibration	2024-05-23 14:04:01	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	48.7 dB		
LAE	78.3 dB	SEA	--- dB
EA	7.5 µPa²h		
EA8	237.2 µPa²h		
EA40	1.2 mPa²h		
LZS_{peak}	103.3 dB	2024-05-23 14:32:53	
LAS_{max}	61.6 dB	2024-05-23 14:47:04	
LAS_{min}	44.0 dB	2024-05-23 14:45:14	
LA_{eq}	48.7 dB		
LC_{eq}	64.7 dB	LC_{eq} - LA_{eq}	16.0 dB
LAI_{eq}	51.1 dB	LAI_{eq} - LA_{eq}	2.4 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}
--- dB	--- dB	0.0 dB

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	48.7 dB		--- dB		--- dB	
$L_{S(max)}$	61.6 dB	2024-05-23 14:47:04	--- dB	None	--- dB	None
$L_{S(min)}$	44.0 dB	2024-05-23 14:45:14	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	103.3 dB	2024-05-23 14:32:53

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	56.0 dB
LAS 8.0	51.2 dB
LAS 25.0	48.0 dB
LAS 50.0	46.7 dB
LAS 90.0	45.1 dB
LAS 99.0	44.3 dB

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/22/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/19/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Asphalt Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	85.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/22/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/19/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/22/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	81.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/19/2024
Case Description: TYV-08.0 Yucca Valley Community Center - Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	85.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TYV-08.0 - Construction Noise Modeling Attenuation Calculations

		Levels in dBA Leq		
Phase	**RCNM Reference Noise Level**	**Residential receptors to West along Barberry Avenue**	**Residential receptors to South along Antelope Trail**	**Community Center to South**
Distance in feet	*50*	*645*	*625*	*280*
Demolition	85	63	63	70
Site Prep	85	63	63	70
Grading	85	63	63	70
Distance in feet	*50*	*500*	*525*	*280*
Building Construction	80	60	60	65
Architectural Coating	74	54	54	59
Distance in feet	*50*	*470*	*460*	*250*
Paving	80	61	61	66

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

PVSD-01.0 - Vibration Damage Attenuation Calculations				
		Levels, PPV (in/sec)		
Distance in feet	**Vibration Reference Level at *25 feet***	**Residential receptors to West along Barberry Avenue** *470*	**Residential receptors to South along Antelope Trail** *460*	**Community Center Receptor to the South** *215*
Vibratory Roller	0.21	0.003	0.003	0.008
Large Bulldozer	0.089	0.001	0.001	0.004
Loaded Trucks	0.076	0.001	0.001	0.003
Small Bulldozer	0.003	0.000	0.000	0.000

Traffic Noise Calculator: FHWA 77-108 **Yucca Valley Community Center (TYV-08.0) Existing Traffic Noise Conditions**

	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour				Segment															
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	49.2	52.0	52.7	3	8	16	Antelope Trail	West of Park Driveway	Barberry Avenue	875	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	50.6	53.4	54.1	4	9	20	Antelope Trail	Park Driveway	Dumosa Lane	1,210	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	46.1	48.9	49.6	2	5	10	Antelope Trail	Park Driveway	Dumosa Lane	435	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
4	51.4	54.2	54.9	5	11	23	Dumosa Lane	Antelope Trail	29 Palms Highway	1,456	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	39.8	42.5	43.2	1	2	4	Park Driveway	Antelope Trail	North of Site	911	5	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20

Traffic Noise Calculator: FHWA 77-108 **Barstow General Plan Update EIR (BRS-3.0) Cumulative No Project Traffic Noise**

	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour				Segment															
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	49.7	52.5	53.2	4	8	18	Antelope Trail	West of Park Driveway	Barberry Avenue	991	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
2	51.1	53.9	54.6	5	10	22	Antelope Trail	Park Driveway	Dumosa Lane	1,360	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
3	49.6	52.4	53.0	4	8	17	Antelope Trail	Park Driveway	Dumosa Lane	957	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
4	52.5	55.3	56.0	6	13	27	Dumosa Lane	Antelope Trail	29 Palms Highway	1,890	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20
5	40.0	42.8	43.5	1	2	4	Park Driveway	Antelope Trail	North of Site	969	5	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20

Appendix D Yucca Valley Community Athletic Facility Vehicle Miles Traveled Screening Assessment

Appendix

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FEHR PEERS

Memorandum

Date: July 11, 2024

To: Nicole Vermillion, Placeworks
Marianna Zimmermann, Placeworks

From: Paul Herrmann, T.E.
Brian Wolfe

Subject: Yucca Valley Community Athletic Facility VMT Screening Assessment

OC24-1060

Fehr & Peers completed a transportation assessment for the proposed park redevelopment Project located in Yucca Valley, California. This memorandum discusses the potential for screening the project from Vehicle Miles Traveled (VMT) assessment based on the project's local-serving nature and presumption that it will result in a less-than-significant transportation impact.

Project Description

The proposed Project is a redevelopment of a portion of existing park facilities at the Yucca Valley Community Center in Yucca Valley, California. Currently, the site contains an approximately 10,000 square foot outdoor skate park and two full size outdoor basketball courts. The project replaces the existing skate park and basketball court facilities and adds 16 new outdoor pickleball courts for public recreation use. Associated amenities including seating areas, public restrooms, and shade canopies are also proposed. Space is reserved for an additional two pickleball courts, which may be developed at a later date.

26 new parking spaces are proposed for the first phase of the project, with an additional 24 parking spaces proposed as part of a future phase. Site access is provided from Dumosa Avenue and Antelope Trail.

Figure 1 shows the proposed site plan.

Figure 1

Yucca Valley Community Athletic Facility
Proposed Site Plan

The basketball court and skate park components of the Project replace existing facilities with facilities of similar scale. The proposed pickleball programming at the Project Site will replace existing pickleball programming at the Jacobs Park site in Western Yucca Valley. Most programming is intended to be utilized by Yucca Valley and Morongo Basin residents, with regularly scheduled ladder leagues, clinics, and public drop-in use throughout the week. The existing monthly pickleball tournaments held at the Jacobs Park site will be relocated to this facility and are expected to be held twice a month. **Table 1** lists the current and proposed athletic programming in the Town.

Table 1: Current and Proposed Athletic Programming

Activity	Existing		Proposed	
	Frequency	Average Daily Attendance	Frequency	Average Daily Attendance
Recreational Uses				
Skate Park (Public Use)	Daily	12	Daily	15
Basketball Courts (Public Use)	Daily	12	Daily	12
Pickleball				
Ladder Leagues	Once Weekly	26	Twice Weekly	31
Clinics	Once Weekly	37	Twice Weekly	44
General Drop-In Use	Daily	20	Daily	24
Tournaments	Once Monthly	31	Twice Monthly	37

Note: Existing pickleball programming held at Jacobs Park in Western Yucca Valley.
Source: Town of Yucca Valley, 2024.

Analysis Methodology

Consistent with SB 743, the Office of Planning and Research (OPR) *Technical Advisory*, Yucca Valley's adopted VMT significance thresholds, and SBCTA's *Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment, 2020*, the Town can screen projects from project-level VMT assessment under the presumption that the project will result in a less-than-significant transportation impact. Typically, this presumption exists for small projects, local serving projects, projects located in VMT-efficient areas, and projects located in transit priority areas (TPAs).

VMT Screening Assessment

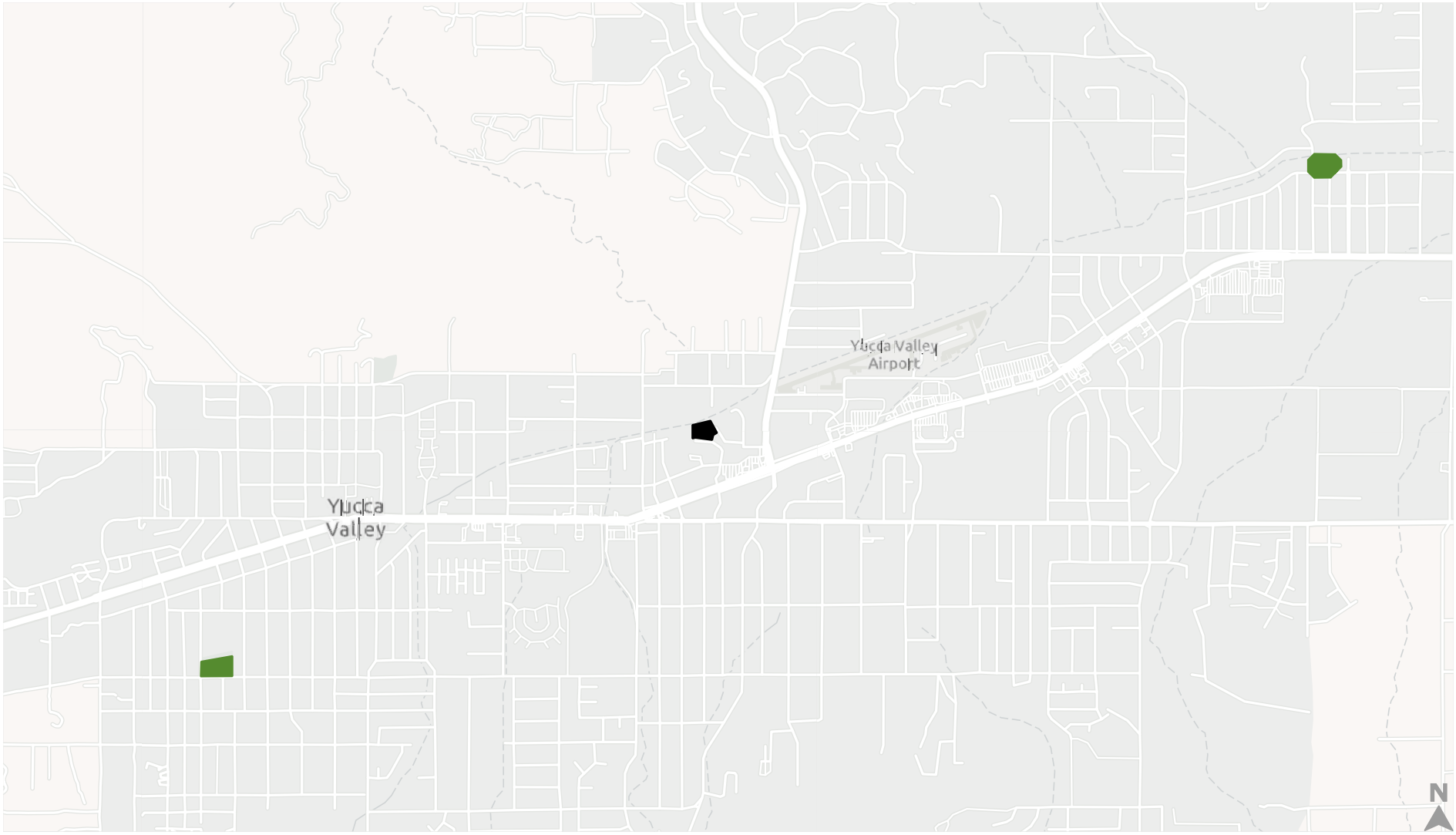
Local-serving project uses, such as local parks, are assumed to serve the local community and are not anticipated to contribute to regional VMT growth. Morongo Basin residents are currently the primary users of existing recreational facilities in the region including the Community Athletic Center and Jacobs Park pickleball courts. Proposed programming at the new pickleball courts is expected to consist of local ladder leagues, clinics, and open play. These programs are expected to be utilized primarily by Morongo Basin residents, with fewer than five percent of attendees residing outside the Morongo Basin.

Pickleball tournaments are proposed to be held twice a month at the Project site, replacing the existing monthly tournaments at Jacobs Park. Attendance information from the Town of Yucca Valley shows that these tournaments are primarily attended by Morongo Basin residents, with 72 percent of existing participants residing in Yucca Valley, Joshua Tree, or other Morongo Basin communities. The proposed tournaments are expected to draw attendees from the same communities, with some new regional trips generated. Existing regional trips will be diverted from the Jacobs Park site to the Project site.

The basketball court and skate park components of the Project replace existing facilities with facilities of similar scale. These uses are not expected to generate substantial new trips and will continue to be used by residents in the Town.

The Project will also provide new pickleball courts to a portion of the town without existing facilities. Currently, the Town of Yucca Valley maintains four pickleball courts at Jacobs Park, located in western Yucca Valley, and one pickleball court at Paradise Park, located in eastern Yucca Valley (see **Figure 2**). The addition of pickleball courts at the Community Athletic Center, located in central Yucca Valley, will provide a more convenient alternative for residents in the immediate Project area.

A geospatial analysis was conducted to understand how many households could potentially be served by the Project site, compared to the two locations with existing pickleball facilities. Households with access to the different sites within a local one- and two-mile radius and a regional ten-mile radius were used to measure accessibility. A summary of the number of households and households per court is provided in **Tables 2 and 3**, respectively**.**



Project Site

Existing Pickleball Facilities

Figure 2

Yucca Valley Pickleball Facilities

Table 2: Household Accessibility

Location	Number of Courts	1-Mile Radius	2-Mile Radius	10-Mile Radius
Community Athletic Center	14	1,129	4,242	13,752
Jacobs Park 55680 Onaga Trail	4	1,467	4,229	12,436
Paradise Park 58938 Barron Dr	1	526	1,860	13,966

Source: San Bernardino County Transportation Analysis Model (SBTAM), 2024.

Table 3: Households per Court

Location	Number of Courts	1-Mile Radius	2-Mile Radius	10-Mile Radius
Community Athletic Center	14	80.6	303.0	982.3
Jacobs Park 55680 Onaga Trail	4	366.8	1,057.3	3,109.0
Paradise Park 58938 Barron Dr	1	526	1,860	13,966

Source: Fehr & Peers, 2024.

Comparing each park's local one- and two-mile radii, the proposed project site has similar access to homes as Jacobs Park, but over two times as many homes as Paradise Park. Since more homes are accessible within the local one- and two-mile radii, the project site would provide shorter trip distances than the Paradise Park site. Regional ten-mile radii household capture zones show similar numbers of households between all three facilities, with at most a ten percent difference, attributed to households in Desert Hot Springs.

Expanding pickleball facilities in the Morongo Basin will also reduce the need to travel to other pickleball facilities in the Coachella Valley. Currently, prominent pickleball facilities in the Coachella Valley are 30+ miles away from the proposed Project site (see **Table 4**). Providing new facilities locally will reduce the need for regional travel.

Table 4: Existing Regional Pickleball Facilities

Facility Name	City	Distance from Project Site
Demuth Park	Palm Springs	33.5 miles
Freedom Park	Palm Desert	43.3 miles

Source: Fehr & Peers, 2024.

CEQA Appendix G Checklist

CEQA Guidelines identify additional considerations that should be evaluated to determine overall Project environmental impact. These considerations are outlined in the *CEQA Appendix G Environmental Checklist Form*. For transportation/traffic, the following are to be considered for this Project:

- Would the project conflict with an applicable plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines Section 15603.3, subdivision (b)?
- Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?
- Would the project result in inadequate emergency access?

Consistency With Plans, Ordinances and Policies

Less than significant impact. The proposed Project is consistent with the land use identified in the General Plan and complies with Town Development Code including minimum parking requirements. The site is served by existing sidewalks and proposed Class I bike facilities. Existing transit service is provided along 29 Palms Highway, with a bus stop located less than 1,200 feet from the Project site.

Consistency with CEQA Guidelines

Less than significant impact. As described above, the Project is assumed to have a less-than-significant impact on VMT as it is a local-serving use and improves access to recreational facilities within the Town.

Geometric Design Hazards

Less than significant impact. The project is served by two existing intersections that meet at near right angles and are controlled by stop signs. No changes to the road network are proposed as part of this project. New parking facilities will be designed in accordance with Town design

standards and will be reviewed by the Town Engineer. 26 feet of drive aisle space is provided in the new parking facility, sufficient for vehicle movement and passenger pick-up/drop-off.

Emergency Access

Less than significant impact. The project design complies with Town design standards and includes 26 feet of drive aisle space that will provide for emergency vehicle access. The final design will be reviewed by the San Bernardino County Sheriff's Department and Yucca Valley Fire Protection District.

Conclusions

The proposed project is anticipated to modernize existing facilities and provide recreational programming to the local community in an area without existing pickleball facilities. Given the local-serving nature of the proposed project, this project should be screened from a VMT assessment under the presumption that it will result in **a less-than-significant transportation impact.**