

**APPENDIX 7**

**ENERGY IMPACT ANALYSIS**



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# **Animal Care Facility (MIL-291)**

## **ENERGY ANALYSIS**

### **COUNTY OF SAN BERNARDINO**

PREPARED BY:

Haseeb Qureshi  
hqureshi@urbanxroads.com

Alyssa Barnett  
abarnett@urbanxroads.com

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15264-04 EA Report



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## **LIST OF ABBREVIATED TERMS**

%	Percent
(1)	Reference
AQIA	<i>Animal Care Facility (MIL-291) Air Quality Impact Analysis</i>
BACM	Best Available Control Measures
BTU	British Thermal Units
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
County	County of San Bernardino
CPEP	Clean Power and Electrification Pathway
CPUC	California Public Utilities Commission
County	County of San Bernardino
DMV	Department of Motor Vehicles
EIA	Energy Information Administration
EPA	Environmental Protection Agency
EMFAC	EMissions FACtor
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse Gas
GWh	Gigawatt Hour
HHDT	Heavy-Heavy Duty Trucks
hp-hr-gal	Horsepower Hours Per Gallon
IEPR	Integrated Energy Policy Report
ISO	Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
kBTU	Thousand-British Thermal Units
kWh	Kilowatt Hour
LDA	Light Duty Auto
LDT1/LDT2	Light-Duty Trucks
LHDT1/LHDT2	Light-Heavy Duty Trucks
MARB/IPA	March Air Reserve Base/Inland Port Airport
MDV	Medium Duty Trucks
MHDT	Medium-Heavy Duty Trucks

MMcfd	Million Cubic Feet Per Day
mpg	Miles Per Gallon
MPO	Metropolitan Planning Organization
PG&E	Pacific Gas and Electric
Project	Animal Care Facility (MIL-291)
PV	Photovoltaic
SCAB	South Coast Air Basin
SCE	Southern California Edison
SDAB	San Diego Air Basin
sf	Square Feet
SoCalGas	Southern California Gas
TEA-21	Transportation Equity Act for the 21 <sup>st</sup> Century
U.S.	United States
VMT	Vehicle Miles Traveled

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## EXECUTIVE SUMMARY

### ES.1 SUMMARY OF FINDINGS

The results of this *Animal Care Facility (MIL-291) Energy Analysis* are summarized below based on the significance criteria in Section 5 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Statute and Guidelines (*CEQA Guidelines*) (1). Table ES-1 shows the findings of significance for potential energy impacts under CEQA.

**TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS**

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Energy Impact #1: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	5.0	<i>Less Than Significant</i>	<i>n/a</i>
Energy Impact #2: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	5.0	<i>Less Than Significant</i>	<i>n/a</i>

### ES.2 PROJECT REQUIREMENTS

The Project would be required to comply with regulations imposed by the federal and state agencies that regulate energy use and consumption through various means and programs. Those that are directly and indirectly applicable to the Project and that would assist in the reduction of energy usage include:

- Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)
- The Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21)
- Integrated Energy Policy Report (IEPR)
- State of California Energy Plan
- California Code Title 24, Part 6, Energy Efficiency Standards
- California Code Title 24, Part 11, California Green Building Standards Code (CALGreen)
- AB 1493 Pavley Regulations and Fuel Efficiency Standards
- California’s Renewable Portfolio Standard (RPS)
- Clean Energy and Pollution Reduction Act of 2015 (SB 350)

Consistency with the above regulations is discussed in detail in section 5 of this report.

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# 1 INTRODUCTION

This report presents the results of the energy analysis prepared by Urban Crossroads, Inc., for the proposed Animal Care Facility (MIL-291) (Project). The purpose of this report is to ensure that energy implication is considered by the County of San Bernardino (Lead Agency), as the lead agency, and to quantify anticipated energy usage associated with construction and operation of the proposed Project, determine if the usage amounts are efficient, typical, or wasteful for the land use type, and to emphasize avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

## 1.1 SITE LOCATION

The Project site is located at 18317 Valley Boulevard in the Bloomington area of unincorporated County of San Bernardino, as shown on Exhibit 1-A.

## 1.2 PROJECT DESCRIPTION

The proposed Project site is approximately 6.0-acres in size. The existing Devore Animal Shelter has currently exceeded its useful life span and is unable to accommodate the growth required due to existing facility deterioration, limited wastewater and sewage capacity, remote location, and other factors. As such, the Project is proposed to enhance services and expand capacity and additional work areas to accommodate the growth of the Animal Care Division.

The Project will include enhanced services, expanded capacity, and additional work areas to accommodate the growth of the Animal Care Division. The new facility will increase animal housing units to allow the County to serve additional municipalities in the Central Valley Region of the County. Program services will be enhanced to include a veterinary clinic; expanded pet adoption areas; animal exercise play yard; increased staffing work areas; volunteer work areas; expanded parking and other provisions to allow the Division to accommodate growth and increased demand for services. The new shelter will consist of a two-story, 14,691 square-foot (sf) administrative office building, seven dog housing/kennel buildings totaling 35,846-sf, a 2,758-sf medical clinic, 8,896-sf support building, 5,830-sf cat and other animal housing building, 5,934-sf medical dog building with a 436-sf euthanasia facility, and 540-sf car wash structure (total of 74,391-sf). The Project is anticipated to have an Opening Year of 2026. The preliminary Project site plan is shown on Exhibit 1-B.

EXHIBIT 1-A: LOCATION MAP

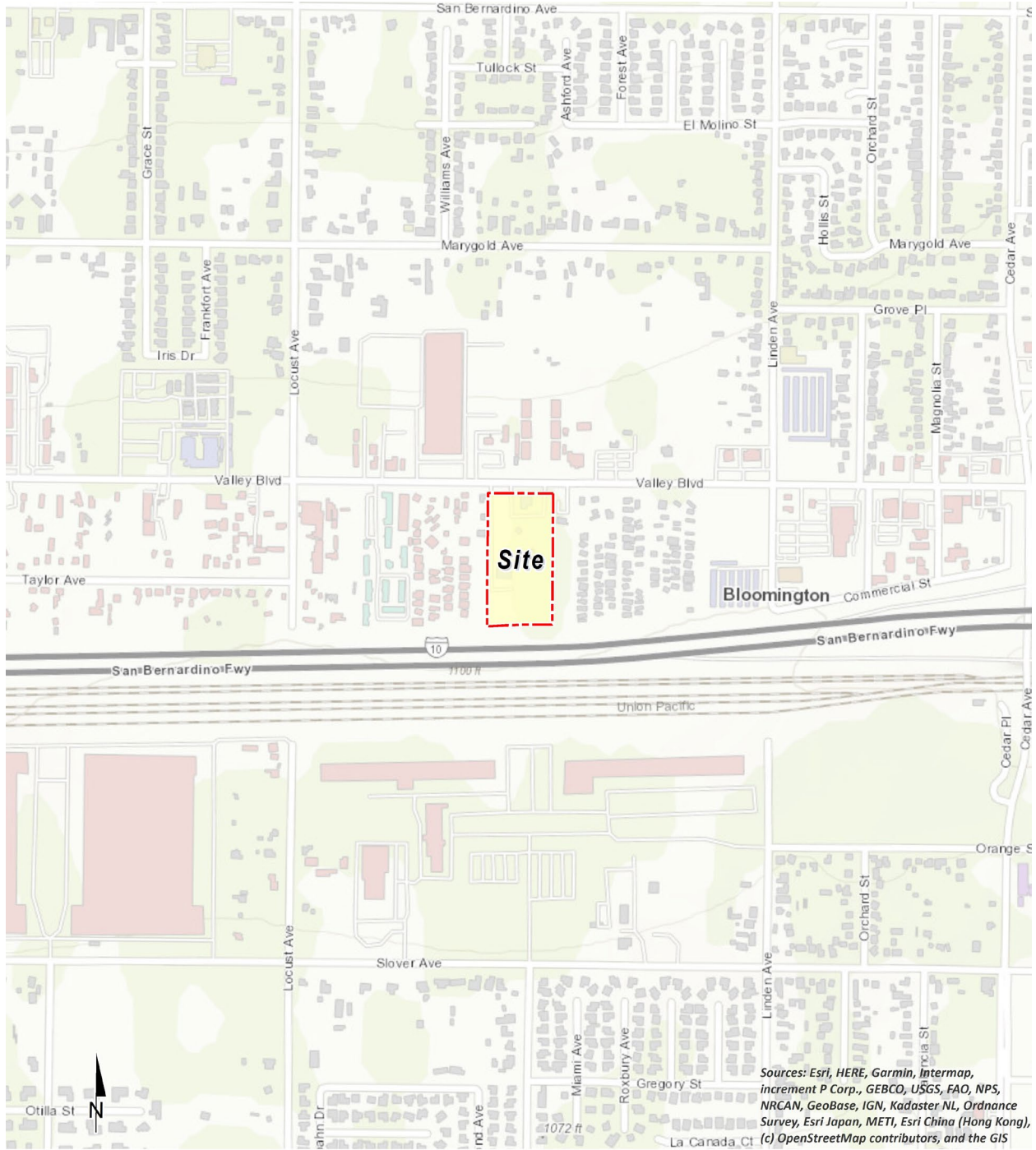
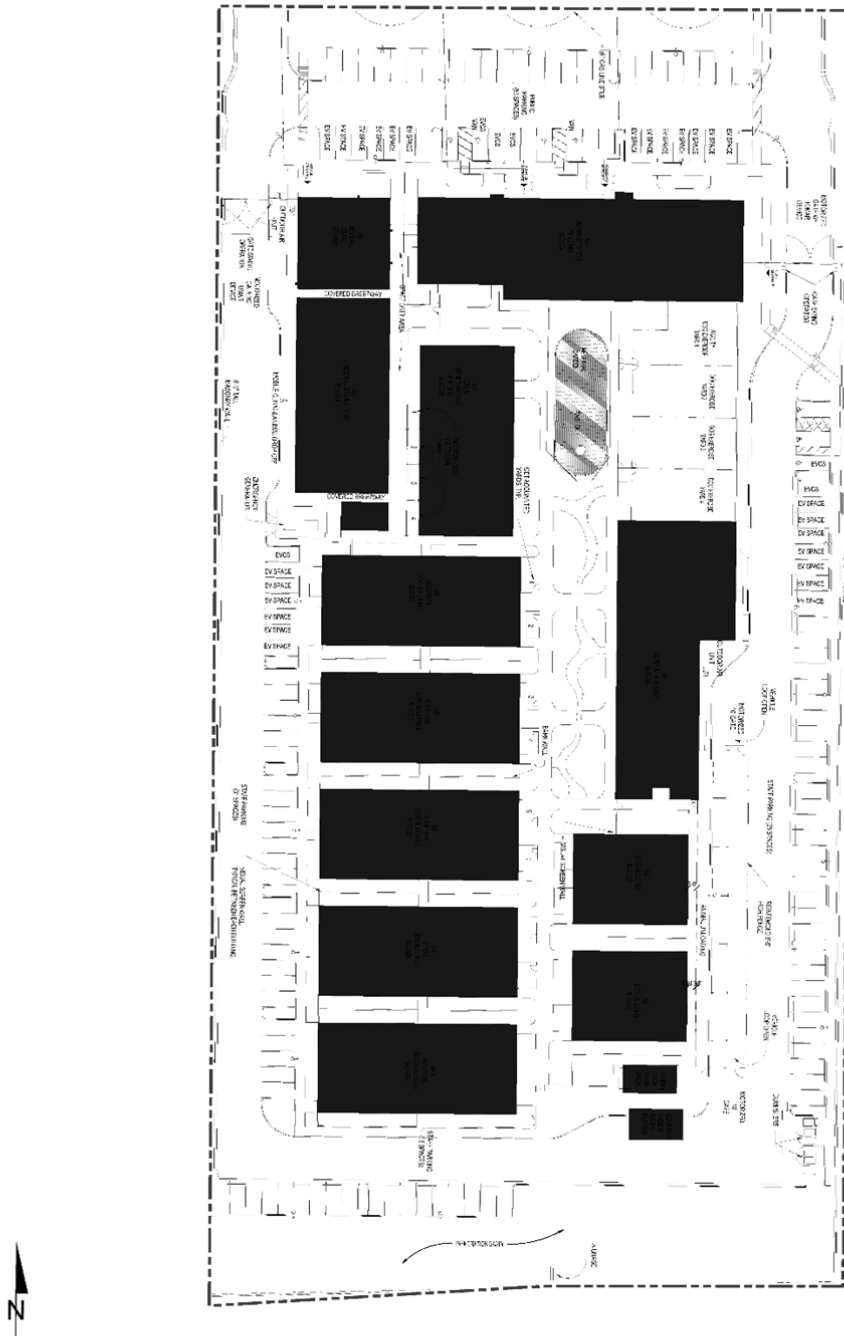


EXHIBIT 1-B: SITE PLAN



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## 2 EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the Project region.

### 2.1 OVERVIEW

The most recent data for California's estimated total energy consumption and natural gas consumption is from 2021 and 2022, released by the United States (U.S.) Energy Information Administration's (EIA) California State Profile and Energy Estimates in 2021 and 2022 and included (2):

- As of 2021, approximately 7,359 trillion British Thermal Unit (BTU) of energy was consumed
- As of 2021, approximately 605 million barrels of petroleum
- As of 2022, approximately 2,059 billion cubic feet of natural gas
- As of 2022, approximately 1,322 thousand short tons of coal

According to the EIA, in 2022 the U.S. petroleum consumption comprised about 90% of all transportation energy use, excluding fuel consumed for aviation and most marine vessels (3). In 2022, about 253,289 million gallons (or about 6.03 million barrels) of finished petroleum products were consumed in the U.S., an average of about 694 million gallons per day (or about 16.5 million barrels per day) (4). In 2021, California consumed approximately 12,157 million gallons in motor gasoline (33.31 million per day) and approximately 3,541 million gallons of diesel fuel (9.7 million per day) (6).

The most recent data provided by the EIA for energy use in California is reported from 2021 and provided by demand sectors as follows:

- Approximately 41.3% transportation sector
- Approximately 23.5% industrial sector
- Approximately 18.1% residential sector
- Approximately 17.0% commercial sector (7)

According to the EIA, California used approximately 251,869 gigawatt hours of electricity in 2022 (8). By sector in 2022, residential uses utilized 35.6% of the state's electricity, followed by 45.3% for commercial uses, 18.9% for industrial uses, and 0.3% for transportation. Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building (8).

According to the EIA, California used approximately 200,871 million therms of natural gas in 2022 (9). In 2023 (the most recent year for which data is available), by sector, industrial uses utilized 31% of the state's natural gas, followed by 32% used as fuel in the electric power sector, 23% from residential, 13% from commercial, 1% from transportation uses and the remaining 3% was utilized for the operations, processing and production of natural gas itself (9). While the supply

of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90% of its supply of natural gas (9).

In 2022, total system electric generation for California was 287,220 gigawatt hours (GWh). California's massive electricity in-state generation system generated approximately 203,257 GWh which accounted for approximately 71% of the electricity it uses; the rest was imported from the Pacific Northwest (12%) and the U.S. Southwest (17%) (9). Natural gas is the main source for electricity generation at 47.46% of the total in-state electric generation system power as shown in Table 2-1.

An updated summary of, and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below (10):

- In 2022, California was the seventh-largest producer of crude oil among the 50 states, and, as of January 2022, the state ranked third in crude oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states.
- In 2020, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all but three other states.
- In 2022, renewable resources, including hydroelectric power and small-scale, customer-sited solar power, accounted for 49% of California's in-state electricity generation. Natural gas fueled another 42%. Nuclear power supplied almost all the rest.
- In 2022, California was the fourth-largest electricity producer in the nation. The state was also the nation's third-largest electricity consumer, and additional needed electricity supplies came from out-of-state generators.

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



TABLE 2-1: TOTAL ELECTRICITY SYSTEM POWER (CALIFORNIA 2022)

Fuel Type	California In-State Generation (GWh)	% of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Total California Energy Mix (GWh)	Total California Power Mix
Coal	273	0.13%	181	5,716	5,897	6,170	2.15%
Natural Gas	96,457	47.46%	44	7,994	8,038	104,495	36.38%
Oil	65	0.03%	-	-	-	65	0.2%
Other (Waste Heat/Petroleum Coke)	315	0.15%	-	-	-	315	0.11%
Unspecified	-	0.0%	12,485	7,943	20,428	20,428	7.11%
<b>Total Thermal and Unspecified</b>	<b>97,110</b>	<b>47.78%</b>	<b>12,710</b>	<b>21,653</b>	<b>34,363</b>	<b>121,473</b>	<b>45.77%</b>
Nuclear	17,627	8.67%	397	8,342	8,739	26,366	9.18%
Large Hydro	14,607	7.19%	10,803	1,118	11,921	26,528	9.24%
Biomass	5,366	2.64%	771	25	797	6,162	2.15%
Geothermal	11,110	5.47%	253	2,048	2,301	13,412	4.67%
Small Hydro	3,005	1.48%	211	13	225	3,230	1.12%
Solar	40,494	19.92%	231	8,225	8,456	48,950	17.04%
Wind	13,938	6.86%	8,804	8,357	17,161	31,099	10.83%
<b>Total Non-GHG and Renewables</b>	<b>106,147</b>	<b>52.22%</b>	<b>21,471</b>	<b>28,129</b>	<b>49,599</b>	<b>155,747</b>	<b>54.23%</b>
<b>SYSTEM TOTALS</b>	<b>203,257</b>	<b>100.0%</b>	<b>34,180</b>	<b>49,782</b>	<b>83,962</b>	<b>287,220</b>	<b>100.0%</b>

Source: CECs 2022 Total System Electric Generation

## 2.2 ELECTRICITY

The usage associated with electricity use were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.22. The Southern California region's electricity reliability has been of concern for the past several years due to the planned retirement of aging facilities that depend upon once-through cooling technologies, as well as the June 2013 retirement of the San Onofre Nuclear Generating Station (San Onofre). While the once-through cooling phase-out has been ongoing since the May 2010 adoption of the State Water Resources Control Board's once-through cooling policy, the retirement of San Onofre complicated the situation. California ISO studies revealed the extent to which the South California Air Basin (SCAB) and the San Diego Air Basin (SDAB) region were vulnerable to low-voltage and post-transient voltage instability concerns. A preliminary plan to address these issues was detailed in the 2013 Integrative Energy Policy Report (IEPR) after a collaborative process with other energy agencies, utilities, and air districts. Similarly, the subsequent 2023 IEPR provides information and policy recommendations on advancing a clean, reliable, and affordable energy system (11).

California's electricity industry is an organization of traditional utilities, private generating companies, and state agencies, each with a variety of roles and responsibilities to ensure that electrical power is provided to consumers. The California Independent Service Operator (ISO) is a nonprofit public benefit corporation and is the impartial operator of the State's wholesale power grid and is charged with maintaining grid reliability, and to direct uninterrupted electrical energy supplies to California's homes and communities. While utilities still own transmission assets, the ISO routes electrical power along these assets, maximizing the use of the transmission system and its power generation resources. The ISO matches buyers and sellers of electricity to ensure that enough power is available to meet demand. To these ends, every five minutes the ISO forecasts electrical demands, accounts for operating reserves, and assigns the lowest cost power plant unit to meet demands while ensuring adequate system transmission capacities and capabilities (13).

Part of the ISO's charge is to plan and coordinate grid enhancements to ensure that electrical power is provided to California consumers. To this end, utilities file annual transmission expansion/modification plans to accommodate the State's growing electrical needs. The ISO reviews and either approves or denies the proposed additions. In addition, and perhaps most importantly, the ISO works with other areas in the western United States electrical grid to ensure that adequate power supplies are available to the State. In this manner, continuing reliable and affordable electrical power is assured to existing and new consumers throughout the State.

Electricity is currently provided to the Project site by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons in 15 counties and in 180 incorporated cities, within a service area encompassing approximately 50,000 square miles. Based on SCE's 2022 Power Content Label Mix, SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers (14).

Table 2-2, SCE’s specific proportional shares of electricity sources in 2022. As indicated in Table 2-2, the 2022 SCE Power Mix has renewable energy at 33.2% of the overall energy resources. Geothermal resources are at 5.7%, wind power is at 9.8%, large hydroelectric sources are at 3.4%, solar energy is at 17.0%, and coal is at 0% (15).

**TABLE 2-2: SCE 2022 POWER CONTENT MIX**

Energy Resources	2022 SCE Power Mix
<b>Eligible Renewable</b>	<b>33.2%</b>
Biomass & Waste	0.1%
Geothermal	5.7%
Eligible Hydroelectric	0.5%
Solar	17.0%
Wind	9.8%
<b>Coal</b>	<b>0.0%</b>
<b>Large Hydroelectric</b>	<b>3.4%</b>
<b>Natural Gas</b>	<b>24.7%</b>
<b>Nuclear</b>	<b>8.3%</b>
<b>Other</b>	<b>0.1%</b>
Unspecified Sources of power*	30.3%
<b>Total</b>	<b>100%</b>

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

### 2.3 NATURAL GAS

The following summary of natural gas customers and volumes, supplies, delivery of supplies, storage, service options, and operations is excerpted from information provided by the California Public Utilities Commission (CPUC).

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

*California's natural gas utilities provide service to over 11 million gas meters. SoCalGas and PG&E provide service to about 5.9 million and 4.3 million customers, respectively, while SDG&E provides service to over 800, 000 customers. In 2018, California gas utilities forecasted that they would deliver about 4740 million cubic feet per day (MMcfd) of gas to their customers, on average, under normal weather conditions.*

*The overwhelming majority of natural gas utility customers in California are residential and small commercials customers, referred to as "core" customers. Larger volume gas*

customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

A significant amount of gas (about 19%, or 1131 MMcfd, of the total forecasted California consumption in 2018) is also directly delivered to some California large volume consumers, without being transported over the regulated utility pipeline system. Those customers, referred to as "bypass" customers, take service directly from interstate pipelines or directly from California producers.

SDG&E and Southwest Gas' southern division are wholesale customers of SoCalGas, i.e., they receive deliveries of gas from SoCalGas and in turn deliver that gas to their own customers. (Southwest Gas also provides natural gas distribution service in the Lake Tahoe area). Similarly, West Coast Gas, a small gas utility, is a wholesale customer of PG&E. Some other wholesale customers are municipalities like the cities of Palo Alto, Long Beach, and Vernon, which are not regulated by the CPUC.

Natural gas from out-of-state production basins is delivered into California via the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California gas utilities are Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, Ruby Pipeline, Mojave Pipeline, and Tuscarora. Another pipeline, the North Baja - Baja Norte Pipeline takes gas off the El Paso Pipeline at the California/Arizona border and delivers that gas through California into Mexico. While the Federal Energy Regulatory Commission (FERC) regulates the transportation of natural gas on the interstate pipelines, and authorizes rates for that service, the California Public Utilities Commission may participate in FERC regulatory proceedings to represent the interests of California natural gas consumers.

The gas transported to California gas utilities via the interstate pipelines, as well as some of the California-produced gas, is delivered into the PG&E and SoCalGas intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" pipeline system). Natural gas on the utilities' backbone pipeline systems is then delivered to the local transmission and distribution pipeline systems, or to natural gas storage fields. Some large volume noncore customers take natural gas delivery directly off the high-pressure backbone and local transmission pipeline systems, while core customers and other noncore customers take delivery off the utilities' distribution pipeline systems. The state's natural gas utilities operate over 100,000 miles of transmission and distribution pipelines, and thousands more miles of service lines.

Bypass customers take most of their deliveries directly off the Kern/Mojave pipeline system, but they also take a significant amount of gas from California production.

PG&E and SoCalGas own and operate several natural gas storage fields that are located within their service territories in northern and southern California, respectively. These storage fields, and four independently owned storage utilities - Lodi Gas Storage, Wild

*Goose Storage, Central Valley Storage, and Gill Ranch Storage - help meet peak seasonal and daily natural gas demand and allow California natural gas customers to secure natural gas supplies more efficiently. PG&E is a 25% owner of the Gill Ranch Storage field. These storage fields provide a significant amount of infrastructure capacity to help meet California's natural gas requirements, and without these storage fields, California would need much more pipeline capacity in order to meet peak gas requirements.*

*Prior to the late 1980s, California regulated utilities provided virtually all natural gas services to all their customers. Since then, the Commission has gradually restructured the California gas industry in order to give customers more options while assuring regulatory protections for those customers that wish to, or are required to, continue receiving utility-provided services.*

*The option to purchase natural gas from independent suppliers is one of the results of this restructuring process. Although the regulated utilities procure natural gas supplies for most core customers, core customers have the option to purchase natural gas from independent natural gas marketers, called "core transport agents" (CTA). Contact information for core transport agents can be found on the utilities' web sites. Noncore customers, on the other hand, make natural gas supply arrangements directly with producers or with marketers.*

*Another option resulting from the restructuring process occurred in 1993, when the Commission removed the utilities' storage service responsibility for noncore customers, along with the cost of this service from noncore customers' transportation rates. The Commission also encouraged the development of independent storage fields, and in subsequent years, all the independent storage fields in California were established. Noncore customers and marketers may now take storage service from the utility or from an independent storage provider (if available), and pay for that service, or may opt to take no storage service at all. For core customers, the Commission assures that the utility has adequate storage capacity set aside to meet core requirements, and core customers pay for that service.*

*In a 1997 decision, the Commission adopted PG&E's "Gas Accord", which unbundled PG&E's backbone transmission costs from noncore transportation rates. This decision gave customers and marketers the opportunity to obtain pipeline capacity rights on PG&E's backbone transmission pipeline system, if desired, and pay for that service at rates authorized by the Commission. The Gas Accord also required PG&E to set aside a certain amount of backbone transmission capacity in order to deliver gas to its core customers. Subsequent Commission decisions modified and extended the initial terms of the Gas Accord. The "Gas Accord" framework is still in place today for PG&E's backbone and storage rates and services and is now simply referred to as PG&E Gas Transmission and Storage (GT&S).*

*In a 2006 decision, the Commission adopted a similar gas transmission framework for Southern California, called the "firm access rights" system. SoCalGas and SDG&E implemented the firm access rights (FAR) system in 2008, and it is now referred to as the*

*backbone transmission system (BTS) framework. As under the PG&E backbone transmission system, SoCalGas backbone transmission costs are unbundled from noncore transportation rates. Noncore customers and marketers may obtain, and pay for, firm backbone transmission capacity at various receipt points on the SoCalGas system. A certain amount of backbone transmission capacity is obtained for core customers to assure meeting their requirements.*

*Many if not most noncore customers now use a marketer to provide for several of the services formerly provided by the utility. That is, a noncore customer may simply arrange for a marketer to procure its supplies, and obtain any needed storage and backbone transmission capacity, in order to assure that it will receive its needed deliveries of natural gas supplies. Core customers still mainly rely on the utilities for procurement service, but they have the option to take procurement service from a CTA. Backbone transmission and storage capacity is either set aside or obtained for core customers in amounts to assure very high levels of service.*

*In order properly operate their natural gas transmission pipeline and storage systems, PG&E and SoCalGas must balance the amount of gas received into the pipeline system and delivered to customers or to storage fields. Some of these utilities' storage capacity is dedicated to this service, and under most circumstances, customers do not need to precisely match their deliveries with their consumption. However, when too much or too little gas is expected to be delivered into the utilities' systems, relative to the amount being consumed, the utilities require customers to more precisely match up their deliveries with their consumption. And, if customers do not meet certain delivery requirements, they could face financial penalties. The utilities do not profit from these financial penalties - the amounts are then returned to customers as a whole. If the utilities find that they are unable to deliver all the gas that is expected to be consumed, they may even call for a curtailment of some gas deliveries. These curtailments are typically required for just the largest, noncore customers. It has been many years since there has been a significant curtailment of core customers in California.” (15)*

As indicated in the preceding discussions, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available via existing delivery systems, thereby increasing the availability and reliability of resources in total. The CPUC oversees utility purchases and transmission of natural gas to ensure reliable and affordable natural gas deliveries to existing and new consumers throughout the State.

California accounts for less than 1% of total U.S. natural gas reserves and production. As with crude oil, California's natural gas production has experienced a gradual decline since 1985. In 2021, about 33% of the natural gas delivered to consumers went to the State's industrial sector, and about 31% was delivered to the electric power sector. Natural gas fueled more than two-fifths of the State's utility-scale electricity generation in 2021. The residential sector, where three-fifths of California households use natural gas for home heating, accounted for 22% of natural gas deliveries. The commercial sector received 12% of the deliveries to end users and the transportation sector consumed the remaining 1% (16).

## 2.4 TRANSPORTATION ENERGY RESOURCES

The Project would generate additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. The Department of Motor Vehicles (DMV) identified 36.2 million registered vehicles in California (6), and those vehicles consume an estimated 17.2 billion gallons of fuel each year<sup>1</sup>. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the Project patrons and employees via commercial outlets.

California's on-road transportation system includes 396,616 lane miles, more than 26.6 million passenger vehicles and light trucks, and almost 9.0 million medium- and heavy-duty vehicles (6). While gasoline consumption has been declining since 2008 it is still by far the dominant fuel. California is the second-largest consumer of petroleum products, after Texas, and accounts for 8% of the nation's total consumption. The State is the largest U.S. consumer of jet fuel and the second-largest of motor gasoline, and 83% of the petroleum consumed in California is used in the transportation sector (16).

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<sup>1</sup> Fuel consumptions estimated utilizing information from EMFAC2021.

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### **3 REGULATORY BACKGROUND**

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

#### **3.1 FEDERAL REGULATIONS**

##### **3.1.1 INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991 (ISTEA)**

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

##### **3.1.2 THE TRANSPORTATION EQUITY ACT FOR THE 21<sup>ST</sup> CENTURY (TEA-21)**

The TEA-21 was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

#### **3.2 CALIFORNIA REGULATIONS**

##### **3.2.1 INTEGRATED ENERGY POLICY REPORT (IEPR)**

Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code § 25301[a]). The CEC prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2023 IEPR was adopted February 2023, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2023 IEPR introduces a new

framework for embedding equity and environmental justice at the CEC and the California Energy Planning Library which allows for easier access to energy data and analytics for a wide range of users. Additionally, energy reliability, western electricity integration, gasoline cost factors and price spikes, the role of hydrogen in California’s clean energy future, fossil gas transition and distributed energy resources are topics discussed within the 2023 IEPR (11).

### **3.2.2 STATE OF CALIFORNIA ENERGY PLAN**

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

### **3.2.3 CALIFORNIA CODE TITLE 24, PART 6, ENERGY EFFICIENCY STANDARDS**

California Code of Regulations (CCR) Title 24 Part 6: California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California’s energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on August 1, 2009, and is administered by the California Building Standards Commission.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that became effective on January 1, 2023. The CEC anticipates that the 2022 energy code will provide \$1.5 billion in consumer benefits and reduce GHG emissions by 10 million metric tons (18). The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made. These require, among other items (19):

#### **NONRESIDENTIAL MANDATORY MEASURES**

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors’ entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).

- EV charging stations. New construction shall facilitate the future installation of EV supply equipment. The compliance requires empty raceways for future conduit and documentation that the electrical system has adequate capacity for the future load. The number of spaces to be provided for is contained in Table 5.106.5.3.3 (5.106.5.3). Additionally, Table 5.106.5.4.1 specifies requirements for the installation of raceway conduit and panel power requirements for medium- and heavy-duty EV supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, upright and glare ratings per Table 5.106.8 (5.106.8).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.405.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive (5.410.1).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
  - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1)
  - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
  - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combine flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).
  - Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle (5.303.3.4.5).
- Outdoor potable water uses in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).

- Water meters. Separate submeters or metering devices shall be installed for new buildings or additions in excess of 50,000 sf or for excess consumption where any tenant within a new building or within an addition that is project to consume more than 1,000 gallons per day (GPD) (5.303.1.1 and 5.303.1.2).
- Outdoor water uses in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner’s or owner representative’s project requirements (5.410.2).

### **3.2.4 AB 1493 PAVLEY REGULATIONS AND FUEL EFFICIENCY STANDARDS**

California AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Under this legislation, CARB adopted regulations to reduce GHG emissions from non-commercial passenger vehicles (cars and light-duty trucks). Although aimed at reducing GHG emissions, specifically, a co-benefit of the Pavley standards is an improvement in fuel efficiency and consequently a reduction in fuel consumption.

### **3.2.5 CALIFORNIA’S RENEWABLE PORTFOLIO STANDARD (RPS)**

First established in 2002 under Senate Bill (SB) 1078, California’s Renewable Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable resources to 44% of total retail sales by 2024 (20).

### **3.2.6 CLEAN ENERGY AND POLLUTION REDUCTION ACT OF 2015 (SB 350)**

In October 2015, the legislature approved, and the Governor signed SB 350, which reaffirms California’s commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33% to 50% by 2030, with interim targets of 40% by 2024, and 45% by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

### **3.2.7 100 PERCENT CLEAN ENERGY ACT OF 2018 (SB 100)**

In September 2018, the legislature approved, and the Governor signed SB 100, which builds on the targets established in SB 1078 and SB 350. Most notably, SB 100 sets a goal of powering all

retail electricity sold in California with renewable and zero-carbon resources. Additionally, SB 100 updates the interim renewables target from 50% to 60% by 2030.

### **3.2.8 EXECUTIVE ORDER N-79-20 AND ADVANCED CLEAN CARS II**

On August 25, 2022, CARB approved the Advanced Clean Cars II rule, which codifies the goals set out in Executive Order N-79-20 and establishes a year-by-year roadmap such that by 2035, 100% of new cars and light trucks sold in California will be zero-emission vehicles. Under this regulation, automakers are required to accelerate deliveries of zero-emission light-duty vehicles, beginning with model year 2026. CARB estimates that between 2026 and 2040, the regulation would reduce GHG emissions by a cumulative 395 million metric tons, equivalent to reducing petroleum use by 915 million barrels.

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## 4 PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

### 4.1 EVALUATION CRITERIA

Per Appendix F of the *State CEQA Guidelines* (21), states that the means of achieving the goal of energy conservation includes the following:

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

In compliance with Appendix G of the *State CEQA Guidelines* (22), this report analyzes the project's anticipated energy use during construction and operations to determine if the Project would:

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

### 4.2 METHODOLOGY

Information from the CalEEMod Version 2022 outputs for the *Animal Care Facility (MIL-291) Air Quality Impact Analysis* (AQIA) (24) was utilized in this analysis, detailing Project related construction equipment, transportation energy demands, and facility energy demands.

#### 4.2.1 CAL EEMOD

In August 2023, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including the SCAQMD, released the latest version of CalEEMod, version 2022.1.1.22. The purpose of this model is to calculate construction-source and operational-source criteria pollutants and GHG emissions from direct and indirect sources as well as energy usage (26). Accordingly, the latest version of CalEEMod has been used to determine the proposed Project's anticipated transportation and facility energy demands. Outputs from the annual model runs are provided in Appendices 4.1 and 4.2.

#### 4.2.2 EMISSION FACTORS MODEL

On May 2, 2022, the EPA approved the 2021 version of the EMISSIONS FACTOR model (EMFAC) web database for use in State Implementation Plan and transportation conformity analyses. EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the CARB to project changes in future emissions from on-road mobile sources (26). This energy study utilizes the different fuel types for each vehicle class from the annual EMFAC2021 emission inventory in order to derive the average vehicle fuel economy which is then used to determine the estimated annual fuel consumption associated with vehicle usage during Project construction and operational activities. For purposes of the

analysis, the 2024, 2025, and 2026 analysis years were utilized to determine the average vehicle fuel economy used throughout the duration of the Project. Outputs from the EMFAC2021 model runs are provided in Appendix 4.3.

**CONSTRUCTION DURATION**

Construction would occur over a period of 12 months, beginning in August 2024 (24). The construction schedule utilized in the analysis, shown in Table 4-1, represents a “worst-case” analysis scenario. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (24).

**TABLE 4-1: CONSTRUCTION DURATION**

Construction Activity	Start Date	End Date	Days
Site Preparation	08/06/2024	09/02/2024	20
Grading	09/03/2024	10/28/2024	40
Building Construction	10/29/2024	08/04/2025	200
Paving	06/10/2025	08/04/2025	40
Architectural Coating	06/10/2025	08/04/2025	40

Source: Appendix 4.1

**CONSTRUCTION EQUIPMENT**

Consistent with industry standards and typical construction practices, each piece of equipment listed in Table 4-2 will operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the code. The equipment list is generally based on CalEEMod default parameters and confirmed with the Project Applicant.

**TABLE 4-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS**

Construction Activity	Equipment	Amount	Hours Per Day
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8
Grading	Excavators	1	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Crawler Tractors	3	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8



Construction Activity	Equipment	Amount	Hours Per Day
	Welders	1	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

### 4.3 CONSTRUCTION ENERGY DEMANDS

The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed Project.

#### 4.3.1 CONSTRUCTION POWER COST

The total Project construction power costs is the summation of the products of the area (sf) by the construction duration and the typical power cost.

##### PROJECT CONSTRUCTION POWER COST

The *2024 National Construction Estimator* identifies a typical power cost per 1,000 sf of construction per month of \$2.66, which was used to calculate the Project’s total construction power cost (28).

As shown on Table 4-3, the total power cost of the on-site electricity usage during the construction of the Project is estimated to be approximately \$3,160.56.

**TABLE 4-3: CONSTRUCTION POWER COST**

Land Use	Power Cost (per 1,000 SF)	Size (1,000 SF)	Construction Duration (months)	Project Construction Power Cost
Medical Office Building	\$2.66	74.391	12	\$2,374.56
Parking Lot	\$2.66	24.624	12	\$786.00
<b>CONSTRUCTION POWER COST</b>				<b>\$3,160.56</b>

#### 4.3.2 CONSTRUCTION ELECTRICITY USAGE

The total Project construction electricity usage is the summation of the products of the power cost (estimated in Table 4-3) by the utility provider cost per kilowatt hour (kWh) of electricity.

##### PROJECT CONSTRUCTION ELECTRICITY USAGE

The SCE’s general service rate schedule were used to determine the Project’s electrical usage. As of January 1, 2024, SCE’s general service rate is \$0.14 per kilowatt hours (kWh) of electricity for general services (28). As shown on Table 4-4, the total electricity usage from on-site Project construction related activities is estimated to be approximately 22,575 kWh.

**TABLE 4-4: CONSTRUCTION ELECTRICITY USAGE**

Land Use	Cost per kWh	Project Construction Electricity Usage (kWh)
Medical Office Building	\$0.14	16,961
Parking Lot	\$0.14	5,614
<b>CONSTRUCTION ELECTRICITY USAGE</b>		<b>22,575</b>

**4.3.3 CONSTRUCTION EQUIPMENT FUEL ESTIMATES**

Fuel consumed by construction equipment would be the primary energy resource expended over the course of Project construction.

**PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTION**

Project construction activity timeline estimates, construction equipment schedules, equipment power ratings, load factors, and associated fuel consumption estimates are presented in Table 4-5. The aggregate fuel consumption rate for all equipment is estimated at 18.5 horsepower hour per gallon (hp-hr-gal.), obtained from CARB 2018 Emissions Factors Tables and cited fuel consumption rate factors presented in Table D-24 of the Moyer guidelines (29). For the purposes of this analysis, the calculations are based on all construction equipment being diesel-powered which is consistent with industry standards. Diesel fuel would be supplied by existing commercial fuel providers serving the Project area and region<sup>3</sup>. As presented in Table 4-5, Project construction activities would consume an estimated 38,146 gallons of diesel fuel. Project construction would represent a “single-event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

<sup>3</sup> Based on Appendix A of the CalEEMod User’s Guide, Construction consists of several types of off-road equipment. Since the majority of the off-road construction equipment used for construction projects are diesel fueled, CalEEMod assumes all of the equipment operates on diesel fuel.

TABLE 4-5: CONSTRUCTION EQUIPMENT FUEL CONSUMPTION ESTIMATES

Activity/Duration	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption (gal. diesel fuel)
Site Preparation	20	Rubber Tired Dozers	367	3	8	0.40	3,523	3,809
		Crawler Tractors	87	4	8	0.43	1,197	1,294
Grading	40	Excavators	36	1	8	0.38	109	237
		Graders	148	1	8	0.41	485	1,050
		Rubber Tired Dozers	367	1	8	0.40	1,174	2,539
		Crawler Tractors	87	3	8	0.43	898	1,941
Building Construction	200	Cranes	367	1	8	0.29	851	9,205
		Forklifts	82	3	8	0.20	394	4,255
		Generator Sets	14	1	8	0.74	83	896
		Tractors/Loaders/Backhoes	84	3	8	0.37	746	8,064
		Welders	46	1	8	0.45	166	1,790
Paving	40	Pavers	81	2	8	0.42	544	1,177
		Paving Equipment	89	2	8	0.36	513	1,108
		Rollers	36	2	8	0.38	219	473
Architectural Coating	40	Air Compressors	37	1	8	0.48	142	307
<b>TOTAL CONSTRUCTION FUEL DEMAND (GALLONS DIESEL FUEL)</b>								<b>38,146</b>

### 4.3.3 CONSTRUCTION TRIPS AND VMT

Construction generates on-road vehicle emissions from vehicle usage for workers, hauling, and vendors commuting to and from the site. The number of workers, hauling, and vendor trips are presented below in Table 4-6. It should be noted that for Vendor Trips, specifically, CalEEMod only assigns Vendor Trips to the Building Construction phase. Vendor trips are more likely to occur during all phases of construction. As such, the analysis has been revised so that the default trips are ratioed between Site Preparation, Grading, and Building Construction activities based on the number of days. It should be noted that because Paving and Architectural Coating activities overlap with Building Construction, the analysis assumes that the vendor trips assigned to Building Construction cover Paving and Architectural Coating as well.

**TABLE 4-6: CONSTRUCTION TRIPS AND VMT**

Phase Name	Worker Trips / Day	Vendor Trips / Day	Hauling Trips / Day	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Site Preparation	18	1	0	18.5	10.2	20
Grading	15	2	0	18.5	10.2	20
Building Construction	24	9	0	18.5	10.2	20
Paving	15	0	0	18.5	10.2	20
Architectural Coating	5	0	0	18.5	10.2	20

### 4.3.4 CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT for the Project, the construction worker trips would generate an estimated 124,690 VMT during construction (24). Based on CalEEMod methodology, it is assumed that 50% of all worker trips are from light-duty-auto vehicles (LDA), 25% are from light-duty-trucks (LDT1<sup>4</sup>), and 25% are from light-duty-trucks (LDT2<sup>5</sup>). Data regarding Project related construction worker trips were based on CalEEMod defaults utilized within the AQIA.

Vehicle fuel efficiencies for LDA, LDT1, and LDT2 were estimated using information generated within the 2021 version of the EMFAC developed by CARB. EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, and VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the CARB to project changes in future emissions from on-road mobile sources (26). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the San Bernardino South Coast sub-area for the 2024, 2025, and 2026 calendar years. Data from EMFAC2021 is shown in Appendix 4.3.

<sup>4</sup> Vehicles under the LDT1 category have a gross vehicle weight rating (GVWR) of less than 6,000 lbs. and equivalent test weight (ETW) of less than or equal to 3,750 lbs.

<sup>5</sup> Vehicles under the LDT2 category have a GVWR of less than 6,000 lbs. and ETW between 3,751 lbs. and 5,750 lbs.

Table 4-7 provides an estimated annual fuel consumption resulting from Project construction worker trips. Based on Table 4-7, it is estimated that 4,435 gallons of fuel will be consumed related to construction worker trips during full construction of the Project.

It should be noted that construction worker trips would represent a “single-event” gasoline fuel demand and would not require on-going or permanent commitment of fuel resources for this purpose.

**TABLE 4-7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES**

Year	Construction Activity	Duration (Days)	Worker (Trips/Day)	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2024	LDA						
	Site Preparation	20	9	18.5	3,330	31.57	105
	Grading	40	8	18.5	5,920	31.57	187
	Building Construction	46	12	18.5	10,212	31.57	323
	LDT1						
	Site Preparation	20	5	18.5	1,850	24.59	75
	Grading	40	4	18.5	2,960	24.59	120
	Building Construction	46	6	18.5	5,106	24.59	208
	LDT2						
	Site Preparation	20	5	18.5	1,850	24.51	75
	Grading	40	4	18.5	2,960	24.51	121
	Building Construction	46	6	18.5	5,106	24.51	208
2025	LDA						
	Building Construction	154	12	18.5	34,188	32.57	1,050
	Paving	40	8	18.5	5,920	32.57	182
	Architectural Coating	40	3	18.5	2,220	32.57	68
	LDT1						
	Building Construction	154	6	18.5	17,094	25.11	681
	Paving	40	4	18.5	2,960	25.11	118
	Architectural Coating	40	2	18.5	1,480	25.11	59
	LDT2						
Building Construction	154	6	18.5	17,094	25.24	677	

Year	Construction Activity	Duration (Days)	Worker (Trips/Day)	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
	Paving	40	4	18.5	2,960	25.24	117
	Architectural Coating	40	2	18.5	1,480	25.24	59
<b>TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION</b>							<b>4,435</b>

#### 4.3.5 CONSTRUCTION VENDOR FUEL ESTIMATES

With respect to estimated VMT, the construction vendor trips (vehicles that deliver materials to the site during construction) would generate an estimated 21,624 VMT along area roadways for the Project over the duration of construction activity (24). It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHDT) and 50% of vendor trips are from heavy-heavy duty trucks (HHDT). These assumptions are consistent with the CalEEMod defaults utilized within the within the AQIA (24). Vehicle fuel efficiencies for MHDTs and HHDTs were estimated using information generated within EMFAC2021. EMFAC2021 was run for the MHDT and HHDT vehicle classes within the San Bernardino South Coast sub-area for the 2024, 2025, and 2026 calendar years. Data from EMFAC2021 is shown in Appendix 4.3.

Based on Table 4-8, it is estimated that 3,059 gallons of fuel will be consumed related to construction vendor trips during full construction of the Project.

It should be noted that Project construction vendor trips would represent a “single-event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.



**TABLE 4-8: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES**

Year	Construction Activity	Duration (Days)	Vendor (Trips/Day)	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2024	MHDT						
	Site Preparation	20	1	10.2	204	8.32	25
	Grading	40	1	10.2	408	8.32	49
	Building Construction	46	5	10.2	2,346	8.32	282
	HHDT						
	Site Preparation	20	1	10.2	204	6.03	34
	Grading	40	1	10.2	408	6.03	68
Building Construction	46	5	10.2	2,346	6.03	389	
2025	MHDT						
	Building Construction	154	5	10.2	7,854	8.43	931
	HHDT						
Building Construction	154	5	10.2	7,854	6.13	1,281	
<b>TOTAL CONSTRUCTION VENDOR FUEL CONSUMPTION</b>							<b>3,059</b>

#### 4.3.6 CONSTRUCTION ENERGY EFFICIENCY/CONSERVATION MEASURES

Starting in 2014, CARB adopted the nation's first regulation aimed at cleaning up off-road construction equipment such as bulldozers, graders, and backhoes. These requirements ensure fleets gradually turn over the oldest and dirtiest equipment to newer, cleaner models and prevent fleets from adding older, dirtier equipment. As such, the equipment used for Project construction would conform to CARB regulations and California emissions standards. It should also be noted that there are no unusual Project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the Project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

Construction contractors would be required to comply with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with anti-idling and emissions regulations would result in a more efficient use of construction-related energy and the minimization or elimination of wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additional construction-source energy efficiencies would occur due to required California regulations and best available control measures (BACM). For example, CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Section 2449(d)(3) requires that grading plans shall reference the requirement that a sign shall be posted on-site stating that construction workers need to shut off engines at or before five minutes of idling." In this manner, construction equipment operators are required to be informed that engines are to be turned off at or prior to five minutes of idling. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

A full analysis related to the energy needed to form construction materials is not included in this analysis due to a lack of detailed Project-specific information on construction materials. At this time, an analysis of the energy needed to create Project-related construction materials would be extremely speculative and thus has not been prepared.

In general, construction processes promote conservation and efficient use of energy by reducing raw materials demands, with related reduction in energy demands associated with raw materials extraction, transportation, processing, and refinement. Use of materials in bulk reduces energy demands associated with preparation and transport of construction materials as well as the transport and disposal of construction waste and solid waste in general, with corollary reduced demands on area landfill capacities and energy consumed by waste transport and landfill operations.

#### 4.4 OPERATIONAL ENERGY DEMANDS

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

##### 4.4.1 TRANSPORTATION ENERGY DEMANDS

Energy that would be consumed by Project-generated traffic is a function of total VMT and estimated vehicle fuel economies of vehicles accessing the Project site. The VMT per vehicle class can be determined by evaluated in the vehicle fleet mix and the total VMT.

As with worker and vendors trips, operational vehicle fuel efficiencies were estimated using information generated within EMFAC2021 developed by CARB (26). EMFAC2021 was run for the San Bernardino South Coast sub-area for the 2026 calendar year. Data from EMFAC2021 is shown in Appendix 4.3.

As summarized on Table 4-9, the Project will result in 1,383,369 annual VMT and an estimated annual fuel consumption of 52,200 gallons of fuel.

**TABLE 4-9: TOTAL PROJECT-GENERATED TRAFFIC ANNUAL FUEL CONSUMPTION**

Vehicle Type	Average Vehicle Fuel Economy (mpg)	Annual Miles Traveled <sup>1</sup>	Estimated Annual Fuel Consumption (gallons)
LDA	33.47	691,114	20,646
LDT1	25.64	54,534	2,127
LDT2	25.93	288,108	11,110
MDV	21.11	212,158	10,052
LHD1	16.62	78,228	4,707
LHD2	15.58	21,359	1,371
MHDT	8.56	0	0
HHDT	6.24	0	0
OBUS	6.31	845	134
UBUS	5.04	432	86
MCY	42.30	28,993	685
SBUS	6.46	1,511	234
MH	5.80	6,087	1,049
<b>ANNUAL FUEL CONSUMPTION TOTAL</b>		<b>1,383,369</b>	<b>52,200</b>

<sup>1</sup> Total VMT may not match CalEEMod output due to rounding.

**4.4.2 STATIONARY SOURCE ENERGY DEMANDS**

Fuel consumption estimates from stationary sources are presented in Table 4-11. As previously stated, the aggregate fuel consumption rate for all equipment is estimated at 18.5 hp-hr-gal., obtained from CARB 2018 Emissions Factors Tables and cited fuel consumption rate factors presented in Table D-24 of the Moyer guidelines. For the purposes of this analysis, the calculations are based on a 909 hp diesel-fueled emergency generator. Diesel fuel would be supplied by existing industrial fuel providers serving the City and region. As presented in Table 4-11, Project stationary sources would consume an estimated 1,712 gallons of diesel fuel.

**TABLE 4-11: STATIONARY SOURCE EQUIPMENT FUEL CONSUMPTION ESTIMATES**

Equipment	Horsepower	Fuel Consumption (gal./hour)	Activity (hrs./yr)	Total Fuel Consumption (gal./year)
Emergency Generator	909	34	50	1,712
<b>STATIONARY SOURCE FUEL DEMAND (GALLONS DIESEL FUEL)</b>				<b>1,712</b>

**4.4.3 ENERGY DEMANDS**

The Project operational activities would result in the consumption of natural gas and electricity. Electricity would be supplied to the Project by SCE. As previously stated, the analysis herein assumes compliance with the 2022 Title 24 and CALGreen standards. Annual electricity demands of the Project are summarized in Table 4-10 and provided in Appendix 4.2.

Based on information provided by the Project applicant, the site is not expected to utilize natural gas for the building envelope, and therefore would not generate any emissions from direct energy consumption from natural gas.

**TABLE 4-10: PROJECT ANNUAL OPERATIONAL ELECTRICITY DEMAND SUMMARY**

Land Use	Electricity Demand (kWh/year)
Animal Care Facility	363,898
Parking Lot	21,750
<b>TOTAL PROJECT ENERGY DEMAND</b>	<b>385,648</b>

**4.4.4 OPERATIONAL ENERGY EFFICIENCY/CONSERVATION MEASURES**

Energy efficiency/energy conservation attributes of the Project would be complemented by increasingly stringent state and federal regulatory actions addressing vehicle fuel economies and vehicle emissions standards; and enhanced building/utilities energy efficiencies mandated under California building codes (e.g., Title 24, California Green Building Standards Code).

**ENHANCED VEHICLE FUEL EFFICIENCIES**

Project annual fuel consumption estimates presented previously in Table 4-9 represent likely potential maximums that would occur for the Project. Under subsequent future conditions, average fuel economies of vehicles accessing the Project site can be expected to improve as older, less fuel-efficient vehicles are removed from circulation, and in response to fuel economy and emissions standards imposed on newer vehicles entering the circulation system.

Enhanced fuel economies realized pursuant to federal and state regulatory actions, and related transition of vehicles to alternative energy sources (e.g., electricity, natural gas, biofuels, hydrogen cells) would likely decrease future gasoline fuel demands per VMT. Location of the Project proximate to regional and local roadway systems tends to reduce VMT within the region, acting to reduce regional vehicle energy demands.

## **4.5 SUMMARY**

### **4.5.1 CONSTRUCTION ENERGY DEMANDS**

The estimated power cost of on-site electricity usage during the construction of the Project is assumed to be approximately \$3,160.56. Additionally, based on the assumed power cost, it is estimated that the total electricity usage during construction, after full Project build-out, is calculated to be approximately 22,575 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 38,146 gallons of diesel fuel. Construction equipment use of fuel would not be atypical for the type of construction proposed because there are no aspects of the Project's proposed construction process that are unusual or energy-intensive, and Project construction equipment would conform to the applicable CARB emissions standards, acting to promote equipment fuel efficiencies.

CCR Title 13, Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. BACMs inform construction equipment operators of this requirement. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Construction worker trips for full construction of the Project would result in the estimated fuel consumption of 4,435 gallons of fuel. Additionally, fuel consumption from construction hauling and vendor trips (MHDTs and HHDTs) will total approximately 3,059 gallons. Diesel fuel would be supplied by County and regional commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved using bulk purchases, transport and use of construction materials. The 2022 IEPR released by the CEC has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements (30). As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

## 4.5.2 OPERATIONAL ENERGY DEMANDS

### TRANSPORTATION ENERGY DEMANDS

Annual vehicular trips and related VMT generated by the operation of the Project will result in 1,383,369 annual VMT and an estimated annual fuel consumption of 52,200 gallons of fuel.

Fuel would be provided by current and future commercial vendors. Trip generation and VMT generated by the Project are consistent with other uses of similar scale and configuration, as reflected respectively in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Ed., 2021); and CalEEMod. As such, Project operations would not result in excessive and wasteful vehicle trips and VMT, nor excess and wasteful vehicle energy consumption compared to similar uses.

It should be noted that the state strategy for the transportation sector for medium and heavy-duty trucks is focused on making trucks more efficient and expediting truck turnover rather than reducing VMT from trucks. This is in contrast to the passenger vehicle component of the transportation sector where both per-capita VMT reductions and an increase in vehicle efficiency are forecasted to be needed to achieve the overall state emissions reductions goals.

Enhanced fuel economies realized pursuant to federal and state regulatory actions, and related transition of vehicles to alternative energy sources (e.g., electricity, natural gas, biofuels, hydrogen cells) would likely decrease future gasoline fuel demands per VMT. Location of the Project proximate to regional and local roadway systems tends to reduce VMT within the region, acting to reduce regional vehicle energy demands. The Project would implement sidewalks, facilitating and encouraging pedestrian access. Facilitating pedestrian and bicycle access would reduce VMT and associated energy consumption. As supported by the preceding discussions, Project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

### FACILITY ENERGY DEMANDS

Project facility operational energy demands are estimated at 385,648 kWh/year of electricity. Electricity would be supplied by SCE. Based on information provided by the Project applicant, the site is not expected to utilize natural gas for the building envelope, and therefore would not generate any emissions from direct energy consumption. The Project proposes conventional commercial uses reflecting contemporary energy efficient/energy conserving designs and operational programs. The Project does not propose uses that are inherently energy intensive and the energy demands in total would be comparable to other uses of similar scale and configuration.

Implementation of the Project would increase the demand for electricity at the Project site and petroleum consumption in the region during operation. However, the electrical consumption demands of the Project during operation would conform to the state's Title 24 and to CALGreen standards, which implement conservation measures. Further, the proposed Project would not directly require the construction of new energy generation or supply facilities and providers of electricity are in compliance with regulatory requirements that assist in conservation, including

requirements that electrical providers achieve state-mandated renewable energy production requirements. With compliance with Title 24 conservation standards and other regulatory requirements, the Project would not be wasteful or inefficient or unnecessarily consume energy resources during construction or operation and would result in a less-than-significant impact with respect to consumption of energy resources.

Lastly, the Project will comply with the applicable Title 24 standards. Compliance itself with applicable Title 24 standards will ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary.

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## 5 CONCLUSIONS

### 5.1 ENERGY IMPACT 1

***Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?***

#### ***Impact Analysis***

A significant impact would occur if the proposed Project would result in the inefficient, wasteful, or unnecessary use of energy.

#### ***Construction***

Based on CalEEMod estimations within the modeling output files used to estimate GHG emissions associated with the Project, construction-related vehicle trips would result in approximately 244,594 VMT and consume an estimated 12,833 gallons of gasoline and diesel combined during the construction phases. Additionally, on-site construction equipment would consume an estimated 59,935 gallons of diesel fuel. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California Code of Regulations, Title 13, Sections 2449 and 2485, limit idling from both on-road and off-road diesel- powered equipment and are enforced by the ARB. Additionally, given the cost of fuel, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Due to the temporary nature of construction and the financial incentives for developers and contractors to use energy-consuming resources in an efficient manner, the construction phase of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy. Therefore, the construction-related impacts related to electricity and fuel consumption would be less than significant.

#### ***Operation***

#### **Electricity and Natural Gas**

Operation of the proposed project would consume energy as part of building operations and transportation activities. Building operations would involve energy consumption for multiple purposes including, but not limited to, building heating and cooling, refrigeration, lighting, and electronics. Based on the Project Applicant, operations for the Project would result in approximately 385,648 kWh/year of electricity annually. Based on information provided by the Project applicant, the site is not expected to utilize natural gas for the building envelope, and therefore would not generate any emissions from direct energy consumption.

Development of the Project would be designed and constructed in accordance with the County's latest adopted energy efficiency standards, which are based on the California Title 24 energy efficiency standards. Title 24 standards include a broad set of energy conservation requirements

that apply to the structural, mechanical, electrical, and plumbing systems in a building. For example, the Title 24 Lighting Power Density requirements define the maximum wattage of lighting that can be used in a building based on its square footage. Title 24 standards are widely regarded as the most advanced energy efficiency standards, would help reduce the amount of energy required for lighting, water heating, and heating and air conditioning in buildings and promote energy conservation.

## **Fuel**

Operational energy would also be consumed during vehicle trips associated with future development projects envisioned under the proposed Project. Fuel consumption would be primarily related to vehicle use by visitors and employees associated with the Project. Based on CalEEMod energy use estimations, project-related vehicle trips would result in approximately 1,383,369 annual VMT and an estimated annual fuel consumption of 52,200 gallons of fuel.

The Project is surrounded by existing urban uses, the existing transportation facilities and infrastructure would provide visitors and employees associated with the Project access to a mix of land uses in close proximity to the Project, thus further reducing fuel consumption demand. For these reasons, operational-related transportation fuel consumption would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the operational impact related to vehicle fuel consumption would be less than significant.

## **5.2 ENERGY IMPACT 2**

### ***Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

#### ***Impact Analysis***

A significant impact would occur if the proposed Project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

#### ***Construction***

As discussed in Section 5.1, above, the proposed project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment, and the use of electricity for temporary buildings, lighting, and other sources. California Code of Regulations Title 13, Sections 2449 and 2485, limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. The proposed project would comply with these regulations. There are no policies at the local level applicable to energy conservation specific to the construction phase. Thus, it is anticipated that construction of the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use or increasing the use of renewable energy. Therefore, construction-related energy efficiency and renewable energy standards consistency impacts would be less than significant.

#### ***Operation***

California's Renewable Portfolio Standard (RPS) establishes a goal of renewable energy for local providers to be 44 percent by 2040. Similarly, the State is promoting renewable energy targets to meet the 2022 Scoping Plan greenhouse gas emissions reductions. As discussed in Section 5.1, above, the Project would result in approximately 385,648 kWh/year of electricity annually. Based on information provided by the Project applicant, the site is not expected to utilize natural gas for the building envelope, and therefore would not generate any emissions from direct energy consumption.

Development of the Project would be designed and constructed in accordance with the County's latest adopted energy efficiency standards, which are based on the California Title 24 energy efficiency standards. Title 24 standards include a broad set of energy conservation requirements that apply to the structural, mechanical, electrical, and plumbing systems in a building. For example, the Title 24 Lighting Power Density requirements define the maximum wattage of lighting that can be used in a building based on its square footage. Title 24 standards are widely regarded as the most advanced energy efficiency standards, would help reduce the amount of energy required for lighting, water heating, and heating and air conditioning in buildings and promote energy conservation.

Compliance with the aforementioned mandatory measures would ensure that future development projects would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use or increasing the use of renewable energy. Therefore, operational energy efficiency and renewable energy standards consistency impacts would be less than significant.

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## 7 CERTIFICATIONS

The contents of this energy analysis report represent an accurate depiction of the environmental impacts associated with the proposed Animal Care Facility (MIL-291). The information contained in this energy analysis report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at [hqureshi@urbanxroads.com](mailto:hqureshi@urbanxroads.com).

Haseeb Qureshi  
Principal  
Urban Crossroads, Inc.  
[hqureshi@urbanxroads.com](mailto:hqureshi@urbanxroads.com)

### EDUCATION

Master of Science in Environmental Studies  
California State University, Fullerton • May 2010

Bachelor of Arts in Environmental Analysis and Design  
University of California, Irvine • June 2006

### PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners  
AWMA – Air and Waste Management Association  
ASTM – American Society for Testing and Materials

### PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June 2011  
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April 2008  
Principles of Ambient Air Monitoring – California Air Resources Board • August 2007  
AB2588 Regulatory Standards – Trinity Consultants • November 2006  
Air Dispersion Modeling – Lakes Environmental • June 2006



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## **APPENDIX 4.1:**

### **CALEEMOD CONSTRUCTION EMISSIONS MODEL OUTPUTS**

# Animal Care Facility (Construction - Unmitigated) Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Animal Care Facility (Construction - Unmitigated)
Construction Start Date	8/6/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	6.80
Location	34.0703776, -117.4049997
County	San Bernardino-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5334
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 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
Medical Office Building	74.4	1000sqft	5.43	74,391	162,345	0.00	—	—

Parking Lot	144	Space	0.57	0.00	0.00	0.00	—	—
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### 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.	5.45	8.35	42.6	36.9	0.05	2.25	5.91	8.16	2.07	2.74	4.82	—	5,820	5,820	0.24	0.10	3.07	5,844
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.10	2.61	23.3	21.6	0.03	1.33	2.47	3.80	1.22	0.99	2.21	—	3,394	3,394	0.14	0.08	0.06	3,410
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.85	1.33	6.48	8.07	0.01	0.34	0.64	0.98	0.31	0.27	0.58	—	1,576	1,576	0.07	0.03	0.42	1,588
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.24	1.18	1.47	< 0.005	0.06	0.12	0.18	0.06	0.05	0.11	—	261	261	0.01	0.01	0.07	263

### 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
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Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.45	4.59	42.6	36.9	0.05	2.25	5.91	8.16	2.07	2.74	4.82	—	5,820	5,820	0.24	0.06	1.12	5,844
2025	2.86	8.35	20.4	29.2	0.04	0.86	0.65	1.50	0.79	0.16	0.94	—	5,214	5,214	0.22	0.10	3.07	5,252
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.10	2.61	23.3	21.6	0.03	1.33	2.47	3.80	1.22	0.99	2.21	—	3,394	3,394	0.14	0.08	0.06	3,410
2025	1.59	1.32	11.8	15.7	0.03	0.47	0.39	0.86	0.43	0.09	0.53	—	3,218	3,218	0.14	0.08	0.05	3,244
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.85	0.72	6.48	6.38	0.01	0.34	0.64	0.98	0.31	0.27	0.58	—	1,095	1,095	0.05	0.02	0.19	1,102
2025	0.81	1.33	5.93	8.07	0.01	0.24	0.19	0.43	0.22	0.05	0.27	—	1,576	1,576	0.07	0.03	0.42	1,588
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.16	0.13	1.18	1.16	< 0.005	0.06	0.12	0.18	0.06	0.05	0.11	—	181	181	0.01	< 0.005	0.03	182
2025	0.15	0.24	1.08	1.47	< 0.005	0.04	0.04	0.08	0.04	0.01	0.05	—	261	261	0.01	0.01	0.07	263

### 3. Construction Emissions Details

#### 3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.35	4.49	42.5	35.3	0.05	2.25	—	2.25	2.07	—	2.07	—	5,529	5,529	0.22	0.04	—	5,548

Animal Care Facility (Construction - Unmitigated) Detailed Report, 1/12/2024

Dust From Material Movement:	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.25	2.33	1.93	< 0.005	0.12	—	0.12	0.11	—	0.11	—	303	303	0.01	< 0.005	—	304
Dust From Material Movement:	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
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	0.43	0.35	< 0.005	0.02	—	0.02	0.02	—	0.02	—	50.2	50.2	< 0.005	< 0.005	—	50.3
Dust From Material Movement:	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
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	0.10	0.09	0.09	1.52	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	259	259	0.01	0.01	1.04	263
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.4	31.4	< 0.005	< 0.005	0.09	32.9
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.2	13.2	< 0.005	< 0.005	0.02	13.4
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.72	1.72	< 0.005	< 0.005	< 0.005	1.80
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.19	2.19	< 0.005	< 0.005	< 0.005	2.22
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
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

### 3.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.02	2.53	23.1	20.6	0.03	1.33	—	1.33	1.22	—	1.22	—	3,134	3,134	0.13	0.03	—	3,144
Dust From Material Movement	—	—	—	—	—	—	2.26	2.26	—	0.94	0.94	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Animal Care Facility (Construction - Unmitigated) Detailed Report, 1/12/2024

Off-Road Equipment	3.02	2.53	23.1	20.6	0.03	1.33	—	1.33	1.22	—	1.22	—	3,134	3,134	0.13	0.03	—	3,144
Dust From Material Movement	—	—	—	—	—	—	2.26	2.26	—	0.94	0.94	—	—	—	—	—	—	—
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	0.33	0.28	2.54	2.26	< 0.005	0.15	—	0.15	0.13	—	0.13	—	343	343	0.01	< 0.005	—	345
Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	0.10	0.10	—	—	—	—	—	—	—
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	0.06	0.05	0.46	0.41	< 0.005	0.03	—	0.03	0.02	—	0.02	—	56.9	56.9	< 0.005	< 0.005	—	57.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	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	0.09	0.08	0.07	1.27	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	216	216	0.01	0.01	0.86	219
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.7	62.7	< 0.005	0.01	0.17	65.8
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	0.08	0.07	0.09	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	198	198	0.01	0.01	0.02	200
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.7	62.7	< 0.005	0.01	< 0.005	65.6
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.04	22.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.87	6.87	< 0.005	< 0.005	0.01	7.20
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	—	3.64	3.64	< 0.005	< 0.005	0.01	3.69
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.19
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

### 3.5. 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-Road Equipment	1.55	1.30	12.2	14.2	0.03	0.54	—	0.54	0.49	—	0.49	—	2,630	2,630	0.11	0.02	—	2,639
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

Animal Care Facility (Construction - Unmitigated) Detailed Report, 1/12/2024

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.52	1.78	< 0.005	0.07	—	0.07	0.06	—	0.06	—	329	329	0.01	< 0.005	—	331
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	0.04	0.03	0.28	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.5	54.5	< 0.005	< 0.005	—	54.7
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	0.13	0.12	0.14	1.53	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	317	317	0.02	0.01	0.04	321
Vendor	0.03	0.01	0.34	0.18	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	282	282	0.02	0.04	0.02	295
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	0.01	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	0.07	40.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.3	35.3	< 0.005	0.01	0.04	37.0
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.66	6.66	< 0.005	< 0.005	0.01	6.75
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.85	5.85	< 0.005	< 0.005	0.01	6.13
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 (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	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
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	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
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	0.61	0.51	4.78	5.98	0.01	0.20	—	0.20	0.18	—	0.18	—	1,112	1,112	0.05	0.01	—	1,116
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	0.11	0.09	0.87	1.09	< 0.005	0.04	—	0.04	0.03	—	0.03	—	184	184	0.01	< 0.005	—	185
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	0.12	0.11	0.11	1.87	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	338	338	0.01	0.01	1.25	343
Vendor	0.03	0.01	0.31	0.17	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	278	278	0.02	0.04	0.78	292
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	0.12	0.10	0.12	1.41	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	310	310	0.01	0.01	0.03	314
Vendor	0.03	0.01	0.32	0.17	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	278	278	0.02	0.04	0.02	291
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	0.05	0.04	0.05	0.63	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	133	133	0.01	0.01	0.23	135
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	117	117	0.01	0.02	0.14	123
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	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.04	22.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	0.02	20.4
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. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



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Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.82	1.09	< 0.005	0.04	—	0.04	0.04	—	0.04	—	166	166	0.01	< 0.005	—	166
Paving	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Paving	—	< 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	0.07	0.07	1.17	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	211	211	0.01	0.01	0.78	215
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.5	21.5	< 0.005	< 0.005	0.04	21.8
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
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

### 3.11. 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	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	5.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.5	19.5	< 0.005	< 0.005	—	19.6
Architectural Coatings	—	0.65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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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	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.23	3.23	< 0.005	< 0.005	—	3.24
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.02	0.37	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	67.1	67.1	< 0.005	< 0.005	0.25	68.1
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.84	6.84	< 0.005	< 0.005	0.01	6.93
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.15
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

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	8/6/2024	9/2/2024	5.00	20.0	—
Grading	Grading	9/3/2024	10/28/2024	5.00	40.0	—
Building Construction	Building Construction	10/29/2024	8/4/2025	5.00	200	—
Paving	Paving	6/10/2025	8/4/2025	5.00	40.0	—
Architectural Coating	Architectural Coating	6/10/2025	8/4/2025	5.00	40.0	—

### 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
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43

Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
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	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	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	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	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
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	2.00	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT

Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	24.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	9.00	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.76	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	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	74,303	24,768	1,516

## 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 (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	70.0	0.00	—
Grading	0.00	0.00	100	0.00	—
Paving	0.00	0.00	0.00	0.00	0.57

### 5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

### 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Medical Office Building	0.00	0%
Parking Lot	0.57	100%

### 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	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.4	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	N/A
-------------------------	-----	-----	-----	-----

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	97.6
AQ-PM	89.5
AQ-DPM	62.5
Drinking Water	99.0
Lead Risk Housing	58.6
Pesticides	0.00
Toxic Releases	73.9
Traffic	91.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.72
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	0.00
Solid Waste	22.1

Sensitive Population	—
Asthma	81.7
Cardio-vascular	88.5
Low Birth Weights	9.19
Socioeconomic Factor Indicators	—
Education	93.2
Housing	27.2
Linguistic	80.2
Poverty	84.3
Unemployment	17.1

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	10.00898242
Employed	13.05017323
Median HI	23.4826126
Education	—
Bachelor's or higher	2.207108944
High school enrollment	100
Preschool enrollment	24.79147953
Transportation	—
Auto Access	73.42486847
Active commuting	49.09534197
Social	—
2-parent households	44.61696394

Voting	11.76697036
Neighborhood	—
Alcohol availability	36.54561786
Park access	2.194276915
Retail density	44.00102656
Supermarket access	45.81034262
Tree canopy	13.85859104
Housing	—
Homeownership	59.50211728
Housing habitability	22.30206596
Low-inc homeowner severe housing cost burden	2.053124599
Low-inc renter severe housing cost burden	66.80354164
Uncrowded housing	14.8209932
Health Outcomes	—
Insured adults	3.849608623
Arthritis	26.6
Asthma ER Admissions	42.9
High Blood Pressure	42.5
Cancer (excluding skin)	77.2
Asthma	5.2
Coronary Heart Disease	25.9
Chronic Obstructive Pulmonary Disease	9.6
Diagnosed Diabetes	10.1
Life Expectancy at Birth	10.7
Cognitively Disabled	14.5
Physically Disabled	39.7
Heart Attack ER Admissions	32.2

Mental Health Not Good	6.5
Chronic Kidney Disease	27.1
Obesity	13.0
Pedestrian Injuries	80.1
Physical Health Not Good	7.3
Stroke	15.1
Health Risk Behaviors	—
Binge Drinking	73.8
Current Smoker	8.2
No Leisure Time for Physical Activity	9.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	72.4
Elderly	67.6
English Speaking	23.2
Foreign-born	80.1
Outdoor Workers	24.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	57.1
Traffic Density	80.7
Traffic Access	23.0
Other Indices	—
Hardship	86.6
Other Decision Support	—
2016 Voting	28.3

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	77.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.  
 b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Land Use	Total Project Area is 6.00 acres
Construction: Construction Phases	Construction will occur over a 12-month period beginning in August 2024
Construction: Off-Road Equipment	Crawler Tractors used in lieu of Tractors/Loaders/Backhoes
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	Rule 1113
Operations: Vehicle Data	Trip rates based on information provided in the Traffic analysis
Operations: Fleet Mix	Analysis assumes that all trucks are 2-axle



Operations: Energy Use	Energy usage based on information provided by the Project team
Operations: Water and Waste Water	Total water usage based on information provided by the Project Team

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**APPENDIX 4.2:**  
**CALEEMOD OPERATIONAL EMISSIONS MODEL OUTPUTS**

# Animal Care Facility (Operations) Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Animal Care Facility (Operations)
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	6.80
Location	34.0703776, -117.4049997
County	San Bernardino-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5334
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

## 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
Medical Office Building	74.4	1000sqft	5.43	74,391	162,345	0.00	—	—

Parking Lot	144	Space	0.57	0.00	0.00	0.00	—	—
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### 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.	3.61	5.09	7.74	19.3	0.04	0.24	2.69	2.93	0.24	0.68	0.92	437	4,079	4,516	43.8	0.11	13.2	5,659
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.95	4.47	7.80	13.9	0.03	0.24	2.69	2.93	0.24	0.68	0.92	437	3,868	4,304	43.9	0.12	2.19	5,437
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	3.54	2.09	13.3	0.03	0.05	2.68	2.73	0.05	0.68	0.73	437	3,249	3,686	43.8	0.11	6.79	4,822
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.65	0.38	2.42	0.01	0.01	0.49	0.50	0.01	0.12	0.13	72.3	538	610	7.26	0.02	1.12	798
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	—	—	—	—	Yes	—	—	—	—	—	—	—	—

## 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	1.40	1.28	1.04	12.2	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,924	2,924	0.11	0.09	11.3	2,965
Area	0.58	2.32	0.03	3.24	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	366	366	0.03	< 0.005	—	368
Water	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Waste	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Stationary	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Total	3.61	5.09	7.74	19.3	0.04	0.24	2.69	2.93	0.24	0.68	0.92	437	4,079	4,516	43.8	0.11	13.2	5,659
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.31	1.19	1.13	10.1	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,726	2,726	0.12	0.10	0.29	2,758
Area	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	366	366	0.03	< 0.005	—	368
Water	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Waste	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Stationary	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Total	2.95	4.47	7.80	13.9	0.03	0.24	2.69	2.93	0.24	0.68	0.92	437	3,868	4,304	43.9	0.12	2.19	5,437
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	1.30	1.19	1.15	10.5	0.03	0.02	2.68	2.70	0.02	0.68	0.70	—	2,757	2,757	0.12	0.10	4.89	2,794
Area	0.39	2.15	0.02	2.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.11	9.11	< 0.005	< 0.005	—	9.15
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	366	366	0.03	< 0.005	—	368
Water	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Waste	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Stationary	0.22	0.20	0.91	0.52	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	105	105	< 0.005	< 0.005	0.00	105
Total	1.92	3.54	2.09	13.3	0.03	0.05	2.68	2.73	0.05	0.68	0.73	437	3,249	3,686	43.8	0.11	6.79	4,822
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.24	0.22	0.21	1.92	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	456	456	0.02	0.02	0.81	462
Area	0.07	0.39	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.51	1.51	< 0.005	< 0.005	—	1.51
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	60.6	60.6	0.01	< 0.005	—	60.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.63	2.14	2.77	0.07	< 0.005	—	4.87
Waste	—	—	—	—	—	—	—	—	—	—	—	71.7	0.00	71.7	7.16	0.00	—	251
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Stationary	0.04	0.04	0.17	0.10	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	17.3	17.3	< 0.005	< 0.005	0.00	17.4
Total	0.35	0.65	0.38	2.42	0.01	0.01	0.49	0.50	0.01	0.12	0.13	72.3	538	610	7.26	0.02	1.12	798

## 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
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	1.40	1.28	1.04	12.2	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,924	2,924	0.11	0.09	11.3	2,965
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
Total	1.40	1.28	1.04	12.2	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,924	2,924	0.11	0.09	11.3	2,965
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	1.31	1.19	1.13	10.1	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,726	2,726	0.12	0.10	0.29	2,758
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
Total	1.31	1.19	1.13	10.1	0.03	0.02	2.69	2.71	0.02	0.68	0.70	—	2,726	2,726	0.12	0.10	0.29	2,758
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	0.24	0.22	0.21	1.92	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	456	456	0.02	0.02	0.81	462
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
Total	0.24	0.22	0.21	1.92	< 0.005	< 0.005	0.49	0.49	< 0.005	0.12	0.13	—	456	456	0.02	0.02	0.81	462

## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	345	345	0.03	< 0.005	—	347
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	20.6	20.6	< 0.005	< 0.005	—	20.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	345	345	0.03	< 0.005	—	347
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	20.6	20.6	< 0.005	< 0.005	—	20.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	57.1	57.1	0.01	< 0.005	—	57.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.42	3.42	< 0.005	< 0.005	—	3.44
Total	—	—	—	—	—	—	—	—	—	—	—	—	60.6	60.6	0.01	< 0.005	—	60.9

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Medical Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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

### 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	—	1.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.58	0.53	0.03	3.24	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Total	0.58	2.32	0.03	3.24	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	0.07	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.51	1.51	< 0.005	< 0.005	—	1.51
Total	0.07	0.39	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.51	1.51	< 0.005	< 0.005	—	1.51



## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.83	12.9	16.7	0.39	0.01	—	29.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	0.63	2.14	2.77	0.07	< 0.005	—	4.87
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.63	2.14	2.77	0.07	< 0.005	—	4.87

## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	433	0.00	433	43.3	0.00	—	1,515
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	71.7	0.00	71.7	7.16	0.00	—	251
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	71.7	0.00	71.7	7.16	0.00	—	251

## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.90	1.90
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.31	0.31

## 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Total	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Total	1.64	1.49	6.67	3.80	0.01	0.22	0.00	0.22	0.22	0.00	0.22	0.00	763	763	0.03	0.01	0.00	766
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.04	0.17	0.10	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	17.3	17.3	< 0.005	< 0.005	0.00	17.4
Total	0.04	0.04	0.17	0.10	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	17.3	17.3	< 0.005	< 0.005	0.00	17.4

### 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 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
Medical Office Building	318	318	318	116,070	3,790	3,790	3,790	1,383,369
Parking Lot	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	111,587	37,196	1,490

#### 5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00



Summer Days	day/yr	250
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### 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)
Medical Office Building	363,898	346	0.0330	0.0040	0.00
Parking Lot	21,750	346	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)
Medical Office Building	2,000,000	0.00
Parking Lot	0.00	0.00

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Medical Office Building	803	—
Parking Lot	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
Medical Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.45	0.60	0.00	1.00
Medical Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

### 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
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### 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
Emergency Generator	Diesel	1.00	1.00	50.0	909	0.73

#### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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### 5.17. User Defined

Equipment Type	Fuel Type
—	—

### 5.18. Vegetation

#### 5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.4	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	97.6
AQ-PM	89.5
AQ-DPM	62.5
Drinking Water	99.0
Lead Risk Housing	58.6
Pesticides	0.00
Toxic Releases	73.9
Traffic	91.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.72
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	0.00

Solid Waste	22.1
Sensitive Population	—
Asthma	81.7
Cardio-vascular	88.5
Low Birth Weights	9.19
Socioeconomic Factor Indicators	—
Education	93.2
Housing	27.2
Linguistic	80.2
Poverty	84.3
Unemployment	17.1

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	10.00898242
Employed	13.05017323
Median HI	23.4826126
Education	—
Bachelor's or higher	2.207108944
High school enrollment	100
Preschool enrollment	24.79147953
Transportation	—
Auto Access	73.42486847
Active commuting	49.09534197
Social	—

2-parent households	44.61696394
Voting	11.76697036
Neighborhood	—
Alcohol availability	36.54561786
Park access	2.194276915
Retail density	44.00102656
Supermarket access	45.81034262
Tree canopy	13.85859104
Housing	—
Homeownership	59.50211728
Housing habitability	22.30206596
Low-inc homeowner severe housing cost burden	2.053124599
Low-inc renter severe housing cost burden	66.80354164
Uncrowded housing	14.8209932
Health Outcomes	—
Insured adults	3.849608623
Arthritis	26.6
Asthma ER Admissions	42.9
High Blood Pressure	42.5
Cancer (excluding skin)	77.2
Asthma	5.2
Coronary Heart Disease	25.9
Chronic Obstructive Pulmonary Disease	9.6
Diagnosed Diabetes	10.1
Life Expectancy at Birth	10.7
Cognitively Disabled	14.5
Physically Disabled	39.7

Heart Attack ER Admissions	32.2
Mental Health Not Good	6.5
Chronic Kidney Disease	27.1
Obesity	13.0
Pedestrian Injuries	80.1
Physical Health Not Good	7.3
Stroke	15.1
Health Risk Behaviors	—
Binge Drinking	73.8
Current Smoker	8.2
No Leisure Time for Physical Activity	9.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	72.4
Elderly	67.6
English Speaking	23.2
Foreign-born	80.1
Outdoor Workers	24.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	57.1
Traffic Density	80.7
Traffic Access	23.0
Other Indices	—
Hardship	86.6
Other Decision Support	—
2016 Voting	28.3



### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	77.0
Healthy Places Index Score for Project Location (b)	10.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Land Use	Total Project Area is 6.00 acres
Construction: Construction Phases	Phase 1 construction will occur over a 12-month period beginning in August 2024
Construction: Off-Road Equipment	Crawler Tractors used in lieu of Tractors/Loaders/Backhoes
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	Rule 1113
Operations: Vehicle Data	Trip rates based on information provided in the Traffic analysis
Operations: Fleet Mix	Analysis assumes that all trucks are 2-axle

Operations: Energy Use	Energy usage based on information provided by the Project team. Based on Client provided data, the Project will not utilize natural gas.
Operations: Water and Waste Water	Total water usage based on information provided by the Project Team

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**APPENDIX 4.3:**

**EMFAC2021**

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: San Bernardino (SC)

Calendar Year: 2024

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
San Bernardino (SC)	2024	HHDT	Aggregate	Aggregate	Gasoline	5.565987525	65632.20065	17.55506745	17555.06745	100020707.1	65632.20065	602650321.4	6.03	HHDT
San Bernardino (SC)	2024	HHDT	Aggregate	Aggregate	Diesel	14231.95658	551042326.4	92002.9329	92002932.9		551042326.4			
San Bernardino (SC)	2024	HHDT	Aggregate	Aggregate	Electricity	48.62871821	1514395.863	0	0		1514395.863			
San Bernardino (SC)	2024	HHDT	Aggregate	Aggregate	Natural Gas	2469.470738	50027966.96	8000.219124	8000219.124		50027966.96			
San Bernardino (SC)	2024	LDA	Aggregate	Aggregate	Gasoline	459317.1397	6998203711	235268.3364	235268336.4	239249877	6998203711	7553967064	31.57	LDA
San Bernardino (SC)	2024	LDA	Aggregate	Aggregate	Diesel	1047.589492	13077704.42	304.6940031	304694.0031		13077704.42			
San Bernardino (SC)	2024	LDA	Aggregate	Aggregate	Electricity	19287.2826	319989461.8	0	0		319989461.8			
San Bernardino (SC)	2024	LDA	Aggregate	Aggregate	Plug-in Hybric	12500.45848	222696187.4	3676.846561	3676846.561		222696187.4			
San Bernardino (SC)	2024	LDT1	Aggregate	Aggregate	Gasoline	40725.35771	490115573.8	19992.18901	19992189.01	20008289.61	490115573.8	492044217.3	24.59	LDT1
San Bernardino (SC)	2024	LDT1	Aggregate	Aggregate	Diesel	10.72175816	55107.22369	2.270239442	2270.239442		55107.22369			
San Bernardino (SC)	2024	LDT1	Aggregate	Aggregate	Electricity	58.29951204	952224.2422	0	0		952224.2422			
San Bernardino (SC)	2024	LDT1	Aggregate	Aggregate	Plug-in Hybric	51.79076029	921312.0144	13.83036618	13830.36618		921312.0144			
San Bernardino (SC)	2024	LDT2	Aggregate	Aggregate	Gasoline	192654.7494	2757561092	113913.4167	113913416.7	114588210.3	2757561092	2808082925	24.51	LDT2
San Bernardino (SC)	2024	LDT2	Aggregate	Aggregate	Diesel	520.896721	8078084.967	243.685157	243685.157		8078084.967			
San Bernardino (SC)	2024	LDT2	Aggregate	Aggregate	Electricity	1199.246991	15005145.59	0	0		15005145.59			
San Bernardino (SC)	2024	LDT2	Aggregate	Aggregate	Plug-in Hybric	1594.625518	27438602.16	431.1084869	431108.4869		27438602.16			
San Bernardino (SC)	2024	LHDT1	Aggregate	Aggregate	Gasoline	17179.49082	208481689.1	15346.53488	15346534.88	22275281.21	208481689.1	352257356.3	15.81	LHDT1
San Bernardino (SC)	2024	LHDT1	Aggregate	Aggregate	Diesel	11382.09786	142493007.5	6928.746332	6928746.332		142493007.5			
San Bernardino (SC)	2024	LHDT1	Aggregate	Aggregate	Electricity	52.7403112	1282659.757	0	0		1282659.757			
San Bernardino (SC)	2024	LHDT2	Aggregate	Aggregate	Gasoline	2883.702401	33531637.34	2787.053647	2787053.647	6339312.387	33531637.34	94885856.62	14.97	LHDT2
San Bernardino (SC)	2024	LHDT2	Aggregate	Aggregate	Diesel	4825.532255	61039665.72	3552.258741	3552258.741		61039665.72			
San Bernardino (SC)	2024	LHDT2	Aggregate	Aggregate	Electricity	13.65084178	314553.5538	0	0		314553.5538			
San Bernardino (SC)	2024	MCY	Aggregate	Aggregate	Gasoline	20751.92893	42918713.78	1022.38967	1022389.67	1022389.67	42918713.78	42918713.78	41.98	MCY
San Bernardino (SC)	2024	MDV	Aggregate	Aggregate	Gasoline	147141.1277	2023247300	102986.2138	102986213.8	104408638.9	2023247300	2084683084	19.97	MDV
San Bernardino (SC)	2024	MDV	Aggregate	Aggregate	Diesel	1910.88318	26864024.48	1129.452064	1129452.064		26864024.48			
San Bernardino (SC)	2024	MDV	Aggregate	Aggregate	Electricity	1327.48959	16604056.61	0	0		16604056.61			
San Bernardino (SC)	2024	MDV	Aggregate	Aggregate	Plug-in Hybric	1028.690257	17967703.21	292.9729803	292972.9803		17967703.21			
San Bernardino (SC)	2024	MH	Aggregate	Aggregate	Gasoline	3401.970527	9880592.437	2022.448199	2022448.199	2408282.462	9880592.437	13826961.78	5.74	MH
San Bernardino (SC)	2024	MH	Aggregate	Aggregate	Diesel	1336.39751	3946369.345	385.834263	385834.263		3946369.345			
San Bernardino (SC)	2024	MHDT	Aggregate	Aggregate	Gasoline	1460.602089	25635396.94	4923.389143	4923389.143	27935606.17	25635396.94	232314319.3	8.32	MHDT
San Bernardino (SC)	2024	MHDT	Aggregate	Aggregate	Diesel	14946.4736	202976493.9	22669.39063	22669390.63		202976493.9			
San Bernardino (SC)	2024	MHDT	Aggregate	Aggregate	Electricity	46.13645649	737631.427	0	0		737631.427			
San Bernardino (SC)	2024	MHDT	Aggregate	Aggregate	Natural Gas	195.6757264	2964797.055	342.8264	342826.4		2964797.055			
San Bernardino (SC)	2024	OBUS	Aggregate	Aggregate	Gasoline	370.0192137	5168863.655	1012.113043	1012113.043	1678725.582	5168863.655	10209810.25	6.08	OBUS
San Bernardino (SC)	2024	OBUS	Aggregate	Aggregate	Diesel	210.5519789	4437514.629	600.0645542	600064.5542		4437514.629			
San Bernardino (SC)	2024	OBUS	Aggregate	Aggregate	Electricity	0.809761934	21328.84548	0	0		21328.84548			
San Bernardino (SC)	2024	OBUS	Aggregate	Aggregate	Natural Gas	32.78528924	582103.1254	66.54798496	66547.98496		582103.1254			
San Bernardino (SC)	2024	SBUS	Aggregate	Aggregate	Gasoline	297.8692006	4585227.496	511.4311108	511431.1108	1619236.79	4585227.496	10410441.24	6.43	SBUS
San Bernardino (SC)	2024	SBUS	Aggregate	Aggregate	Diesel	373.2941498	2533365.656	344.1451415	344145.1415		2533365.656			
San Bernardino (SC)	2024	SBUS	Aggregate	Aggregate	Electricity	2.213199982	18416.70512	0	0		18416.70512			
San Bernardino (SC)	2024	SBUS	Aggregate	Aggregate	Natural Gas	398.7600331	3273431.384	763.6605376	763660.5376		3273431.384			
San Bernardino (SC)	2024	UBUS	Aggregate	Aggregate	Gasoline	54.72012078	1718010.1	132.909217	132909.217	2702138.875	1718010.1	13120370.38	4.86	UBUS
San Bernardino (SC)	2024	UBUS	Aggregate	Aggregate	Diesel	4.556959009	147096.8417	14.21429006	14214.29006		147096.8417			
San Bernardino (SC)	2024	UBUS	Aggregate	Aggregate	Electricity	7.328344802	363414.4038	0	0		363414.4038			
San Bernardino (SC)	2024	UBUS	Aggregate	Aggregate	Natural Gas	243.3602145	10891849.03	2555.015368	2555015.368		10891849.03			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: San Bernardino (SC)

Calendar Year: 2025

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
San Bernardino (SC)	2025	HHDT	Aggregate	Aggregate	Gasoline	3.869766832	57951.49636	14.57765186	14577.65186	100557864.6	57951.49636	616408385	6.13	HHDT
San Bernardino (SC)	2025	HHDT	Aggregate	Aggregate	Diesel	14693.60242	561322084.2	92421.1885	92421188.5		561322084.2			
San Bernardino (SC)	2025	HHDT	Aggregate	Aggregate	Electricity	109.5985203	3559710.012	0	0		3559710.012			
San Bernardino (SC)	2025	HHDT	Aggregate	Aggregate	Natural Gas	2560.5176	51468639.3	8122.098441	8122098.441		51468639.3			
San Bernardino (SC)	2025	LDA	Aggregate	Aggregate	Gasoline	457374.7047	6944290025	228752.9463	228752946.3	232899854.5	6944290025	7584900962	32.57	LDA
San Bernardino (SC)	2025	LDA	Aggregate	Aggregate	Diesel	986.5858319	12083220.19	278.7664269	278766.4269		12083220.19			
San Bernardino (SC)	2025	LDA	Aggregate	Aggregate	Electricity	22921.29943	388499503.9	0	0		388499503.9			
San Bernardino (SC)	2025	LDA	Aggregate	Aggregate	Plug-in Hybric	13621.71468	240028212.7	3868.141748	3868141.748		240028212.7			
San Bernardino (SC)	2025	LDT1	Aggregate	Aggregate	Gasoline	39862.49619	480945552.2	19239.37501	19239375.01	19260687.7	480945552.2	483717360.2	25.11	LDT1
San Bernardino (SC)	2025	LDT1	Aggregate	Aggregate	Diesel	9.62153332	48187.89915	1.982153486	1982.153486		48187.89915			
San Bernardino (SC)	2025	LDT1	Aggregate	Aggregate	Electricity	81.74409231	1398094.568	0	0		1398094.568			
San Bernardino (SC)	2025	LDT1	Aggregate	Aggregate	Plug-in Hybric	75.22656194	1325525.512	19.33053631	19330.53631		1325525.512			
San Bernardino (SC)	2025	LDT2	Aggregate	Aggregate	Gasoline	197589.8024	2830132229	113820.9189	113820918.9	114578307.3	2830132229	2891787665	25.24	LDT2
San Bernardino (SC)	2025	LDT2	Aggregate	Aggregate	Diesel	559.2848358	8632615.354	254.3461398	254346.1398		8632615.354			
San Bernardino (SC)	2025	LDT2	Aggregate	Aggregate	Electricity	1637.444663	20185542.74	0	0		20185542.74			
San Bernardino (SC)	2025	LDT2	Aggregate	Aggregate	Plug-in Hybric	1934.989022	32837278.29	503.0423007	503042.3007		32837278.29			
San Bernardino (SC)	2025	LHDT1	Aggregate	Aggregate	Gasoline	16963.11371	207137413	14862.50039	14862500.39	21735688.1	207137413	352468216.4	16.22	LHDT1
San Bernardino (SC)	2025	LHDT1	Aggregate	Aggregate	Diesel	11403.02981	142011594.7	6873.187714	6873187.714		142011594.7			
San Bernardino (SC)	2025	LHDT1	Aggregate	Aggregate	Electricity	147.3648902	3319208.717	0	0		3319208.717			
San Bernardino (SC)	2025	LHDT2	Aggregate	Aggregate	Gasoline	2823.949841	32642813.3	2664.783044	2664783.044	6207792.739	32642813.3	94768430.93	15.27	LHDT2
San Bernardino (SC)	2025	LHDT2	Aggregate	Aggregate	Diesel	4888.887446	61320690.9	3543.009695	3543009.695		61320690.9			
San Bernardino (SC)	2025	LHDT2	Aggregate	Aggregate	Electricity	37.58571717	804926.7211	0	0		804926.7211			
San Bernardino (SC)	2025	MCY	Aggregate	Aggregate	Gasoline	20826.96994	42778396.38	1015.020429	1015020.429	1015020.429	42778396.38	42778396.38	42.15	MCY
San Bernardino (SC)	2025	MDV	Aggregate	Aggregate	Gasoline	147056.3511	2024245890	100540.1081	100540108.1	101976937.9	2024245890	2094722320	20.54	MDV
San Bernardino (SC)	2025	MDV	Aggregate	Aggregate	Diesel	1906.902909	26501944.47	1093.419877	1093419.877		26501944.47			
San Bernardino (SC)	2025	MDV	Aggregate	Aggregate	Electricity	1802.834782	22197395.58	0	0		22197395.58			
San Bernardino (SC)	2025	MDV	Aggregate	Aggregate	Plug-in Hybric	1256.812117	21777090.21	343.4098652	343409.8652		21777090.21			
San Bernardino (SC)	2025	MH	Aggregate	Aggregate	Gasoline	3227.585522	9326090.143	1908.65082	1908650.82	2288153.951	9326090.143	13206274.99	5.77	MH
San Bernardino (SC)	2025	MH	Aggregate	Aggregate	Diesel	1329.243498	3880184.844	379.5031319	379503.1319		3880184.844			
San Bernardino (SC)	2025	MHDT	Aggregate	Aggregate	Gasoline	1427.423114	25123006.81	4769.346227	4769346.227	27971880.02	25123006.81	235891698	8.43	MHDT
San Bernardino (SC)	2025	MHDT	Aggregate	Aggregate	Diesel	15347.54129	205505209.6	22845.95176	22845951.76		205505209.6			
San Bernardino (SC)	2025	MHDT	Aggregate	Aggregate	Electricity	133.1585562	2176108.516	0	0		2176108.516			
San Bernardino (SC)	2025	MHDT	Aggregate	Aggregate	Natural Gas	208.419151	3087373.059	356.5820306	356582.0306		3087373.059			
San Bernardino (SC)	2025	OBUS	Aggregate	Aggregate	Gasoline	358.2884481	4914991.263	953.0537711	953053.7711	1617074.812	4914991.263	10020066.31	6.20	OBUS
San Bernardino (SC)	2025	OBUS	Aggregate	Aggregate	Diesel	215.4704252	4443326.841	595.42053	595420.53		4443326.841			
San Bernardino (SC)	2025	OBUS	Aggregate	Aggregate	Electricity	1.990200949	51357.6674	0	0		51357.6674			
San Bernardino (SC)	2025	OBUS	Aggregate	Aggregate	Natural Gas	34.88313202	610390.5394	68.6005113	68600.5113		610390.5394			
San Bernardino (SC)	2025	SBUS	Aggregate	Aggregate	Gasoline	300.4577721	4618641.589	513.7556449	513755.6449	1621879.65	4618641.589	10451921.53	6.44	SBUS
San Bernardino (SC)	2025	SBUS	Aggregate	Aggregate	Diesel	363.8707141	2448867.744	331.7738776	331773.8776		2448867.744			
San Bernardino (SC)	2025	SBUS	Aggregate	Aggregate	Electricity	4.690534617	43259.77988	0	0		43259.77988			
San Bernardino (SC)	2025	SBUS	Aggregate	Aggregate	Natural Gas	411.4766102	3341152.413	776.3501279	776350.1279		3341152.413			
San Bernardino (SC)	2025	UBUS	Aggregate	Aggregate	Gasoline	54.83056931	1721477.777	132.9410538	132941.0538	2706050.73	1721477.777	13146852.88	4.86	UBUS
San Bernardino (SC)	2025	UBUS	Aggregate	Aggregate	Diesel	4.529432466	146321.6342	14.16487362	14164.87362		146321.6342			
San Bernardino (SC)	2025	UBUS	Aggregate	Aggregate	Electricity	7.409987909	367712.3818	0	0		367712.3818			
San Bernardino (SC)	2025	UBUS	Aggregate	Aggregate	Natural Gas	243.8212922	10911341.08	2558.944803	2558944.803		10911341.08			

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: San Bernardino (SC)

Calendar Year: 2026

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
San Bernardino (SC)	2026	HHDT	Aggregate	Aggregate	Gasoline	2.628638455	53073.45767	12.45679632	12456.79632	101031374.2	53073.45767	630458156.3	6.24	HHDT
San Bernardino (SC)	2026	HHDT	Aggregate	Aggregate	Diesel	15084.77036	571364188.1	92762.51657	92762516.57		571364188.1			
San Bernardino (SC)	2026	HHDT	Aggregate	Aggregate	Electricity	191.0683418	6231839.702	0	0		6231839.702			
San Bernardino (SC)	2026	HHDT	Aggregate	Aggregate	Natural Gas	2643.959607	52809055.07	8256.400839	8256400.839		52809055.07			
San Bernardino (SC)	2026	LDA	Aggregate	Aggregate	Gasoline	456254.7841	6896335760	222612.7065	222612706.5	226856963.4	6896335760	7593916416	33.47	LDA
San Bernardino (SC)	2026	LDA	Aggregate	Aggregate	Diesel	917.7888375	11101933.23	253.3742308	253374.2308		11101933.23			
San Bernardino (SC)	2026	LDA	Aggregate	Aggregate	Electricity	26082.82543	434048282.4	0	0		434048282.4			
San Bernardino (SC)	2026	LDA	Aggregate	Aggregate	Plug-in Hybric	14570.87312	252430440	3990.882677	3990882.677		252430440			
San Bernardino (SC)	2026	LDT1	Aggregate	Aggregate	Gasoline	39063.9999	471926165.7	18518.8563	18518856.3	18545335.61	471926165.7	475586285	25.64	LDT1
San Bernardino (SC)	2026	LDT1	Aggregate	Aggregate	Diesel	7.517030094	37288.1153	1.521007521	1521.007521		37288.1153			
San Bernardino (SC)	2026	LDT1	Aggregate	Aggregate	Electricity	110.0966514	1882907.576	0	0		1882907.576			
San Bernardino (SC)	2026	LDT1	Aggregate	Aggregate	Plug-in Hybric	100.2350808	1739923.603	24.95829807	24958.29807		1739923.603			
San Bernardino (SC)	2026	LDT2	Aggregate	Aggregate	Gasoline	202612.9731	2895206514	113581.5304	113581530.4	114411354.5	2895206514	2967001914	25.93	LDT2
San Bernardino (SC)	2026	LDT2	Aggregate	Aggregate	Diesel	596.9953934	9128965.905	263.4746007	263474.6007		9128965.905			
San Bernardino (SC)	2026	LDT2	Aggregate	Aggregate	Electricity	2064.91584	25042746.04	0	0		25042746.04			
San Bernardino (SC)	2026	LDT2	Aggregate	Aggregate	Plug-in Hybric	2256.649793	37623687.27	566.3495299	566349.5299		37623687.27			
San Bernardino (SC)	2026	LHDT1	Aggregate	Aggregate	Gasoline	16791.83447	205879695.8	14441.94959	14441949.59	21248320.96	205879695.8	353159335.4	16.62	LHDT1
San Bernardino (SC)	2026	LHDT1	Aggregate	Aggregate	Diesel	11393.65177	141208644.1	6806.371371	6806371.371		141208644.1			
San Bernardino (SC)	2026	LHDT1	Aggregate	Aggregate	Electricity	282.094588	6070995.495	0	0		6070995.495			
San Bernardino (SC)	2026	LHDT2	Aggregate	Aggregate	Gasoline	2763.224246	31789315.51	2551.776241	2551776.241	6078532.361	31789315.51	94692302.33	15.58	LHDT2
San Bernardino (SC)	2026	LHDT2	Aggregate	Aggregate	Diesel	4937.57725	61431305.96	3526.75612	3526756.12		61431305.96			
San Bernardino (SC)	2026	LHDT2	Aggregate	Aggregate	Electricity	71.81390811	1471680.856	0	0		1471680.856			
San Bernardino (SC)	2026	MCY	Aggregate	Aggregate	Gasoline	20884.25022	42672552.1	1008.912062	1008912.062	1008912.062	42672552.1	42672552.1	42.30	MCY
San Bernardino (SC)	2026	MDV	Aggregate	Aggregate	Gasoline	147189.0217	2024147550	98179.05802	98179058.02	99622974.81	2024147550	2102733602	21.11	MDV
San Bernardino (SC)	2026	MDV	Aggregate	Aggregate	Diesel	1900.727125	26099669.32	1057.096105	1057096.105		26099669.32			
San Bernardino (SC)	2026	MDV	Aggregate	Aggregate	Electricity	2262.574859	27390239.06	0	0		27390239.06			
San Bernardino (SC)	2026	MDV	Aggregate	Aggregate	Plug-in Hybric	1469.974449	25096144.37	386.8206846	386820.6846		25096144.37			
San Bernardino (SC)	2026	MH	Aggregate	Aggregate	Gasoline	3064.468567	8841690.446	1808.521514	1808521.514	2182262.779	8841690.446	12660057.27	5.80	MH
San Bernardino (SC)	2026	MH	Aggregate	Aggregate	Diesel	1320.026239	3818366.824	373.741265	373741.265		3818366.824			
San Bernardino (SC)	2026	MHDT	Aggregate	Aggregate	Gasoline	1396.239062	24637228.38	4623.164673	4623164.673	27979473.63	24637228.38	239595817.9	8.56	MHDT
San Bernardino (SC)	2026	MHDT	Aggregate	Aggregate	Diesel	15710.20603	207778172.1	22987.0077	22987007.7		207778172.1			
San Bernardino (SC)	2026	MHDT	Aggregate	Aggregate	Electricity	245.8765864	3986030.311	0	0		3986030.311			
San Bernardino (SC)	2026	MHDT	Aggregate	Aggregate	Natural Gas	220.2089686	3194387.108	369.301261	369301.261		3194387.108			
San Bernardino (SC)	2026	OBUS	Aggregate	Aggregate	Gasoline	348.5150855	4690908.737	900.7903863	900790.3863	1562356.534	4690908.737	9864938.097	6.31	OBUS
San Bernardino (SC)	2026	OBUS	Aggregate	Aggregate	Diesel	220.037016	4452651.142	591.0950525	591095.0525		4452651.142			
San Bernardino (SC)	2026	OBUS	Aggregate	Aggregate	Electricity	3.340971814	84707.71155	0	0		84707.71155			
San Bernardino (SC)	2026	OBUS	Aggregate	Aggregate	Natural Gas	36.78806859	636670.5066	70.47109481	70471.09481		636670.5066			
San Bernardino (SC)	2026	SBUS	Aggregate	Aggregate	Gasoline	302.8964194	4650679.453	515.9474333	515947.4333	1623426.128	4650679.453	10493584.34	6.46	SBUS
San Bernardino (SC)	2026	SBUS	Aggregate	Aggregate	Diesel	353.6259778	2363658.224	319.3160993	319316.0993		2363658.224			
San Bernardino (SC)	2026	SBUS	Aggregate	Aggregate	Electricity	8.074559241	74633.99395	0	0		74633.99395			
San Bernardino (SC)	2026	SBUS	Aggregate	Aggregate	Natural Gas	423.8773853	3404612.669	788.1625951	788162.5951		3404612.669			
San Bernardino (SC)	2026	UBUS	Aggregate	Aggregate	Gasoline	54.94101785	1724945.454	133.3695945	133369.5945	2613738.149	1724945.454	13173335.38	5.04	UBUS
San Bernardino (SC)	2026	UBUS	Aggregate	Aggregate	Diesel	4.529432466	146321.6342	14.16487264	14164.87264		146321.6342			
San Bernardino (SC)	2026	UBUS	Aggregate	Aggregate	Electricity	11.78176765	625132.1918	0	0		625132.1918			
San Bernardino (SC)	2026	UBUS	Aggregate	Aggregate	Natural Gas	239.9647068	10676936.1	2466.203682	2466203.682		10676936.1			

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