Discovery Village

ENERGY ANALYSIS

CITY OF MURRIETA

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TABLE OF CONTENTS

APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

%	Percent
(1)	Reference
AQIA	Discovery Village Air Quality Impact Analysis
BTU	British Thermal Unit
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
CTA	core transport agents
EIA	Energy Information Administration
EMFAC	EMissions FACtor model
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gas
IEPR	Integrated Energy Policy Report
ISO	Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LDA	light-duty-auto vehicles
MHDT	medium-heavy duty trucks
MMcfd	million cubic feet per day
MPOs	Metropolitan Planning Organizations
Project	Discovery Village Project
PV	photovoltaic
RPS	California's Renewable Portfolio Standard
SB	Senate Bill
SCE	Southern California Edison
TEA-21	The Transportation Equity Act for the 21st Century
U.S.	United States
VMT	vehicle miles traveled

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EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *Discovery Village Energy Analysis* is summarized below based on the significance criteria in Section 3 of this report as stated in Appendix G of the 2023 California Environmental Quality Act (CEQA) Statute and Guidelines (*CEQA Guidelines*) and informed by Appendix F of the 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?	4.6	*Less Than Significant*	*n/a*
Energy Impact #2: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	4.6	*Less Than Significant*	*n/a*

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 21st Century (TEA-21)
- Integrated Energy Policy Report (IEPR)
- State of California Energy Plan
- California Code Title 24, Part 6, Energy Efficiency Standards – Energy Code
- California Code Title 24, Part 11, Green Building Standards - 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)

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1 INTRODUCTION

This report presents the results of the energy analysis prepared by Urban Crossroads, Inc., for the proposed Discovery Village Project (Project). The purpose of this report is to quantify anticipated energy demand associated with construction and operation of the proposed Project, determine if the usage of the energy is inefficient, atypical, or wasteful for the land use type.

1.1 SITE LOCATION

This report presents the results of the energy analysis (EA) for the proposed Discovery Village ("Project"), which is located east of Interstate 215 (I-215), at the southwest corner of Whitewood Road and Baxter Road in the City of Murrieta. The Project's location in relation to the surrounding area is shown on Exhibit 1-A.

The Project site is surrounded by residential land uses, health care land uses, commercial land uses, and open space, with the nearest residential land use is north of the Project site across Baxter Road. Residential land uses are located to the north and northwest across Baxter Road. The Loma Linda University Heath facility and Compass Health Rehabilitation are located to the northwest and southeast of the Project site respectively. The recently adopted General Plan designates the eastern portion of the Project site for "Multiple-Family Residential (10.1-30 dwelling units per acre)," and designates the western portion of the Project site located west of the future alignment of Warm Springs Road for "Innovation (0.6-2.5 FAR)" land uses.

The eastern portion of the Project site is zoned MF-2 (Multi-Family Residential 2) District, with an allowable density range of 15.1 to 18 dwelling units per net acre. The western portion of the size is zoned "Innovation"

1.2 PROJECT DESCRIPTION

The current Project involves consideration of Tentative Tract Map (TTM) No. 38228 (eight individual parcels (55.8 gross acres)) (refer to Exhibit 1-B), and associated grading and infrastructure installation to facilitate future development of the Project site compliant with current General Plan and zoning designations. A portion of the Project site would be preserved as open space. For purposes of analysis, and based on existing General Plan and zoning designations, it is anticipated that future development at the Project site could include: business park uses and commercial uses on Lot 1 through Lot 3 (18.8 gross acres/16.53 net acres), consistent with the "Innovation" land use designation; and multifamily (low-rise) housing units (condo) and single family detached residential dwelling units on Lot 4 through Lot 8 (28.55 net acres), consistent with the existing General Plan land use designation and zoning (MF-2, Multi-Family Residential). This analysis assumes that future development associated with the Project would consist of 199 multifamily (low-rise) housing units (condo), 237 single family detached residential dwelling units, 267,000 square feet (sf) of business park use, and 5,000 sf of commercial use. The Project would also involve site-adjacent roadway improvements. It is anticipated that the Project would be developed in a single phase with an anticipated Opening

Year of 2027. The proposed Project is anticipated to generate 7,104 two-way trips per day, with 618 AM peak hour trips and 675 PM peak hour trips.

EXHIBIT 1-A: LOCATION MAP

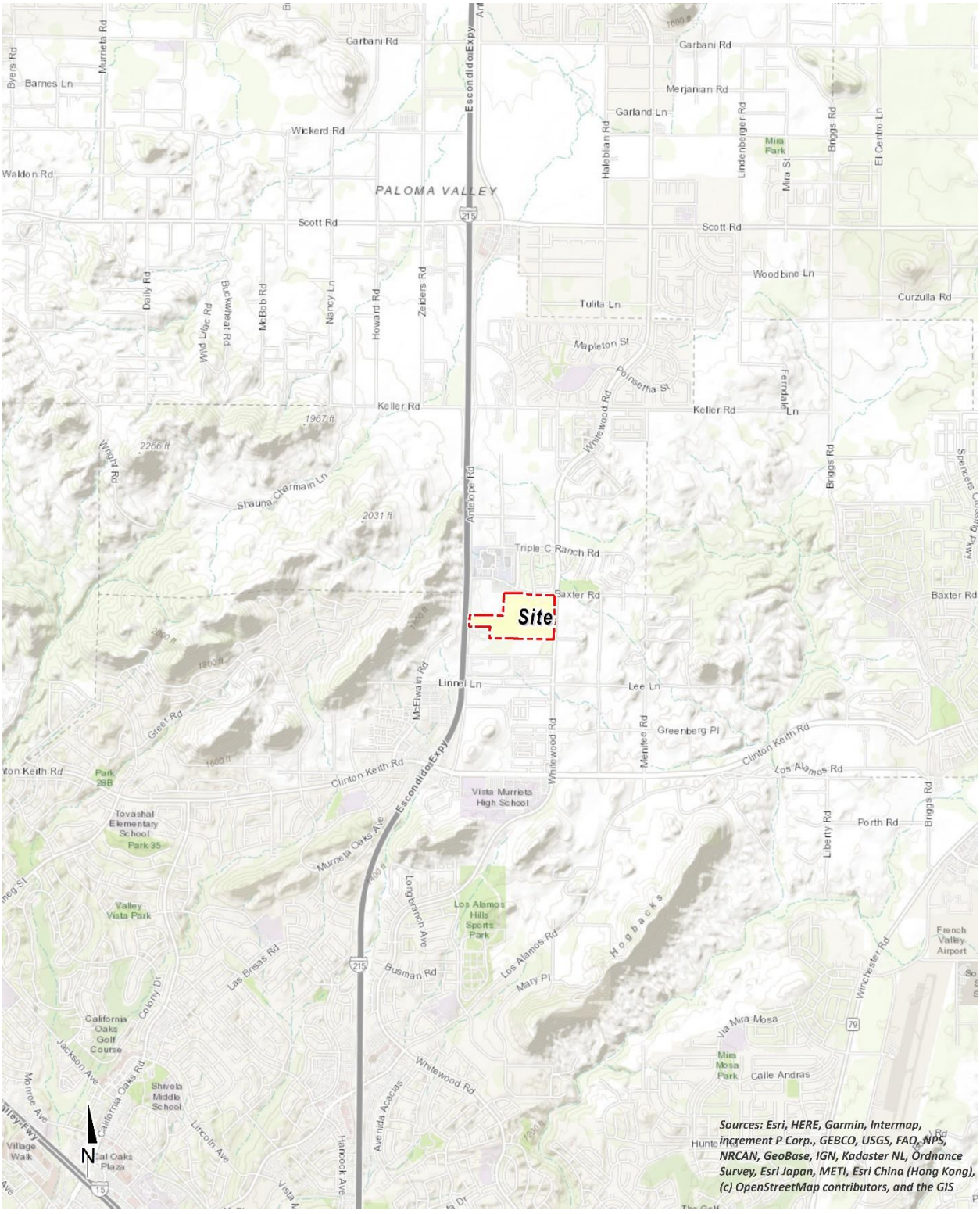
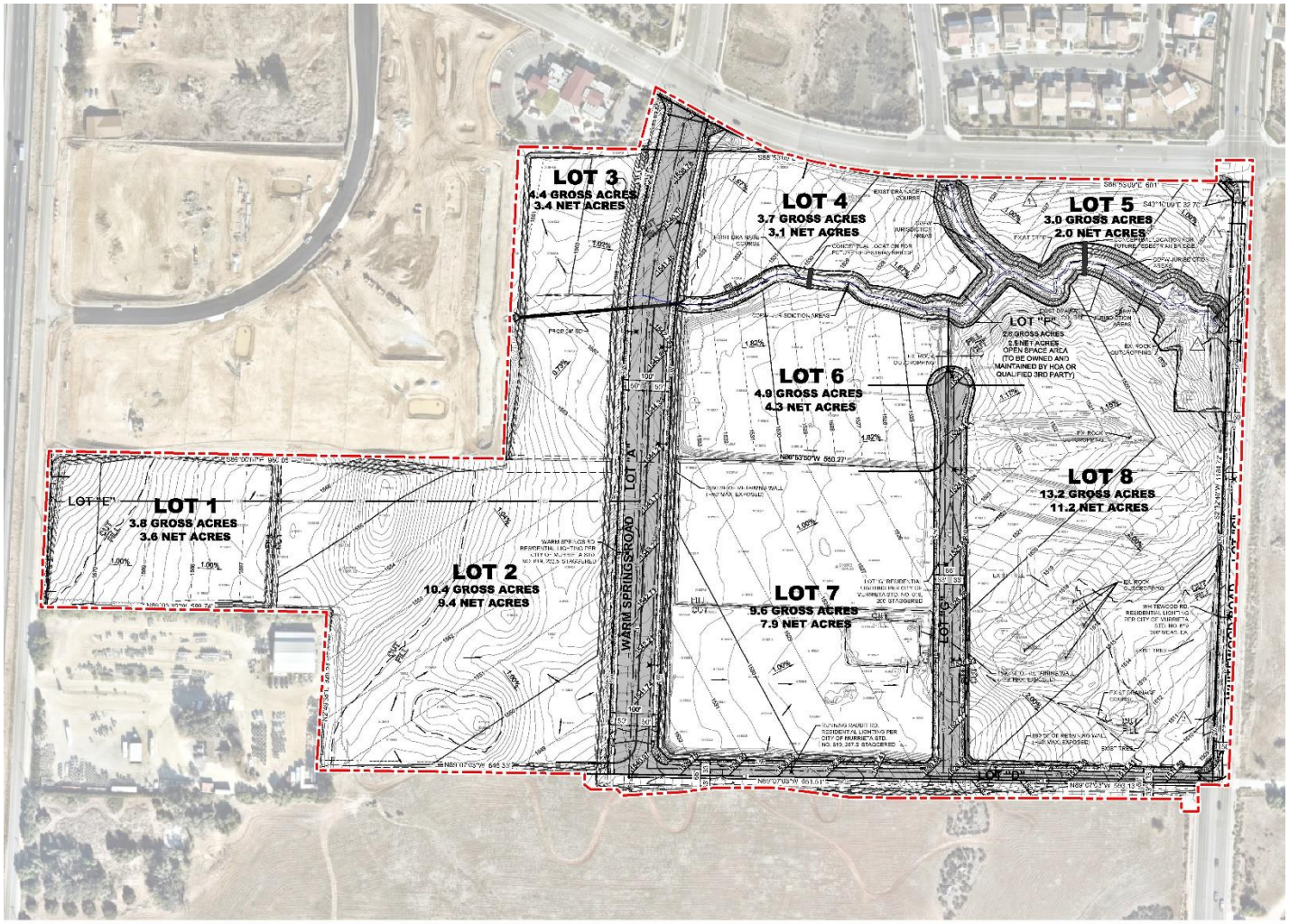


EXHIBIT 1-B: TENTATIVE TRACT MAP



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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 2020, released by the United States (U.S.) Energy Information Administration's (EIA) California State Profile and Energy Estimates in 2021 and included (2):

- As of 2020, approximately 6,923 trillion British Thermal Unit (BTU) of energy was consumed
- As of 2020, approximately 524 million barrels of petroleum
- As of 2020, approximately 2,075 billion cubic feet of natural gas
- As of 2020, approximately 1 million short tons of coal

According to the EIA, in 2021 the U.S. petroleum consumption comprised about 77% of all transportation energy use, excluding fuel consumed for aviation and most marine vessels (3). In 2021, about 249,790 million gallons (or about 5.95 million barrels) of finished petroleum products were consumed in the U.S., an average of about 684 million gallons per day (or about 16 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) (5).

The most recent data provided by the EIA for energy use in California by demand sector is from 2020 and is reported as follows:

- Approximately 34.0% transportation
- Approximately 24.6% industrial
- Approximately 21.8% residential
- Approximately 19.6% commercial (6)

According to the EIA, California used approximately 247,250 gigawatt hours of electricity in 2021 (7). By sector in 2021, residential uses utilized 36.5% of the state's electricity, followed by 43.9% for commercial uses, 19.2% 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 (7).

According to the EIA, California used approximately 200,871 million therms of natural gas in 2021 (12). In 2021 (the most recent year for which data is available), by sector, industrial uses utilized 33% of the state's natural gas, followed by 30% used as fuel in the electric power sector, 21% from residential, 11% from commercial, 1% from transportation uses and the remaining 3% was utilized for the operations, processing and production of natural gas itself. (12). 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 (12).

In 2021, total system electric generation for California was 277,764 gigawatt hours (GWh). California's massive electricity in-state generation system generated approximately 194,127 GWh which accounted for approximately 70% of the electricity it uses; the rest was imported from the Pacific Northwest (12%) and the U.S. Southwest (18%) (8). Natural gas is the main source for electricity generation at 50.2% of the total in-state electric generation system power as shown in Table 2-1.

TABLE 2-1: TOTAL ELECTRICITY SYSTEM POWER (CALIFORNIA 2021)

Fuel Type	California In-State Generation (GWh)	% of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	% of Imports	Total California Energy Mix	Total California Power Mix
Coal	303	0.2%	181	7,788	7,969	9.5%	8,272	3.0%
Natural Gas	97,431	50.2%	45	7,880	7,925	9.5%	105,356	379.0%
Oil	37	0.0%	-	-	-	0.0%	37	0.0%
Other (Waste Heat/Petroleum Coke)	382	0.2%	68	15	83	0.1%	465	0.2%
Nuclear	16,477	8.5%	524	8,756	9,281	11.1%	25,758	9.3%
Large Hydro	12,036	6.2%	12,042	1,578	13,620	16.3%	25,656	9.2%
Unspecified	-	0.0%	8,156	10,731	18,887	22.6%	18,887	6.8%
Total Thermal and Non-Renewables	**126,666**	**65.2%**	**21,017**	**36,748**	**57,764**	**6910.0%**	**184,431**	**66.4%**
Biomass	5,381	2.8%	864	26	890	1.1%	6,271	2.3%
Geothermal	11,116	5.7%	192	1,906	2,098	2.5%	13,214	4.8%
Small Hydro	2,531	1.3%	304	1	304	0.4%	2,835	1.0%
Solar	33,260	17.1%	220	5,979	6,199	7.4%	39,458	14.2%
Wind	15,173	7.8%	9,976	6,405	16,381	19.6%	31,555	11.4%
Total Renewables	**67,461**	**34.8%**	**11,555**	**14,317**	**25,872**	**3090.0%**	**93,333**	**33.6%**
SYSTEM TOTALS	***194,127***	***100.0%***	***32,572***	***51,064***	***83,636***	***100.0%***	***277,764***	***100.0%***

Source: CECs 2021 Total System Electric Generation

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 (9):

- In 2021, California was the seventh-largest producer of crude oil among the 50 states, and, as of January 2021, it 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 and, the state accounted for 15% of the nation's jet fuel consumption and 10% of motor gasoline consumption in 2020.
- In 2019, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all other states except Rhode Island, due in part to its mild climate and its energy efficiency programs.
- In 2021, California was the nation's top producer of electricity from solar, geothermal, and biomass energy. The state was fourth in the nation in conventional hydroelectric power generation, down from second in 2019, in part because of drought and increased water demand.
- In 2021, California was the fourth-largest electricity producer in the nation, but the state was also the nation's second-largest consumer of electricity, and in 2020, it received about 30% of its electricity supply from generating facilities outside of California, including imports from Mexico.

As indicated above, 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.

2.2 ELECTRICITY

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt hours of electricity in 2017 (EIA 2019a). By sector in 2017, commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses, and 19% for industrial uses (EIA 2019a). The usage associated with electricity use were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1. 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 Independent Service Operator (ISO) studies revealed the extent to which the South Coast Air Basin and the San Diego Air Basin 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 (10). Similarly, the 2021 IEPR's identifies broad strategies that are aimed at maintaining electricity system reliability.

Electricity is currently provided to the Project area 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 2018 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 (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 (12).

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, transmission 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.

Tables 2-2 identifies SCE's specific proportional shares of electricity sources in 2021. As indicated in Table 2-2, the 2021 SCE Power Mix has renewable energy at 31.4% of the overall energy resources. Geothermal resources are at 5.7%, wind power is at 10.2%, large hydroelectric sources are at 2.3%, solar energy is at 14.9%, and coal is at 0% (13).

TABLE 2-2: SCE 2021 POWER CONTENT MIX

Energy Resources	2021 SCE Power Mix
Eligible Renewable	**31.4%**
Biomass & Waste	0.1%
Geothermal	5.7%
Eligible Hydroelectric	0.5%
Solar	14.9%
Wind	10.2%
Coal	**0.0%**
Large Hydroelectric	**2.3%**
Natural Gas	**22.3%**
Nuclear	**9.2%**
Other	**0.2%**
Unspecified Sources of power*	34.6%
Total	**100%**

* "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 & 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 pipelines 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 system in 2008, and it is now referred to as the backbone transmission system 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." (14)

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.

The viability of natural gas is based on present conditions of gas supply and regulatory policies. The natural gas consumption by sector within SCG's service area is provided in Table 2-2.

TABLE 2.2 – NATURAL GAS CONSUMPTION IN SCG SERVICE AREA IN 2018[A, B]

Agricultural& Water Pump	Commercial Building	Commercial Other	Industry	Mining & Construction	Residential	Total Usage
78	913	75	1,714	229	2,147	5,156

Notes:

[a] Source: CEC 2020

[b] all numbers in millions of therms and rounded to the nearest whole number

As shown in the table above, SCG consumed approximately 5.2 billion therms in 2018, of which approximately 2.1 billion therms were consumed by the residential sector and 913 million therms were consumed by the commercial building sector.

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 (15), and those vehicles consume an estimated 17.2 billion gallons of fuel each year[1]. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the Project patrons and employees via commercial outlets.

[1] Fuel consumptions estimated utilizing information from EMFAC2021.

3 REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States (U.S.) Department of Transportation, the United States Department of Energy, and the U.S. 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 21ST 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. Specifically, under Tea-21, the advanced vehicle program was begun to develop clean, fuel-efficient trucks and other heavy vehicles and the clean fuels program was stated to buy or lease buses using low-polluting fuels.

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 § 25301a]). The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2021 IEPR was adopted February, 2022, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2021 IEPR, as with previous IEPRs, focuses on a variety of topics such as including the environmental performance of the electricity generation system, landscape-scale planning, the response to the gas leak at the Aliso Canyon natural gas storage facility, transportation fuel supply reliability issues, updates on Southern California electricity reliability, methane leakage, climate adaptation activities for the energy sector, climate and sea level rise scenarios, and the California Energy Demand Forecast (16). The 2022 IEPR Update is currently in progress but is not anticipated to be adopted until early 2023.

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: The California Energy Code 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 January 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 will be effective on January 1, 2023.

Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction waste and demolition ordinances and defers to them as the ruling guidance provided they establish a minimum 65% diversion requirement.

The code also provides exemptions for areas not served by construction waste and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings must meet in order to be certified for occupancy, which is generally enforced by the local building official.

Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas (GHG) emissions. The 2022 version of Title 24 was adopted by the CEC and will be effective on January 1, 2023.

The 2022 Title 24 standards would result in less energy use, thereby reducing air pollutant emissions associated with energy consumption in the SCAB and across the State of California. For example, the 2022 Title 24 standards require solar photovoltaic systems for new single family homes, encourage the use of heat pumps for space and water heating, and require homes to be electric-ready to ease the adoption of cleaner electric heating, cooking, and EV charging. 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 (17). 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 (18):

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).
- Designated parking for clean air vehicles. In new projects or additions to alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- 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 electric vehicle supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, uplight 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 reuse 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).

RESIDENTIAL MANDATORY MEASURES

- EV Charging (new one- and two-family dwellings and townhouses with attached private garages). For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device (4.106.4.1).

- 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 ten 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).
- Designated parking. In new projects or additions to alterations that add ten or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- 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 note 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).

      Residential lavatory faucets shall have a maximum flow rate of note more than 1.2 gallons per minute at 60 psi (4.303.1.4.1). Lavatory faucets in common or public use areas shall have a maximum flow rate of note more than 0.5 gallons per minute at 60 psi (4.303.1.4.2). Metering faucets shall not deliver more than 0.25 gallons per cycle

(4.303.1.4.3). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (4.303.1.4.4).

- Outdoor portable water use 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 projected to consume more than 1,000 gal/day (5.303.1.1 and 5.303.1.2).
- Outdoor water use 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).
- Additionally, under California's 2022 Title 24, Part 6 Building Energy Efficiency Standards, solar photovoltaic systems are required for newly constructed low-rise residential buildings and shall be sized sufficient to offset the electricity use of the proposed building as if it was a mixed-fuel building.

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)

The State Renewable Portfolio Standard (RPS) was initially established by SB 1078 in 2002. SB 1078 required electricity providers to increase procurement of electricity from renewable energy sources by at least one percent per year with the goal of reaching 20% renewables by 2017. SB 107 accelerated the 20% RPS requirement from 2017 to 2010. Subsequently, SB 2 (1X) increased the RPS requirements to 33 percent renewables by 2020 with compliance period targets of 20% by 2013 and 25% by 2016. SB 350 further increases the RPS requirement to 50% by 2030, with interim targets of 40% by 2024 and 45% by 2027. In addition, the bill requires that 65 percent of RPS procurement must be derived from long-term contracts (10 years or more) starting in 2021. The most recent change is from SB 100, which increases RPS requirements to 60% by 2030, with new interim targets of 44% by 2024 and 52% by 2027 as well. The bill further requires that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

According to the CPUC, all electricity retail sellers either met or exceeded the interim target and are on track to achieve their compliance requirements. California's three large IOUs collectively served 36% of their 2017 retail electricity sales with renewable power. The Small and Multi-

Jurisdictional Utilities (SMJUs) and ESPs served roughly 27% of retail sales with renewables and CCAs collectively served 50% of retail sales with renewable power (19).

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 25% 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 Regional Regulations

SCAG's 2020-2045 RTP/SCS (Connect SoCal)

SCAG's RTP/SCS is Southern California's regional transportation plan to achieve the vehicle emissions reductions identified under SB 375. The 2020-2045 RTP/SCS retains the same purpose as the previous RTP/SCS plans in focusing and providing an integrated approach for accommodating population growth, household and employment growth, and transportation needs in the SCAG region by year 2045 including goals to improve the jobs – housing balance and reduce commuting distances. Similar to the previous RTP/SCS plans, the projected regional development pattern under the 2020-2045 RTP/SCS would reduce per capita vehicular-travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region. VMT associated with heavy duty trucks involved in goods movement is outside the purview of the 2020-2045 RTP/SCS, which primarily focuses on VMT associated with passenger vehicles. Under the 2020-2045 RTP/SCS, the focus remains on improving freight mobility in the region and transitioning to near-zero and zero-emissions technology. Because Connect SoCal is designed to reduced commuting distances, it also can reduce energy consumption.

City of Murrietta CAP

The City of Murrieta originally adopted a CAP as part of the City's General Plan 2035 in 2011. In order to aggressively address the threats of global climate change, the City prepared a CAP Update (in 2020), which provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate (20). The CAP Update includes GHG emissions targets that are consistent with the reduction targets of the State of California and presents several strategies that will make it possible for the City of Murrieta to meet the recommended

targets. Projects that demonstrate consistency with the strategies, actions, and emission reduction targets contained in the CAP would have a less than significant impact on climate change. The CAP Update was completed in January 2020 and approved by the City Council on June 16, 2020. A project's consistency with the CAP will be determined through the CAP Consistency Review Checklist. The CAP Consistency Review Checklist contains GHG reduction measures applicable to development projects that are required to be implemented on a project-by-project basis to ensure that the specific emission targets identified in the CAP are achieved. New development projects will need to incorporate all potential applicable CAP measures to demonstrate consistency with the CAP.

The Project will be compliant with the goals and objectives set forth in the City of Murrieta's CAP Update (as shown on Table 3-1). Consistency with the CAP would also result in a reduction of the Project's energy demand through compliance with the CAP strategies including the Zero Net Energy Standards, Transportation Demand Management, and Electric Vehicle Service Equipment.

TABLE 3-1: PROJECT CONSISTENCY WITH THE CAP UPDATE CONSISTENCY REVIEW CHECKLIST

Checklist Items	Yes	No	n/a
Step 1: Land Use Consistency			
1. Are the proposed land uses in the project consistent with the existing General Plan land use and zoning designations?	X		
If "Yes", questions 2 below is not applicable and the project shall proceed to Step 2 of the checklist. If "No", proceed to Question 2 below.			
2. If the proposed project is not consistent with the General Plan land use or zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG- intensive project when compared to the existing designations?			X
If "Yes", attach to this checklist the estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the proposed project is determined to result in an equivalent or less GHG-intensive project when compared to the existing designations, proceed to Step 2 of the checklist.			
If "No", the applicant must conduct a full GHG impact analysis for the project as part of the CEQA process. The project shall incorporate each of the applicable measures identified in Step 2 to mitigate cumulative GHG emissions impacts.			
Step 2: CAP Strategies Consistency			
1. Zero Net Energy Standards (Measure BE-3)			
a) For residential projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2023?	X		
b) For commercial projects or commercial portions of mixed-use projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2025?	X		
c) For industrial projects, would the project or a portion of the project be subject to building permitting (i.e., building permits issued) on or after January 1, 2025?			X
If "Yes" to either a, b, or c, proceed to question d of this checklist requirement.			
d) Would the project or portions of the project permitted after January 1, 2023 for residential projects and after January 1, 2025 for nonresidential projects be designed and constructed to comply with the Zero Net Energy standard2?	X		

Checklist Items	Yes	No	n/a
2. Construction Waste Diversion (Measure SW-2)			
a) For residential projects, recycle and/or salvage for reuse a minimum of 80 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4 of the California Code of Regulations, Title 24?	X		
b) For nonresidential projects, recycle and/or salvage for reuse a minimum of 80 percent of the nonhazardous construction and demolition waste in accordance with either Section 5.408.1.1, 5.408.1.2 or 5.408.1.3 of the California Code of Regulations, Title 24?	X		
3. Transportation Demand Management Program (Measure T-7)			
a) For the construction of nonresidential projects that would include 50 or more employees, would the project include a transportation demand management plan that meets requirements of Section 16.40 "Transportation Demand Management" of the City's Municipal Code and has been reviewed and approved by the City of Murrieta Public Works Department?	X		
Check "N/A" if the project is a residential project or if it would include 49 or fewer employees.			
4. Electric Vehicle Service Equipment (EVSE) (Measure T-2)3			
Checklist Requirement by Project Type:			
a) <u>One- and two-family dwellings and townhouses with attached private garages</u>: Would the required parking serving each new dwelling include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the resident(s)?	X		
b) <u>Multi-Family Residential Projects:</u> Would 6% of the total parking spaces required, or a minimum of two spaces, whichever is greater, include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the resident(s)?	X		
c) <u>Non-residential projects</u>: Would 3% of the total parking spaces required, or a minimum of two spaces, whichever is greater, include Electric Vehicle Service Equipment (EVSE) to allow for electric vehicle charging by the occupant(s)?	X		
5. Tree Planting (Measure LU-2)			
a) For residential and non-residential projects, would the project include the planting of new trees where required by Section 16.26 "Landscaping Standards and Water Efficient Landscaping" of the City's Municipal Code?	X		

CITY OF MURRIETA GENERAL PLAN

The Conservation Element of the City of Murrieta General Plan includes the policies that result in energy conservation and efficiency. The following policies from the Conservation Element may be applicable to the Project:

CSV-12.1 Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Code.

CSV-12.3 Support the on-site installation and use of renewable energy generation systems for residential, commercial, institutional, and industrial uses.

CSV-12.5 Consider non-commercial solar power generation in residential areas.

CSV-12.6 Encourage new development projects and significant rehabilitation or expansion projects to incorporate innovative energy conservation or generation amenities such as electric vehicle charging stations, solar canopies, and carports.

CSV-12.8 Promote community awareness of opportunities to conserve energy and use renewable energy.

CSV-12.10 Support incentive programs including, but not limited to permit streamlining, permit fee reductions, or tax rebates to encourage the use of green roofs in residential and commercial buildings and/or the installation of solar photovoltaic (PV) carports in existing and future parking lots.

CSV-12.11 Implement, and amend as necessary, a Climate Action Plan.

CSV-14.1 Ensure all applicable construction projects comply with the California State Green Building Standards Code.

CSV-14.2 Encourage the integration of other principles of green building into development standards and guidelines, looking for opportunities to realize other benefits such as improved health and increased bicycle transportation.

CSV-14.3 Identify and reduce regulatory barriers to green building.

CSV-14.4 Raise community awareness regarding green building methods, incentives, and benefits at community events, the planning counter, and on the City's website.

The Air Quality Element of the City of Murrieta General Plan includes the policies that result in co-benefits related to energy conservation and efficiency. The following policies from the Air Quality Element may be applicable to the Project and may increase energy efficiency:

AQ-4.1 Cooperate with local, regional, State, and Federal agencies to reduce vehicle miles traveled (VMT) and consequent emissions through job creation.

AQ-4.2 Improve jobs/housing balance by encouraging the development, expansion, and retention of business.

AQ-4.3 Improve access of businesses to local institutions that provide education and job training to prepare local residents to fill the jobs local industries create.

AQ-4.4 Encourage a mix of housing types that are affordable to all segments of the population and are near job opportunities to further reduce vehicle trips.

AQ-5.1 Encourage employers to implement transportation demand management (TDM) measures, such as the following programs to reduce trips and vehicle miles traveled:

- Transit subsidies
- Bicycle facilities
- Alternative work schedules
- Ridesharing
- Telecommuting and work-at-home programs
- Employee education
- Preferential parking for carpools/vanpools

AQ-5.3 Promote use of fuel-efficient and low-emissions vehicles, including Neighborhood Electric Vehicles.

The proposed Project would not conflict with the applicable Conservation and Air Quality Element policies listed above.

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4 PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

4.1 EVALUATION CRITERIA

In compliance with Appendix G of the *State CEQA Guidelines* (1), 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

Appendix F of the *State CEQA Guidelines* (21), provides some guidance for assessing these criteria, which implies that the means of achieving the goal of energy conservation includes 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. Additionally, the CEQA Guidelines state "[a] lead agency may consider the extent to which an energy source serving the project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production." Information from the CalEEMod Version 2022.1 outputs for the *Discovery Village Air Quality Impact Analysis* (Urban Crossroads, Inc.) (AQIA) (22) was utilized in this analysis, detailing Project related construction equipment, transportation energy demands, and facility energy demands.

4.2.1 CALEEMOD

In May 2022 California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022.1. 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 (23). Accordingly, the latest version of CalEEMod has been used to determine the proposed Project's anticipated transportation and facility energy demands. Output from the annual CalEEMod runs is provided in Appendices 4.1, 4.2, 4.3 and 4.4.

4.2.2 EMISSION FACTORS MODEL

On November 15, 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 (24). 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

analysis, the 2023 and 2027 analysis years were utilized to determine the average vehicle fuel economy for construction and operation the Project.

4.3 CONSTRUCTION ENERGY DEMANDS

4.3.1 CONSTRUCTION POWER COST AND ELECTRICITY USAGE

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.

CONSTRUCTION DURATION

Construction of the Project is expected to commence in April 2023 and will last through October 2027. The construction schedule utilized in the analysis, shown in Table 4-1, represents a "worst-case" analysis scenario. Should construction occur any time after the respective dates, impacts would be reduced since emission factors for construction decrease as time passes due to emission regulations becoming more stringent[2]. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (1). The duration of construction activity was based on an estimated schedule provided by the Project applicant and an opening year of 2027.

TABLE 4-1: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation (entire site)	4/25/2023	5/25/2023	23
Superpad Grading (entire site)	5/26/2023	9/4/2023	72
Backbone Underground Utilities (entire site)	9/5/2023	12/11/2023	70
Backbone Paving	12/12/2023	1/22/2024	30
InTract Rough Grading (R)	3/24/2024	4/24/2024	23
InTract Underground Utilities (R)	4/25/2024	6/3/2024	28
InTract Paving (R)	6/4/2024	7/23/2024	36
InTract Rough Grading (INN)	9/24/2024	10/24/2024	23
InTract Underground Utilities (INN)	10/25/2024	12/3/2024	28
InTract Paving (INN)	12/4/2024	1/23/2025	37
Building Construction & Finish Grade (INN)	1/24/2025	3/23/2026	302
Architectural Coating (INN)	1/24/2025	3/23/2026	302
Building Construction & Finish Grade (R)	7/24/2024	10/23/2027	848
Architectural Coating (R)	7/24/2024	10/23/2027	848

(R) = Residential uses, (INN) Innovation uses
Source: CalEEMod, Appendix 4.1, 4.2 and 4.3.

[2] As shown in the CalEEMod User's Guide, Section 4.3 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

PROJECT CONSTRUCTION POWER COST

The *2022 National Construction Estimator* identifies a typical power cost per 1,000 sf of construction per month of $2.41, which was used to calculate the Project's total construction power cost (25).

Based on information provided in the AQIA, construction activities are anticipated to occur over the course of 53 months (22). Based on Table 4-2, the total power cost of the on-site electricity usage during the construction of the Project is estimated to be approximately $59,030.42.

TABLE 4-2: CONSTRUCTION POWER COST

Land Use	Power Cost (per 1,000 SF of building per month of construction)	Total Building Size (1,000 SF)	Construction Duration (months)	Total Project Construction Power Cost
Single Family Residential	$2.41	462.150	53	$59,030.42
Condominiums	$2.41	210.940	53	$26,943.37
Commercial	$2.41	5.000	53	$638.65
Commercial Office	$2.41	267.000	53	$34,103.91
Parking	$2.41	73.312	53	$9,364.09
Roadway	$2.41	199.505	53	$25,482.79
TOTAL PROJECT CONSTRUCTION COST				***$59,030.42***

PROJECT CONSTRUCTION ELECTRICITY USAGE

The SCE's general service rate schedule were used to determine the Project's electrical usage. As of January 1, 2022, SCE's general service rate is $0.13 per kilowatt hours (kWh) of electricity for General Services/Industrial Rate (26). The total Project construction electricity usage is the summation of the products of the power cost ($59,030.42) by the utility provider cost per kilowatt hour ($0.13) of electricity. As shown on Table 4-3, the total electricity usage from on-site Project construction related activities is estimated to be approximately 454,080 kWh.

TABLE 4-3: CONSTRUCTION ELECTRICITY USAGE

Land Use	Cost per kWh	Total Project Construction Electricity Usage (kWh)
Single Family Residential	$0.13	454,080
Condominiums	$0.13	207,257
Commercial	$0.13	4,913
Commercial Office	$0.13	262,338
Parking	$0.13	72,031
Roadway	$0.13	196,021
TOTAL PROJECT CONSTRUCTION ELECTRICTY USAGE (kWh)		***454,080***

4.3.2 CONSTRUCTION EQUIPMENT FUEL ESTIMATES

Fuel consumed by construction equipment would be another energy resource expended over the course of Project construction. As further described below in Table 4-5, construction equipment used by the Project would result in single event consumption of approximately 202,012 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.

CONSTRUCTION EQUIPMENT

Consistent with industry standards and typical construction practices, each piece of equipment listed in Table 4-4 will operate up to a total of eight (8) hours per day. It should be noted that most pieces of equipment would likely operate for fewer hours per day. A summary of construction equipment assumptions by phase is provided in Table 4-4.

TABLE 4-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase Name	Equipment	Amount	Hours Per Day
Site Preparation	Crawler Tractors	4	8
Site Preparation	Rubber Tired Dozers	3	8
Superpad Grading	Bore/Drill Rigs	1	8
Superpad Grading	Crawler Tractors	1	8
Superpad Grading	Crawler Tractors	1	8
Superpad Grading	Crushing/Proc. Equipment	1	8
Superpad Grading	Graders	1	8
Superpad Grading	Rubber Tired Dozers	1	8
Superpad Grading	Scrapers	2	8
Backbone Underground Utilities	Excavators	1	8
Backbone Underground Utilities	Tractors/Loaders/Backhoes	1	8
Backbone Underground Utilities	Trenchers	1	8
Backbone Paving	Pavers	2	8
Backbone Paving	Paving Equipment	2	8
Backbone Paving	Rollers	2	8
InTract Rough Grading (R)	Crawler Tractors	2	8
InTract Rough Grading (R)	Crawler Tractors	2	8
InTract Rough Grading (R)	Graders	1	8
InTract Rough Grading (R)	Rubber Tired Dozers	1	8
InTract Rough Grading (R)	Scrapers	2	8
InTract Underground Utilities (R)	Excavators	1	8
InTract Underground Utilities (R)	Trenchers	1	8
InTract Paving (R)	Pavers	2	8

Phase Name	Equipment	Amount	Hours Per Day
InTract Paving (R)	Paving Equipment	2	8
InTract Paving (R)	Rollers	2	8
Building Construction & Finish Grade (R)	Cranes	1	8
Building Construction & Finish Grade (R)	Forklifts	3	8
Building Construction & Finish Grade (R)	Generator Sets	1	8
Building Construction & Finish Grade (R)	Tractors/Loaders/Backhoes	3	8
Building Construction & Finish Grade (R)	Welders	1	8
Architectural Coating (R)	Air Compressors	1	8
InTract Rough Grading (INN)	Crawler Tractors	2	8
InTract Rough Grading (INN)	Crawler Tractors	2	8
InTract Rough Grading (INN)	Graders	1	8
InTract Rough Grading (INN)	Rubber Tired Dozers	1	8
InTract Rough Grading (INN)	Scrapers	2	8
InTract Underground Utilities (INN)	Excavators	1	8
InTract Underground Utilities (INN)	Trenchers	1	8
InTract Paving (INN)	Pavers	2	8
InTract Paving (INN)	Paving Equipment	2	8
InTract Paving (INN)	Rollers	2	8
Building Construction & Finish Grade (INN)	Cranes	1	8
Building Construction & Finish Grade (INN)	Forklifts	3	8
Building Construction & Finish Grade (INN)	Generator Sets	1	8
Building Construction & Finish Grade (INN)	Tractors/Loaders/Backhoes	3	8
Building Construction & Finish Grade (INN)	Welders	1	8
Architectural Coating (INN)	Air Compressors	1	8

(R) = Residential uses, (INN) Innovation uses
Source: CalEEMod, Appendices 4.1, 4.2 and 4.3.

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 (27). 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[3]. As presented in Table 4-5, Project construction activities would consume an estimated 202,012 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.

[3] 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	23	Rubber Tired Dozers	367	3	8	0.40	3,523	4,380
		Crawler Tractors	87	4	8	0.43	1,197	1,488
Superpad Grading	72	Crawler Tractors	87	1	8	0.43	299	1,165
		Graders	148	1	8	0.41	485	1,889
		Crushing/Proc. Equipment	12	1	8	0.85	82	318
		Scrapers	423	2	8	0.48	3,249	12,643
		Crawler Tractors	87	1	8	0.43	299	1,165
		Rubber Tired Dozers	367	1	8	0.40	1,174	4,571
		Bore/Drill Rigs	83	1	8	0.50	332	1,292
Backbone Paving	30	Pavers	81	2	8	0.42	544	883
		Paving Equipment	89	2	8	0.36	513	831
		Rollers	36	2	8	0.38	219	355
Backbone Underground Utilities	70	Excavators	36	1	8	0.38	109	414
		Tractors/Loaders/Backhoes	84	1	8	0.37	249	941
		Trenchers	40	1	8	0.50	160	605
InTract Rough Grading (R)	23	Crawler Tractors	87	2	8	0.43	599	744
		Graders	148	1	8	0.41	485	604
		Rubber Tired Dozers	367	1	8	0.40	1,174	1,460
		Scrapers	423	2	8	0.48	3,249	4,039
		Crawler Tractors	87	2	8	0.43	599	744
InTract Underground Utilities (R)	28	Excavators	36	1	8	0.38	109	166
		Trenchers	40	1	8	0.50	160	242
InTract Paving (R)	36	Pavers	81	2	8	0.42	544	1,059
		Paving Equipment	89	2	8	0.36	513	998
		Rollers	36	2	8	0.38	219	426

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)
Building Construction & Finish Grade (R)	848	Cranes	367	1	8	0.29	851	39,028
		Forklifts	82	3	8	0.20	394	18,042
		Generator Sets	14	1	8	0.74	83	3,799
		Tractors/Loaders/Backhoes	84	3	8	0.37	746	34,191
		Welders	46	1	8	0.45	166	7,591
Architectural Coating (R)	848	Air Compressors	37	1	8	0.48	142	6,513
InTract Rough Grading (INN)	23	Crawler Tractors	87	2	8	0.43	599	744
		Graders	148	1	8	0.41	485	604
		Rubber Tired Dozers	367	1	8	0.40	1,174	1,460
		Scrapers	423	2	8	0.48	3,249	4,039
		Crawler Tractors	87	2	8	0.43	599	744
InTract Underground Utilities (INN)	28	Excavators	36	1	8	0.38	109	166
		Trenchers	40	1	8	0.50	160	242
InTract Paving (INN)	37	Pavers	81	2	8	0.42	544	1,089
		Paving Equipment	89	2	8	0.36	513	1,025
		Rollers	36	2	8	0.38	219	438
Building Construction & Finish Grade (INN)	302	Cranes	367	1	8	0.29	851	13,899
		Forklifts	82	3	8	0.20	394	6,425
		Generator Sets	14	1	8	0.74	83	1,353
		Tractors/Loaders/Backhoes	84	3	8	0.37	746	12,177
		Welders	46	1	8	0.45	166	2,703
Architectural Coating (INN)	302	Air Compressors	37	1	8	0.48	142	2,319
CONSTRUCTION FUEL DEMAND (GALLONS DIESEL FUEL)								***202,012***

(R) = Residential uses, (INN) Innovation uses

4.3.3 CONSTRUCTION TRIPS AND VMT

The worker trips identified in Table 4-6 are based on CalEEMod standard generation factors and demolition and soil hauling information was provided by the Project applicant.

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	0	0	18.5	10.2	20
Superpad Grading	18	0	20,592	18.5	10.2	20
Backbone Underground Utilities	8	0	0	18.5	10.2	20
Backbone Paving	15	0	0	18.5	10.2	20
InTract Rough Grading (R)	20	0	0	18.5	10.2	20
InTract Underground Utilities (R)	5	0	0	18.5	10.2	20
InTract Paving (R)	15	0	0	18.5	10.2	20
Building Construction & Finish Grade (R)	229	47	0	18.5	10.2	20
Architectural Coating (R)	46	0	0	18.5	10.2	20
InTract Rough Grading (INN)	20	0	0	18.5	10.2	20
InTract Underground Utilities (INN)	5	0	0	18.5	10.2	20
InTract Paving (INN)	15	0	0	18.5	10.2	20
Building Construction & Finish Grade (INN)	87	45	0	18.5	10.2	20
Architectural Coating (INN)	18	0	0	18.5	10.2	20

(R) = Residential uses, (INN) Innovation uses
Source: CalEEMod, Appendix 3.1, 3.2 and 3.3.

4.3.4 CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT for the Project, the construction worker trips would generate an estimated 5,091,552 VMT during the 53 months of construction (22). Based on CalEEMod methodology, emissions from construction worker trips are generated by light-duty-auto vehicles (LDA), light-duty-trucks 1 (LDT1[4]), and light-duty-trucks 2 (LDT2[5]). Based on EMFAC2021 vehicle population data for Year 2023, 67.9% of these vehicles would be LDA, 5.7% would be LDT1, and 26.5% would be LDT2. Data regarding Project related construction worker trips were based on EMFAC2021 inputs utilized within the AQIA.

Vehicle fuel efficiencies for LDA, LDT1, and LDT2 were estimated using information generated by EMFAC2021. 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

[4] 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.

[5] Vehicles under the LDT2 category have a GVWR of less than 6,000 lbs. and ETW between 3,751 lbs. and 5,750 lbs.

from on-road mobile sources (28). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the Riverside County-South Coast sub-area for the 2023 calendar year. Data from EMFAC2021 is shown in Appendix 4.5. Using the static year 2023 is considered conservative for estimating construction worker fuel consumption as it does not account for fuel efficiency improvements each year.

The estimated total annual fuel consumption resulting from LDA, LDT1 and LDT2 vehicles related to the Project construction worker trips are estimated to be 180,917 gallons of fuel.

As generated by EMFAC2021, an aggregated fuel economy of LDAs are estimated to have a fuel efficiency of 30.60 miles per gallon (mpg). Table 4-7 provides an estimated annual fuel consumption resulting from LDAs related to the Project construction worker trips. Based on Table 4-7, it is estimated that 111,915 gallons of fuel will be consumed related to construction worker trips (LDAs) during full construction of the Project.

TABLE 4-7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (LDA)

Construction Activity	Duration (Days)	Worker LDA Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	23	13	18.5	5,532	30.60	181
Superpad Grading	72	13	18.5	17,316	30.60	566
Backbone Paving	30	11	18.5	6,105	30.60	199
Backbone Underground Utilities	70	6	18.5	7,770	30.60	254
InTract Rough Grading (R)	23	14	18.5	5,957	30.60	195
InTract Underground Utilities (R)	28	4	18.5	2,072	30.60	68
Building Construction & finish Grade (R)	848	156	18.5	2,447,328	30.60	79,972
InTract Paving (R)	36	11	18.5	7,326	30.60	239
Architectural Coating (R)	848	32	18.5	502,016	30.60	16,405
InTract Rough Grading (INN)	23	14	18.5	5,957	30.60	195
InTract Underground Utilities (INN)	28	4	18.5	2,072	30.60	68
Building Construction & Finish Grade (INN)	302	60	18.5	335,220	30.60	10,954
InTract Paving (INN)	37	11	18.5	7,530	30.60	246
Architectural Coating (INN)	302	13	18.5	72,631	30.60	2,373
TOTAL CONSTRUCTION WORKER (LDA) FUEL CONSUMPTION						***111,915***

(R) = Residential uses, (INN) Innovation uses

The EMFAC2021 aggregated fuel economy of LDT1s are estimated to have a fuel efficiency 24.15 mpg. Table 4-8 provides an estimated annual fuel consumption resulting from LDT1s related to the Project construction worker trips. Based on Table 4-8, it is estimated that 12,456 gallons of

fuel will be consumed related to construction worker trips (LDT1s) during full construction of the Project.

TABLE 4-8: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (LDT1)

Construction Activity	Duration (Days)	Worker LDT1 Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	23	2	18.5	2,128	24.15	88
Superpad Grading	72	2	18.5	2,664	24.15	110
Backbone Paving	30	1	18.5	555	24.15	23
Backbone Underground Utilities	70	1	18.5	1,295	24.15	54
InTract Rough Grading (R)	23	2	18.5	851	24.15	35
InTract Underground Utilities (R)	28	1	18.5	518	24.15	21
Building Construction & finish Grade (R)	848	13	18.5	203,944	24.15	8,444
InTract Paving (R)	36	1	18.5	666	24.15	28
Architectural Coating (R)	848	3	18.5	47,064	24.15	1,949
InTract Rough Grading (INN)	23	2	18.5	851	24.15	35
InTract Underground Utilities (INN)	28	1	18.5	518	24.15	21
Building Construction & Finish Grade (INN)	302	5	18.5	27,935	24.15	1,157
InTract Paving (INN)	37	1	18.5	685	24.15	28
Architectural Coating (INN)	302	2	18.5	11,174	24.15	463
TOTAL CONSTRUCTION WORKER (LDT1) FUEL CONSUMPTION						***12,456***

(R) = Residential uses, (INN) Innovation uses

The EMFAC2021 aggregated fuel economy of LDT2s are estimated to have a fuel efficiency of 23.88 mpg. Table 4-9 provides an estimated annual fuel consumption resulting from LDT2s related to the Project construction worker trips. Based on Table 4-9, it is estimated that 56,545 gallons of fuel will be consumed related to construction worker trips (LDT2s) during full construction of the Project.

TABLE 4-9: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (LDT2)

Construction Activity	Duration (Days)	Worker LDT2 Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation	23	5	18.5	2,128	23.88	89
Superpad Grading	72	5	18.5	6,660	23.88	279
Backbone Paving	30	4	18.5	2,220	23.88	93
Backbone Underground Utilities	70	3	18.5	3,885	23.88	163
InTract Rough Grading (R)	23	6	18.5	2,553	23.88	107
InTract Underground Utilities (R)	28	2	18.5	1,036	23.88	43
Building Construction & finish Grade (R)	848	61	18.5	956,968	23.88	40,071
InTract Paving (R)	36	4	18.5	2,664	23.88	112
Architectural Coating (R)	848	13	18.5	203,944	23.88	8,540
InTract Rough Grading (INN)	23	6	18.5	2,553	23.88	107
InTract Underground Utilities (INN)	28	2	18.5	1,036	23.88	43
Building Construction & Finish Grade (INN)	302	24	18.5	134,088	23.88	5,615
InTract Paving (INN)	37	4	18.5	2,738	23.88	115
Architectural Coating (INN)	302	5	18.5	27,935	23.88	1,170
TOTAL CONSTRUCTION WORKER (LDT2) FUEL CONSUMPTION						***56,545***

(R) = Residential uses, (INN) Innovation uses

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.

4.3.5 CONSTRUCTION VENDOR AND SOIL HAULING FUEL ESTIMATES

Vendor Trips

Construction vendor trips (vehicles that deliver materials to the site during construction) are estimated to generate 568,609 VMT and hauling is anticipated to generate 411,840 VMT along area roadways for the Project over the duration of construction activity (29). Based on the CalEEMod User Manual, vehicles associated with vendor trips are limited to medium-heavy duty trucks (MHDT) and heavy-heavy duty trucks (HHDT) (30). Similar to LDA, LDT1, and LDT fuel estimates, vehicle fuel efficiencies for MHDTs and HHDTs for vending trips were estimated using information generated within EMFAC2021. For debris and soil hauling all trucks were assumed to be HHDT constituent with CalEEMod standard settings. EMFAC2021 was run for the MHDT and HHDT vehicle classes within the California sub-area for the 2023 calendar year. Data from EMFAC2021 is shown in Appendix 4.5.

As generated by EMFAC2021, an aggregated fuel economy of MHDTs are estimated to have a fuel efficiency of 8.42 mpg. Based on Table 4-10, it is estimated that 33,063 gallons of fuel will be consumed related to construction vendor trips (MHDTs) during full construction of the Project.

TABLE 4-10: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES (MHDT)

Construction Activity	Duration (Days)	Vendor Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Building Construction & finish Grade (R)	848	24	10.2	207,590	8.42	24,650
Building Construction & Finish Grade (INN)	302	23	10.2	70,849	8.42	8,413
TOTAL CONSTRUCTION VENDOR (MHDT) FUEL CONSUMPTION						***33,063***

(R) = Residential uses, (INN) Innovation uses

Table 4-11 shows the estimated fuel economy of HHDTs accessing the Project site. As generated by EMFAC2021, an aggregated fuel economy of HHDTs are estimated to have a fuel efficiency of 6.04 mpg. Based on Table 4-11, fuel consumption from construction vendor trips (HHDTs) will total approximately 48,021 gallons.

TABLE 4-11: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES (HHDT)

Construction Activity	Duration (Days)	Vendor Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Building Construction & finish Grade (R)	848	25	10.2	216,240	6.04	35,786
Building Construction & Finish Grade (INN)	302	24	10.2	73,930	6.04	12,235
TOTAL CONSTRUCTION VENDOR (HHDT) FUEL CONSUMPTION						***48,021***

(R) = Residential uses, (INN) Innovation uses

Hauling Trips

Table 4-12 shows the estimated fuel economy of HHDTs accessing the Project site. As generated by EMFAC2021, an aggregated fuel economy of HHDTs are estimated to have a fuel efficiency of 6.04 mpg. Based on Table 4-12, fuel consumption from construction vendor trips (HHDTs) will total approximately 68,156 gallons.

TABLE 4-12: CONSTRUCTION HAULING FUEL CONSUMPTION ESTIMATES (HHDT)

Construction Activity	Duration (Days)	Hauling Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Superpad Grading	72	286	20	411,840	6.04	68,156
TOTAL CONSTRUCTION HAULING (HHDT) FUEL CONSUMPTION						***68,156***

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.

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 turnover 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.

Construction worker trips for full construction of the Project would result in the estimated fuel consumption of 180,917 gallons of fuel. Additionally, fuel consumption from construction vendor and hauling trips (MHDTs and HHDTs) will total approximately 149,240 gallons. Diesel fuel would be supplied by regional commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved using bulk purchases, transport and use of construction materials. The 2021 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 (16). As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Additional construction-source energy efficiencies would occur due to required California regulations and best available control measures. 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. 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.

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, the 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. As shown in Table 4-13, the Project will result in 23,733,952 annual VMT and an estimated annual fuel consumption of 936,854 gallons of fuel.

TABLE 4-13: TOTAL PROJECT-GENERATED TRAFFIC ANNUAL FUEL CONSUMPTION

Vehicle Type	Annual Miles Traveled[1]	Average Vehicle Fuel Economy (mpg)	Estimated Annual Fuel Consumption (gallons)
LDA	11,763,751	34.3	343,105
LDT1	877,761	26.2	33,479
LDT2	4,948,558	26.6	185,844
MDV	3,727,307	21.4	174,256
LHD1	733,231	17.3	42,381
LHD2	209,531	16.3	12,856
MHD	353,127	8.9	39,794
HHD	389,460	6.5	60,373
OBUS	14,055	6.9	2,043
UBUS	9,096	4.6	1,997
MCY	541,296	42.2	12,837
SBUS	31,649	6.5	4,901
MH	135,131	5.9	22,989
Total (All Vehicles)	**23,733,952**	NA	**936,854**

[1] Total VMT may not match CalEEMod output due to rounding.

4.4.2 FACILITY ENERGY DEMANDS

Project building operations activities would result in the consumption of natural gas and electricity. Natural gas would be supplied to the Project by SoCalGas; electricity would be supplied to the Project by SCE. As previously stated, the analysis herein assumes compliance with the 2022 Title 24 Standards. Annual natural gas and electricity demands of the Project are summarized in Tables 4-14 and 4-15 and provided in Appendices 4.1.

TABLE 4-14: PROJECT ANNUAL OPERATIONAL NATURAL GAS DEMAND SUMMARY

Natural Gas Demand	kBTU/year
Office Park	7,365,637
Regional Shopping Center	29,611
Parking Lot	0
Condo/Townhouse	4,149,285
Single Family Housing	8,428,742
Other Asphalt Surfaces	0
TOTAL PROJECT NATURAL GAS DEMAND	***19,973,275***

kBTU – kilo-British Thermal Units

TABLE 4-15: PROJECT ANNUAL OPERATIONAL ELECTRICITY DEMAND SUMMARY

Electricity Demand	kWh/year
Office Park	4,657,327
Regional Shopping Center	48,792
Parking Lot	64,221
Condo/Townhouse	1,458,499
Single Family Housing	2,213,401
Other Asphalt Surfaces	0
TOTAL PROJECT ELECTRICITY DEMAND	***8,442,240***

4.4.3 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., Title24, California Green Building Standards Code). Additionally, the Project will be consistent with the City of Murrieta's CAP which further ensure that the Project would also result in a reduction of the Project's energy demand through compliance with the CAP strategies including the Zero Net Energy Standards, Transportation Demand Management, and Electric Vehicle Service Equipment.

ENHANCED VEHICLE FUEL EFFICIENCIES

Project annual fuel consumption estimates presented previously in Table 4-13 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 $59,030.42. 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 454,080 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 202,012 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 180,917 gallons of fuel. Additionally, fuel consumption from construction vendor and hauling trips (MHDTs and HHDTs) will total approximately 149,240 gallons. Diesel fuel would be supplied by regional commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved using bulk purchases, transport and use of construction materials. The 2021 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 (16). 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 would result in a fuel demand of 936,854 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 mixed residential and commercial uses of similar scale and configuration, as reflected respectively in the Institute of Transportation Engineers 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 other residential developments of similar size.

In addition, 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 in the future. 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. In compliance with the California Green Building Standards Code and City requirements including the City CAP, the innovation portion of the Project would promote the use of bicycles as an alternative mean of transportation by providing short-term and/or long-term bicycle parking accommodations. 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: 19,973,275 kBTU/year of natural gas; and 8,442,240 kWh/year of electricity. Natural gas would be supplied to the Project by SoCalGas; electricity would be supplied by SCE. The Project proposes conventional residences, retail spaces, commercial spaces, and offices that reflect 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 mixed use developments of similar scale and configuration.

Implementation of the Project would increase the demand for electricity and natural gas at the Project site and petroleum consumption in the region during operation. However, the electrical and natural gas consumption demands of the Project during operation would conform to the state's Title 24 and to CALGreen standards and the City CAP, 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 and natural gas are in compliance with regulatory requirements that assist in conservation, including requirements that electrical providers achieve state-mandated renewal energy production requirements. With compliance with Title 24 conservation standards and other regulatory requirements including the City CAP, 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 and CAP requirements such as installing on-site renewable energy for the residential component of the Project. Compliance with applicable Title 24 standards will ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary. Complying with the 2022 CAP will further reduce energy requirements for the Project.

4.6 ENERGY FINDINGS AND RECOMMENDATIONS

4.6.1 ENERGY IMPACT 1

Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

As supported by the preceding analyses, Project construction and operations would not result in the inefficient, wasteful, or unnecessary consumption of energy. The Project would therefore not cause or result in the need for additional energy producing or transmission facilities. The Project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California.

4.6.2 ENERGY IMPACT 2

Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The Project's consistency with the applicable state and local plans is discussed below.

CONSISTENCY WITH ISTEA

Transportation and access to the Project site is provided by the local and regional roadway systems. The Project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be realized pursuant to the ISTEA because Southern California Association of Governments is not planning for intermodal facilities on or through the Project site.

CONSISTENCY WITH TEA-21

The Project site is located near major transportation corridors with proximate access to the Interstate freeway system. The site selected for the Project facilitates access to regional transportation network, acts to reduce vehicle miles traveled by providing direct access to the regional transportation network, takes advantage of existing infrastructure systems (e.g., existing roads and freeways), and promotes land use compatibilities through collocation of employment and residential land uses. The Project supports the strong planning processes emphasized under TEA-21. The Project is therefore consistent with, and would not otherwise interfere with, nor obstruct implementation of TEA-21.

CONSISTENCY WITH IEPR

Electricity may be provided to the Project by SCE. SCE's *Clean Power and Electrification Pathway* white paper builds on existing state programs and policies. As such, the Project is consistent with, and would not otherwise interfere with, nor obstruct implementation the goals presented in the 2021 IEPR.

CONSISTENCY WITH STATE OF CALIFORNIA ENERGY PLAN

The Project site is located proximate to transportation corridors with access to the Interstate freeway system. The site selected for the Project facilitates access and takes advantage of existing infrastructure systems. The Project therefore supports urban design and planning processes identified under the State of California Energy Plan, is consistent with, and would not otherwise interfere with, nor obstruct implementation of the State of California Energy Plan.

CONSISTENCY WITH CALIFORNIA CODE TITLE 24, PART 6, ENERGY EFFICIENCY STANDARDS

The 2022 version of Title 24 was adopted by the CEC and will become effective on January 1, 2023. The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made. Therefore, the Project would not result in a significant impact on energy resources (31).

CONSISTENCY WITH CALIFORNIA CODE TITLE 24, PART 11, CALGREEN

As previously stated, CCR, Title 24, Part 11: CALGreen is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on January 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 which will become effective January 1, 2023. The proposed Project would be required to comply with the applicable standards in place at the time building permit document submittals are made.

CONSISTENCY WITH AB 1493

AB 1493 is not applicable to the Project as it is a statewide measure establishing vehicle emissions standards. No feature of the Project would interfere with implementation of the requirements under AB 1493.

CONSISTENCY WITH RPS

California's Renewable Portfolio Standard is not applicable to the Project as it is a statewide measure that establishes a renewable energy mix. No feature of the Project would interfere with implementation of the requirements under RPS.

CONSISTENCY WITH SB 350 AND SB 100

The proposed Project would use energy from SCE, which have committed to diversify their portfolio of energy sources by increasing energy from wind and solar sources. No feature of the Project would interfere with implementation of SB 350 and SB 100. Additionally, the Project would be designed and constructed to implement the energy efficiency measures for new commercial developments and would include several measures designed to reduce energy consumption.

CONSISTENCY WITH SCAG RTP/SCS

SCAG's 2020-2045 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), developed with input from local governments, including the City of Murrieta, establishes GHG emissions goals for automobiles and light-duty trucks for 2035, 2045 and implements an overall VMT reduction target for the region consistent with the statewide VMT-reduction targets under SB 375. Under SB 375, the VMT reduction targets must be incorporated within that region's RTP/SCS. Certain transportation planning and programming activities would then need to be consistent with the RTP/SCS; however, SB 375 expressly provides that the RTP/SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plan) are not required to be consistent with either the RTP/SCS.

The 2020-2045 RTP/SCS is a long-range visioning plan to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. Future investments seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. By furthering the goal of reducing vehicle miles traveled, the RTS/SCS has the effect of reducing energy consumption. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements through VMT reductions in the region. The RTP/SCS also promotes preservation of open space areas, improvements to public health and roadway safety, the vital

goods movement industry, and more efficient uses of resources. Because the project is mixed use residential and commercial, and businesses, it reduces VMT to potential jobs and shopping and provides energy reducing modes of accessing adjacent retail, commercial and businesses consistent with the goals of the RTP/SCS as implemented through Connect SoCal.

CONSISTENCY WITH THE GENERAL PLAN

1. Innovation Use

The proposed Project intends to develop Innovation land use within lot 1-4. As defined by the City of Murrieta's General Plan 2035 (32) (**General Plan**) as follows:

> *The Innovation designation provides for a wider variety and intensity of non-residential uses allowed elsewhere in the City with the goal of providing a cutting edge and campus-like mixed-use business setting. The Innovation designation provides for employment intensive uses such as business and medical offices, corporate headquarters, medical services, research and development, education, technological advancement, makers labs (such as people using digital tools to design new products) craftsman products (such as furniture and window design/construction), and hotels. The designation also provides for a limited amount of commercial uses for the sale of products made in facilities on-site and restaurants that support the employment and primary uses.*[6]

As identified the City's General Plan the Innovation District component allows for a variety of land uses and allows for a wide range of potential land uses, however, based on the traffic and VMT analysis the following land uses were evaluated:

- The City's General Plan traffic model assumes approximately 44 retail employees over the 83.2-acre traffic analysis zone (TAZ 43423201). This equates to approximately 0.53 employees per acre (44 employees /83.2 acres). Based on the proposed Project's Innovation District area of 18.6 gross acres, we calculated 10 employees. Using the County of Riverside's General Plan Appendix E, the 500 square feet per employee conversion factor was applied to translate 10 employees to 5,000 square feet (500 SF/emp x 10 emp). Thus, a 5,000 square foot commercial use was modeled for the commercial component of the Innovation District.
- Similarly, the City's General Plan traffic model assumed 1,970 non-retail employees over the 83.2-acre TAZ. This equates to approximately 23.68 employees per acre (1,970 employees/83.2 acres). Based on the proposed Project's Innovation District area of 18.6 gross acres, we calculated 445 employees. Using the County of Riverside's General Plan Appendix E, the 600 square feet per employee conversion factor was applied to translate 445 employees to 267,000 square feet (600 SF/emp x 445 emp). For the non-retail component of the Innovation District, it is assumed 267,000 square feet of business park use would be developed.

The Project's proposed Innovation use, as assumed, was derived from the City's general plan and would be consistent with the City's General Plan land use allowed maximum densities. The

[6] City General Plan; Page 3-26

Innovation component of the project would therefore be consistent with the land use assumed in the General Plan.

2. MULTIPLE-FAMILY RESIDENTIAL USE

The residential component of the proposed Project site is currently designated as Multiple-Family Residential land use based on the City's General Plan. The Multiple-Family Residential land use density standard allows a maximum of 30.0 dwelling units per acre (du/ac)[7]. The zoning for the site is Multiple Family 2 (MF-2). As noted in City of Murrieta 2014-2021 Housing Element (October 2018) (33) which allows for a maximum of 18.0 du/ac[8]. As noted previously, for purposes of this analysis, it is anticipated that development at the Project site would consist of 436 dwelling units on 28.5 net acres, which would not exceed 18.0 du/ac. The Project's proposed density does not exceed the land use assumptions evaluated by the City's updated General Plan and would therefore not generate VMT in excess of the land use assumed in the General Plan.

As shown above, the Project would not conflict with any of the state or local plans or regulations. As such, a less than significant impact is expected.

CONSISTENCY WITH CITY OF MURRIETA CAP UPDATE

The Project will be compliant with the goals and objectives set forth in the City of Murrieta's CAP Update (as previously presented on Table 3-1). Consistency with the CAP would also result in a reduction of the Project's energy demand through compliance with the CAP strategies including the Zero Net Energy Standards, Transportation Demand Management, and Electric Vehicle Service Equipment.

[7] City General Plan; Page 3-25
[8] Housing Element; Page 61

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6 CERTIFICATIONS

The contents of this energy analysis report represent an accurate depiction of the environmental impacts associated with the proposed Discovery Village. 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 (619) 778-1971.

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PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
APA – American Planning Association
AWMA – Air and Waste Management Association

PROFESSIONAL CERTIFICATIONS``

HARP Model Training – Bluescape Environmental • 2004
Air Dispersion Modeling – Lakes Environmental • 2008

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APPENDIX 4.1:

CALEEMOD INITIAL SITE PREPARATION CONSTRUCTION EMISSIONS MODEL OUTPUTS

14073-Discovery Village (Initial Site Construction) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14073-Discovery Village (Initial Site Construction)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.610265792900094, -117.16647726624267
County	Riverside-South Coast
City	Murrieta
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5545
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
User Defined Commercial	55.8	User Defined Unit	55.8	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	40.0	38.5	65.0	88.6	0.20	2.92	8.15	11.1	2.62	2.74	5.12	—	27,528	27,528	0.66	3.30	43.9	28,572
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.13	0.95	8.15	11.1	0.01	0.41	0.20	0.61	0.38	0.05	0.43	—	1,714	1,714	0.07	0.02	0.02	1,722
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.41	8.03	17.0	21.3	0.04	0.78	1.99	2.78	0.71	0.67	1.38	—	6,000	6,000	0.15	0.66	3.83	6,203
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.53	1.47	3.11	3.88	0.01	0.14	0.36	0.51	0.13	0.12	0.25	—	993	993	0.03	0.11	0.63	1,027

2.2. Construction Emissions by Year, Unmitigated

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

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

2023	40.0	38.5	65.0	88.6	0.20	2.92	8.15	11.1	2.62	2.74	5.12	—	27,528	27,528	0.66	3.30	43.9	28,572
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.13	0.95	8.15	11.1	0.01	0.41	0.20	0.61	0.38	0.05	0.43	—	1,714	1,714	0.07	0.02	0.02	1,722
2024	1.09	0.92	7.90	11.0	0.01	0.39	0.20	0.59	0.36	0.05	0.40	—	1,710	1,710	0.07	0.02	0.02	1,718
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	8.41	8.03	17.0	21.3	0.04	0.78	1.99	2.78	0.71	0.67	1.38	—	6,000	6,000	0.15	0.66	3.83	6,203
2024	0.05	0.04	0.34	0.47	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	—	73.7	73.7	< 0.005	< 0.005	0.02	74.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.53	1.47	3.11	3.88	0.01	0.14	0.36	0.51	0.13	0.12	0.25	—	993	993	0.03	0.11	0.63	1,027
2024	0.01	0.01	0.06	0.09	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	< 0.005	12.3

3. Construction Emissions Details

3.1. Site Preparation (2023) - 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	5.83	4.90	47.0	38.0	0.05	2.53	—	2.53	2.33	—	2.33	—	5,530	5,530	0.22	0.04	—	5,549
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	0.37	0.31	2.96	2.39	< 0.005	0.16	—	0.16	0.15	—	0.15	—	348	348	0.01	< 0.005	—	350
Dust From Material Movement	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
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	0.07	0.06	0.54	0.44	< 0.005	0.03	—	0.03	0.03	—	0.03	—	57.7	57.7	< 0.005	< 0.005	—	57.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	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	1.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	257	257	0.01	0.01	1.10	261
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	0.08	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	15.1	15.1	< 0.005	< 0.005	0.03	15.3
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	0.00	0.00	—	2.50	2.50	< 0.005	< 0.005	< 0.005	2.53
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

3.3. Grading (2023) - 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	39.0	38.0	41.6	81.2	0.06	2.54	—	2.54	2.24	—	2.24	—	6,893	6,893	0.28	0.06	—	6,917
Dust From Material Movement	—	—	—	—	—	—	2.70	2.70	—	0.98	0.98	—	—	—	—	—	—	—
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	7.70	7.50	8.20	16.0	0.01	0.50	—	0.50	0.44	—	0.44	—	1,360	1,360	0.06	0.01	—	1,364

Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.19	0.19	—	—	—	—	—	—	—
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	1.40	1.37	1.50	2.92	< 0.005	0.09	—	0.09	0.08	—	0.08	—	225	225	0.01	< 0.005	—	226
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.04	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.81	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	294	294	0.01	0.01	1.26	298
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	0.83	0.32	23.3	5.58	0.13	0.38	1.39	1.77	0.38	0.51	0.88	—	20,341	20,341	0.37	3.23	42.6	21,356
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	53.9	53.9	< 0.005	< 0.005	0.11	54.7
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	0.16	0.06	4.84	1.11	0.03	0.07	0.27	0.35	0.07	0.10	0.17	—	4,013	4,013	0.07	0.64	3.63	4,209
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.93	8.93	< 0.005	< 0.005	0.02	9.05
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	0.03	0.01	0.88	0.20	< 0.005	0.01	0.05	0.06	0.01	0.02	0.03	—	664	664	0.01	0.11	0.60	697

3.5. Paving (2023) - 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	1.04	0.88	8.06	10.0	0.01	0.41	—	0.41	0.38	—	0.38	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.04	0.03	0.32	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.08	0.09	1.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	202	202	0.01	0.01	0.02	205
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.03	8.03	< 0.005	< 0.005	0.02	8.14
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	0.00	0.00	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.35
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

3.7. Paving (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	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517

Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.04	0.04	0.34	0.43	< 0.005	0.02	—	0.02	0.02	—	0.02	—	65.1	65.1	< 0.005	< 0.005	—	65.3
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.07	0.09	0.95	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	198	198	0.01	0.01	0.02	201
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.65	8.65	< 0.005	< 0.005	0.02	8.77
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	0.00	0.00	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.45
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

3.9. Trenching (2023) - 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	0.54	0.46	3.53	4.44	0.01	0.17	—	0.17	0.16	—	0.16	—	639	639	0.03	0.01	—	642
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.46	3.53	4.44	0.01	0.17	—	0.17	0.16	—	0.16	—	639	639	0.03	0.01	—	642
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	0.10	0.09	0.68	0.85	< 0.005	0.03	—	0.03	0.03	—	0.03	—	123	123	< 0.005	< 0.005	—	123
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	0.12	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.3	20.3	< 0.005	< 0.005	—	20.4

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	0.04	0.04	0.04	0.68	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	110	110	< 0.005	< 0.005	0.47	112
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.05	0.52	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	101	101	< 0.005	< 0.005	0.01	102
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	19.7	19.7	< 0.005	< 0.005	0.04	19.9
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	0.00	0.00	—	3.26	3.26	< 0.005	< 0.005	0.01	3.30
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	4/25/2023	5/25/2023	5.00	23.0	—
Superpad Grading	Grading	5/26/2023	9/4/2023	5.00	72.0	—
Backbone Paving	Paving	12/12/2023	1/22/2024	5.00	30.0	—
Backbone Underground Utilities	Trenching	9/5/2023	12/11/2023	5.00	70.0	—

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
Superpad Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Superpad Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Superpad Grading	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Superpad Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Superpad Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Backbone Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42

Backbone Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Backbone Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Superpad Grading	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Backbone Underground Utilities	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Backbone Underground Utilities	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Backbone Underground Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Superpad Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

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	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Superpad Grading	—	—	—	—
Superpad Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Superpad Grading	Vendor	—	10.2	HHDT,MHDT
Superpad Grading	Hauling	286	20.0	HHDT
Superpad Grading	Onsite truck	—	—	HHDT
Backbone Underground Utilities	—	—	—	—
Backbone Underground Utilities	Worker	7.50	18.5	LDA,LDT1,LDT2
Backbone Underground Utilities	Vendor	—	10.2	HHDT,MHDT

Backbone Underground Utilities	Hauling	0.00	20.0	HHDT
Backbone Underground Utilities	Onsite truck	—	—	HHDT
Backbone Paving	—	—	—	—
Backbone Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Backbone Paving	Vendor	—	10.2	HHDT,MHDT
Backbone Paving	Hauling	0.00	20.0	HHDT
Backbone Paving	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	80.5	0.00	—
Superpad Grading	165,000	—	288	0.00	—
Backbone Paving	0.00	0.00	0.00	0.00	0.00

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
User Defined Commercial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	532	0.03	< 0.005
2024	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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	28.6	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.5	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	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	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	1	1	1	2

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	80.0
AQ-PM	40.4
AQ-DPM	31.3
Drinking Water	11.0
Lead Risk Housing	4.06
Pesticides	13.6
Toxic Releases	14.3
Traffic	81.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	73.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	31.6
Cardio-vascular	76.0
Low Birth Weights	56.6
Socioeconomic Factor Indicators	—
Education	40.1
Housing	12.8
Linguistic	8.49
Poverty	34.9
Unemployment	48.3

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	70.31951752
Employed	39.30450404
Median HI	80.88027717
Education	—
Bachelor's or higher	58.29590658
High school enrollment	100
Preschool enrollment	64.72475298
Transportation	—
Auto Access	89.83703323
Active commuting	12.60105223
Social	—
2-parent households	73.95098165
Voting	49.22366226
Neighborhood	—
Alcohol availability	89.3750802
Park access	2.194276915
Retail density	10.31695111
Supermarket access	18.61927371
Tree canopy	4.38855383
Housing	—
Homeownership	67.93276017
Housing habitability	86.16707301
Low-inc homeowner severe housing cost burden	69.34428333
Low-inc renter severe housing cost burden	80.27717182
Uncrowded housing	68.66418581

Health Outcomes	—
Insured adults	89.59322469
Arthritis	10.7
Asthma ER Admissions	78.7
High Blood Pressure	18.2
Cancer (excluding skin)	10.4
Asthma	46.1
Coronary Heart Disease	23.5
Chronic Obstructive Pulmonary Disease	33.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	83.5
Cognitively Disabled	29.3
Physically Disabled	73.0
Heart Attack ER Admissions	38.4
Mental Health Not Good	64.8
Chronic Kidney Disease	45.1
Obesity	48.4
Pedestrian Injuries	39.7
Physical Health Not Good	61.7
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	19.3
Current Smoker	59.6
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	18.1
SLR Inundation Area	0.0

Children	5.7
Elderly	87.4
English Speaking	95.5
Foreign-born	16.2
Outdoor Workers	58.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.9
Traffic Density	62.3
Traffic Access	23.0
Other Indices	—
Hardship	29.8
Other Decision Support	—
2016 Voting	55.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	67.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Initial Site Construction
Construction: Construction Phases	Taken from Updated Construction schedule
Construction: Off-Road Equipment	Client Indicated Equipment List

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APPENDIX 4.2:

CALEEMOD RESIDENTIAL CONSTRUCTION EMISSIONS MODEL OUTPUTS

14073-Discovery Village (Residential) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14073-Discovery Village (Residential)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.61081091086113, -117.16602601375352
County	Riverside-South Coast
City	Murrieta
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5545
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Condo/Townhouse	199	Dwelling Unit	12.4	210,940	0.00	—	643	—
Single Family Housing	237	Dwelling Unit	16.1	462,150	2,775,947	—	766	—

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.	5.35	7.89	41.7	39.2	0.07	2.15	3.98	5.35	1.98	1.07	3.05	—	8,204	8,204	0.31	0.38	19.7	8,343
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.34	7.81	41.7	35.6	0.07	2.15	3.98	5.35	1.98	1.07	3.05	—	7,885	7,885	0.32	0.38	0.51	8,006
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.15	5.38	11.1	23.6	0.03	0.37	2.81	3.19	0.35	0.67	1.02	—	5,596	5,596	0.22	0.27	5.63	5,687
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.39	0.98	2.03	4.31	< 0.005	0.07	0.51	0.58	0.06	0.12	0.19	—	926	926	0.04	0.04	0.93	942

2.2. Construction Emissions by Year, Unmitigated

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

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

2024	5.35	7.89	41.7	39.2	0.07	2.15	3.98	5.35	1.98	1.07	3.05	—	8,204	8,204	0.31	0.38	19.7	8,343
2025	3.20	7.61	15.3	37.3	0.04	0.52	3.98	4.51	0.48	0.95	1.43	—	8,101	8,101	0.31	0.38	18.3	8,238
2026	2.93	7.47	14.4	35.7	0.04	0.46	3.98	4.45	0.43	0.95	1.38	—	7,994	7,994	0.31	0.37	16.7	8,129
2027	2.81	7.36	13.7	34.2	0.04	0.41	3.98	4.40	0.38	0.95	1.33	—	7,898	7,898	0.19	0.36	15.0	8,025
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.34	7.81	41.7	35.6	0.07	2.15	3.98	5.35	1.98	1.07	3.05	—	7,885	7,885	0.32	0.38	0.51	8,006
2025	3.02	7.54	15.5	32.2	0.04	0.52	3.98	4.51	0.48	0.95	1.43	—	7,790	7,790	0.31	0.38	0.47	7,910
2026	2.87	7.41	14.6	31.0	0.04	0.46	3.98	4.45	0.43	0.95	1.38	—	7,691	7,691	0.20	0.38	0.43	7,808
2027	2.75	7.30	13.9	29.8	0.04	0.41	3.98	4.40	0.38	0.95	1.33	—	7,601	7,601	0.19	0.36	0.39	7,713
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.51	2.86	8.82	14.4	0.02	0.37	1.47	1.84	0.34	0.37	0.71	—	3,166	3,166	0.13	0.12	2.76	3,209
2025	2.15	5.38	11.1	23.6	0.03	0.37	2.81	3.19	0.35	0.67	1.02	—	5,596	5,596	0.22	0.27	5.63	5,687
2026	2.04	5.29	10.5	22.6	0.03	0.33	2.81	3.14	0.30	0.67	0.97	—	5,524	5,524	0.14	0.27	5.13	5,613
2027	1.59	4.23	8.09	17.6	0.02	0.24	2.28	2.52	0.22	0.54	0.76	—	4,428	4,428	0.11	0.21	3.76	4,496
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.28	0.52	1.61	2.63	< 0.005	0.07	0.27	0.34	0.06	0.07	0.13	—	524	524	0.02	0.02	0.46	531
2025	0.39	0.98	2.03	4.31	< 0.005	0.07	0.51	0.58	0.06	0.12	0.19	—	926	926	0.04	0.04	0.93	942
2026	0.37	0.96	1.92	4.13	< 0.005	0.06	0.51	0.57	0.06	0.12	0.18	—	915	915	0.02	0.04	0.85	929
2027	0.29	0.77	1.48	3.22	< 0.005	0.04	0.42	0.46	0.04	0.10	0.14	—	733	733	0.02	0.03	0.62	744

3. Construction Emissions Details

3.1. 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	5.24	4.40	41.6	34.4	0.07	2.15	—	2.15	1.98	—	1.98	—	7,129	7,129	0.29	0.06	—	7,154
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.24	4.40	41.6	34.4	0.07	2.15	—	2.15	1.98	—	1.98	—	7,129	7,129	0.29	0.06	—	7,154
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.62	2.17	< 0.005	0.14	—	0.14	0.12	—	0.12	—	449	449	0.02	< 0.005	—	451
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.06	0.06	—	—	—	—	—	—	—
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	0.48	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	74.4	74.4	< 0.005	< 0.005	—	74.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.67	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	1.14	292
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	265	265	0.01	0.01	0.03	268
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.80	2.80	< 0.005	< 0.005	0.01	2.83
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

3.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.83	4.48	0.01	0.17	—	0.17	0.16	—	0.16	—	829	829	0.03	0.01	—	832
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	0.09	0.07	0.70	0.82	< 0.005	0.03	—	0.03	0.03	—	0.03	—	137	137	0.01	< 0.005	—	138
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	1.29	1.17	1.10	19.1	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	3,290	3,290	0.14	0.11	13.1	3,341
Vendor	0.07	0.04	1.64	0.51	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,447	1,447	0.03	0.22	4.08	1,517
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	1.22	1.10	1.30	14.4	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	3,024	3,024	0.14	0.11	0.34	3,062
Vendor	0.06	0.04	1.72	0.52	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,448	1,448	0.03	0.22	0.11	1,514
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	0.38	0.35	0.41	4.79	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	965	965	0.05	0.04	1.78	978
Vendor	0.02	0.01	0.54	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	456	456	0.01	0.07	0.55	477
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	0.07	0.06	0.07	0.87	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	160	160	0.01	0.01	0.29	162
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	75.5	75.5	< 0.005	0.01	0.09	79.0
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

3.5. 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	1.04	0.87	8.08	10.1	0.02	0.33	—	0.33	0.31	—	0.31	—	1,879	1,879	0.08	0.02	—	1,885
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	0.19	0.16	1.47	1.84	< 0.005	0.06	—	0.06	0.06	—	0.06	—	311	311	0.01	< 0.005	—	312
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	1.23	1.02	1.00	17.7	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	3,222	3,222	0.13	0.11	11.8	3,271
Vendor	0.06	0.03	1.57	0.49	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,426	1,426	0.03	0.22	4.05	1,495
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	1.08	0.96	1.10	13.3	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	2,962	2,962	0.14	0.11	0.31	2,999

Vendor	0.06	0.03	1.64	0.50	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,427	1,427	0.03	0.22	0.11	1,492
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	0.76	0.68	0.85	10.1	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,143	2,143	0.10	0.08	3.65	2,173
Vendor	0.05	0.02	1.17	0.35	0.01	0.01	0.06	0.07	0.01	0.02	0.04	—	1,019	1,019	0.02	0.15	1.25	1,067
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	0.14	0.12	0.16	1.84	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	355	355	0.02	0.01	0.60	360
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	169	169	< 0.005	0.03	0.21	177
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 (2026) - 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	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	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	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	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	0.99	0.83	7.62	10.0	0.02	0.29	—	0.29	0.27	—	0.27	—	1,878	1,878	0.08	0.02	—	1,885
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	0.18	0.15	1.39	1.83	< 0.005	0.05	—	0.05	0.05	—	0.05	—	311	311	0.01	< 0.005	—	312
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	1.08	0.97	0.90	16.4	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	3,153	3,153	0.13	0.11	10.7	3,199
Vendor	0.06	0.03	1.50	0.46	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,403	1,403	0.03	0.22	3.84	1,472
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	1.03	0.91	1.00	12.4	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	2,899	2,899	0.05	0.11	0.28	2,934
Vendor	0.06	0.03	1.56	0.48	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,404	1,404	0.03	0.22	0.10	1,470
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	0.73	0.65	0.78	9.30	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,097	2,097	0.03	0.08	3.30	2,125
Vendor	0.04	0.02	1.12	0.34	0.01	0.01	0.06	0.07	0.01	0.02	0.04	—	1,002	1,002	0.02	0.15	1.18	1,050
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	0.13	0.12	0.14	1.70	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	347	347	0.01	0.01	0.55	352

Vendor	0.01	< 0.005	0.20	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	166	166	< 0.005	0.03	0.19	174
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - 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	1.33	1.11	10.2	14.0	0.03	0.36	—	0.36	0.34	—	0.34	—	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	1.33	1.11	10.2	14.0	0.03	0.36	—	0.36	0.34	—	0.34	—	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	0.77	0.64	5.89	8.13	0.01	0.21	—	0.21	0.19	—	0.19	—	1,523	1,523	0.06	0.01	—	1,529
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	0.14	0.12	1.08	1.48	< 0.005	0.04	—	0.04	0.04	—	0.04	—	252	252	0.01	< 0.005	—	253
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	1.03	0.92	0.79	15.2	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	3,094	3,094	0.04	0.11	9.61	3,137
Vendor	0.06	0.03	1.44	0.45	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,377	1,377	0.03	0.21	3.51	1,443
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	0.98	0.87	0.90	11.5	0.00	0.00	0.19	0.19	0.00	0.00	0.00	—	2,846	2,846	0.04	0.11	0.25	2,879
Vendor	0.06	0.03	1.51	0.47	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,378	1,378	0.03	0.21	0.09	1,441
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	0.57	0.50	0.57	6.98	0.00	0.00	0.11	0.11	0.00	0.00	0.00	—	1,669	1,669	0.02	0.06	2.40	1,691
Vendor	0.04	0.02	0.87	0.27	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	798	798	0.02	0.12	0.88	835
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	0.10	0.09	0.10	1.27	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	276	276	< 0.005	0.01	0.40	280
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	132	132	< 0.005	0.02	0.15	138
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (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	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.77	0.99	< 0.005	0.04	—	0.04	0.04	—	0.04	—	149	149	0.01	< 0.005	—	150
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.14	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.7	24.7	< 0.005	< 0.005	—	24.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	1.25	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	216	216	0.01	0.01	0.86	219
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	< 0.005	< 0.005	0.00	0.00	0.00	—	19.8	19.8	< 0.005	< 0.005	0.04	20.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.28	3.28	< 0.005	< 0.005	0.01	3.33
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

3.13. Architectural Coating (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	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.38	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.1	56.1	< 0.005	< 0.005	—	56.3
Architectural Coatings	—	1.57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.29	9.29	< 0.005	< 0.005	—	9.32
Architectural Coatings	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.26	0.23	0.22	3.82	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	658	658	0.03	0.02	2.61	668
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.26	2.89	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	605	605	0.03	0.02	0.07	612
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.96	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	193	193	0.01	0.01	0.36	196

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	0.01	0.01	0.01	0.17	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	32.0	32.0	< 0.005	< 0.005	0.06	32.4
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

3.15. 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	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	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	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.84	1.09	< 0.005	0.03	—	0.03	0.02	—	0.02	—	127	127	0.01	< 0.005	—	128
Architectural Coatings	—	3.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.02	0.15	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.1
Architectural Coatings	—	0.65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.25	0.20	0.20	3.53	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	644	644	0.03	0.02	2.37	654
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.22	2.67	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	592	592	0.03	0.02	0.06	600
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.17	2.01	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	429	429	0.02	0.02	0.73	435

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	0.03	0.02	0.03	0.37	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	70.9	70.9	< 0.005	< 0.005	0.12	71.9
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

3.17. Architectural Coating (2026) - 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	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.82	1.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	128
Architectural Coatings	—	3.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.02	0.15	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.1
Architectural Coatings	—	0.65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.22	0.19	0.18	3.28	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	631	631	0.03	0.02	2.14	640
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.20	2.49	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	580	580	0.01	0.02	0.06	587
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.13	0.16	1.86	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	419	419	0.01	0.02	0.66	425

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	0.03	0.02	0.03	0.34	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	69.4	69.4	< 0.005	< 0.005	0.11	70.4
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

3.19. Architectural Coating (2027) - 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	0.18	0.15	1.11	1.50	< 0.005	0.03	—	0.03	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.11	1.50	< 0.005	0.03	—	0.03	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.64	0.87	< 0.005	0.01	—	0.01	0.01	—	0.01	—	103	103	< 0.005	< 0.005	—	103
Architectural Coatings	—	2.88	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.12	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.1	17.1	< 0.005	< 0.005	—	17.1
Architectural Coatings	—	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.21	0.18	0.16	3.04	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	619	619	0.01	0.02	1.92	627
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.17	0.18	2.30	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	569	569	0.01	0.02	0.05	576
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.40	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	334	334	< 0.005	0.01	0.48	338

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	0.02	0.02	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	55.3	55.3	< 0.005	< 0.005	0.08	56.0
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

3.21. Trenching (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	0.37	0.31	2.19	2.50	< 0.005	0.10	—	0.10	0.09	—	0.09	—	349	349	0.01	< 0.005	—	350
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	0.03	0.02	0.17	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9
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	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.43	4.43	< 0.005	< 0.005	—	4.45

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	0.03	0.03	0.02	0.42	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	72.0	72.0	< 0.005	< 0.005	0.29	73.1
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	< 0.005	< 0.005	0.00	0.00	0.00	—	5.14	5.14	< 0.005	< 0.005	0.01	5.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.86
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
InTract Rough Grading	Grading	3/24/2024	4/24/2024	5.00	23.0	—
Building Construction & finish Grade	Building Construction	7/24/2024	10/23/2027	5.00	848	—
InTract Paving	Paving	6/4/2024	7/23/2024	5.00	36.0	—
Architectural Coating	Architectural Coating	7/24/2024	10/23/2027	5.00	848	—
InTract Underground Utilities	Trenching	4/25/2024	6/3/2024	5.00	28.0	—

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
InTract Rough Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
InTract Rough Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
InTract Rough Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
InTract Rough Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
InTract Rough Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction & finish Grade	Cranes	Diesel	Average	1.00	8.00	367	0.29

Building Construction & finish Grade	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction & finish Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction & finish Grade	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction & finish Grade	Welders	Diesel	Average	1.00	8.00	46.0	0.45
InTract Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
InTract Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
InTract 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
InTract Underground Utilities	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
InTract Underground Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
InTract Underground Utilities	—	—	—	—
InTract Underground Utilities	Worker	5.00	18.5	LDA,LDT1,LDT2
InTract Underground Utilities	Vendor	—	10.2	HHDT,MHDT
InTract Underground Utilities	Hauling	0.00	20.0	HHDT
InTract Underground Utilities	Onsite truck	—	—	HHDT
InTract Rough Grading	—	—	—	—
InTract Rough Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
InTract Rough Grading	Vendor	—	10.2	HHDT,MHDT
InTract Rough Grading	Hauling	0.00	20.0	HHDT

InTract Rough Grading	Onsite truck	—	—	HHDT
Building Construction & finish Grade	—	—	—	—
Building Construction & finish Grade	Worker	229	18.5	LDA,LDT1,LDT2
Building Construction & finish Grade	Vendor	46.6	10.2	HHDT,MHDT
Building Construction & finish Grade	Hauling	0.00	20.0	HHDT
Building Construction & finish Grade	Onsite truck	—	—	HHDT
InTract Paving	—	—	—	—
InTract Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
InTract Paving	Vendor	—	10.2	HHDT,MHDT
InTract Paving	Hauling	0.00	20.0	HHDT
InTract Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	45.7	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	1,363,007	454,336	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
InTract Rough Grading	—	—	115	0.00	—
InTract Paving	0.00	0.00	0.00	0.00	2.61

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
Condo/Townhouse	—	0%
Single Family Housing	2.61	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	28.6	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.5	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	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	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A

Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	1	1	1	2

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	80.0
AQ-PM	40.4
AQ-DPM	31.3
Drinking Water	11.0
Lead Risk Housing	4.06
Pesticides	13.6
Toxic Releases	14.3
Traffic	81.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	73.6

Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	31.6
Cardio-vascular	76.0
Low Birth Weights	56.6
Socioeconomic Factor Indicators	—
Education	40.1
Housing	12.8
Linguistic	8.49
Poverty	34.9
Unemployment	48.3

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	70.31951752
Employed	39.30450404
Median HI	80.88027717
Education	—
Bachelor's or higher	58.29590658
High school enrollment	100
Preschool enrollment	64.72475298
Transportation	—
Auto Access	89.83703323
Active commuting	12.60105223

Social	—
2-parent households	73.95098165
Voting	49.22366226
Neighborhood	—
Alcohol availability	89.3750802
Park access	2.194276915
Retail density	10.31695111
Supermarket access	18.61927371
Tree canopy	4.38855383
Housing	—
Homeownership	67.93276017
Housing habitability	86.16707301
Low-inc homeowner severe housing cost burden	69.34428333
Low-inc renter severe housing cost burden	80.27717182
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	89.59322469
Arthritis	10.7
Asthma ER Admissions	78.7
High Blood Pressure	18.2
Cancer (excluding skin)	10.4
Asthma	46.1
Coronary Heart Disease	23.5
Chronic Obstructive Pulmonary Disease	33.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	83.5
Cognitively Disabled	29.3

Physically Disabled	73.0
Heart Attack ER Admissions	38.4
Mental Health Not Good	64.8
Chronic Kidney Disease	45.1
Obesity	48.4
Pedestrian Injuries	39.7
Physical Health Not Good	61.7
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	19.3
Current Smoker	59.6
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	18.1
SLR Inundation Area	0.0
Children	5.7
Elderly	87.4
English Speaking	95.5
Foreign-born	16.2
Outdoor Workers	58.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.9
Traffic Density	62.3
Traffic Access	23.0
Other Indices	—
Hardship	29.8
Other Decision Support	—

2016 Voting	55.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	67.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Taken from site plan and lot acreage
Construction: Construction Phases	Client Indicated schedule
Construction: Off-Road Equipment	Client Indicated Construction Equipment

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APPENDIX 4.3:

CALEEMOD INNOVATION/RETAIL CONSTRUCTION EMISSIONS MODEL OUTPUTS

14073-Discovery Village (Innovation/Commercial) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14073-Discovery Village (Innovation/Commercial)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.60967394045453, -117.16743356137664
County	Riverside-South Coast
City	Murrieta
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5545
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Office Park	267	1000sqft	13.1	267,000	0.00	—	—	—
Regional Shopping Center	5.00	1000sqft	3.47	5,000	0.00	—	—	—
Parking Lot	187	Space	1.68	0.00	0.00	—	—	—

Other Asphalt Surfaces	9.06	Acre	9.06	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.35	6.49	41.7	36.0	0.07	2.15	3.21	5.35	1.98	1.07	3.05	—	7,417	7,417	0.30	0.28	9.28	7,446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.34	6.46	41.7	35.6	0.07	2.15	3.21	5.35	1.98	1.07	3.05	—	7,394	7,394	0.30	0.28	0.24	7,422
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.52	4.39	10.1	15.6	0.03	0.37	1.16	1.53	0.34	0.28	0.62	—	3,787	3,787	0.14	0.19	2.70	3,850
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.28	0.80	1.85	2.85	< 0.005	0.07	0.21	0.28	0.06	0.05	0.11	—	627	627	0.02	0.03	0.45	637

2.2. Construction Emissions by Year, Unmitigated

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

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

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.35	4.50	41.7	36.0	0.07	2.15	3.21	5.35	1.98	1.07	3.05	—	7,417	7,417	0.30	0.07	1.14	7,446
2025	2.28	6.49	14.4	24.2	0.04	0.52	1.75	2.27	0.48	0.43	0.91	—	5,644	5,644	0.20	0.28	9.28	5,743
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.34	4.50	41.7	35.6	0.07	2.15	3.21	5.35	1.98	1.07	3.05	—	7,394	7,394	0.30	0.07	0.03	7,422
2025	2.21	6.46	14.6	22.2	0.04	0.52	1.75	2.27	0.48	0.43	0.91	—	5,527	5,527	0.21	0.28	0.24	5,616
2026	2.10	6.37	13.8	21.7	0.04	0.46	1.75	2.21	0.43	0.43	0.85	—	5,475	5,475	0.16	0.28	0.22	5,564
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.43	0.40	3.23	3.07	0.01	0.16	0.22	0.38	0.15	0.07	0.22	—	592	592	0.02	0.01	0.06	594
2025	1.52	4.39	10.1	15.6	0.03	0.37	1.16	1.53	0.34	0.28	0.62	—	3,787	3,787	0.14	0.19	2.70	3,850
2026	0.34	1.02	2.22	3.53	0.01	0.07	0.28	0.35	0.07	0.07	0.14	—	881	881	0.03	0.05	0.59	896
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.59	0.56	< 0.005	0.03	0.04	0.07	0.03	0.01	0.04	—	98.0	98.0	< 0.005	< 0.005	0.01	98.4
2025	0.28	0.80	1.85	2.85	< 0.005	0.07	0.21	0.28	0.06	0.05	0.11	—	627	627	0.02	0.03	0.45	637
2026	0.06	0.19	0.40	0.64	< 0.005	0.01	0.05	0.06	0.01	0.01	0.02	—	146	146	< 0.005	0.01	0.10	148

3. Construction Emissions Details

3.1. 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	5.24	4.40	41.6	34.4	0.07	2.15	—	2.15	1.98	—	1.98	—	7,129	7,129	0.29	0.06	—	7,154
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.24	4.40	41.6	34.4	0.07	2.15	—	2.15	1.98	—	1.98	—	7,129	7,129	0.29	0.06	—	7,154
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.62	2.17	< 0.005	0.14	—	0.14	0.12	—	0.12	—	449	449	0.02	< 0.005	—	451
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.06	0.06	—	—	—	—	—	—	—
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	0.48	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	74.4	74.4	< 0.005	< 0.005	—	74.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.67	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	1.14	292
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	265	265	0.01	0.01	0.03	268
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.80	2.80	< 0.005	< 0.005	0.01	2.83
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

3.3. 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	0.97	0.81	7.57	9.47	0.02	0.31	—	0.31	0.29	—	0.29	—	1,760	1,760	0.07	0.01	—	1,766
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	0.18	0.15	1.38	1.73	< 0.005	0.06	—	0.06	0.05	—	0.05	—	291	291	0.01	< 0.005	—	292
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	0.47	0.39	0.38	6.72	0.00	0.00	0.07	0.07	0.00	0.00	0.00	—	1,227	1,227	0.05	0.04	4.51	1,245
Vendor	0.06	0.03	1.50	0.47	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,364	1,364	0.03	0.21	3.87	1,430
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	0.41	0.37	0.42	5.08	0.00	0.00	0.07	0.07	0.00	0.00	0.00	—	1,128	1,128	0.05	0.04	0.12	1,142
Vendor	0.06	0.03	1.57	0.48	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,365	1,365	0.03	0.21	0.10	1,428
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	0.27	0.24	0.31	3.59	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	764	764	0.04	0.03	1.30	775
Vendor	0.04	0.02	1.05	0.32	0.01	0.01	0.05	0.07	0.01	0.02	0.03	—	913	913	0.02	0.14	1.12	956
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	0.05	0.04	0.06	0.66	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	127	127	0.01	< 0.005	0.22	128
Vendor	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	151	151	< 0.005	0.02	0.19	158
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 (2026) - 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	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	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	0.22	0.19	1.71	2.26	< 0.005	0.07	—	0.07	0.06	—	0.06	—	422	422	0.02	< 0.005	—	423
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	0.31	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	69.9	69.9	< 0.005	< 0.005	—	70.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.35	0.38	4.74	0.00	0.00	0.07	0.07	0.00	0.00	0.00	—	1,104	1,104	0.02	0.04	0.11	1,117
Vendor	0.06	0.03	1.49	0.46	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,343	1,343	0.03	0.21	0.10	1,406
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	0.06	0.06	0.07	0.80	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	179	179	< 0.005	0.01	0.28	182
Vendor	0.01	< 0.005	0.24	0.07	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	215	215	< 0.005	0.03	0.25	226
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	0.15	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	29.7	29.7	< 0.005	< 0.005	0.05	30.1
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	35.7	35.7	< 0.005	0.01	0.04	37.4
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

3.7. Paving (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	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	0.95	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	198	198	0.01	0.01	0.02	201
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	11.0	11.0	< 0.005	< 0.005	0.02	11.2
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	0.00	0.00	—	1.82	1.82	< 0.005	< 0.005	< 0.005	1.85
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

3.9. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	0.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	0.04	0.04	0.34	0.45	< 0.005	0.02	—	0.02	0.01	—	0.01	—	68.0	68.0	< 0.005	< 0.005	—	68.3
Paving	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	194	194	0.01	0.01	0.02	197
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.86	8.86	< 0.005	< 0.005	0.02	8.98
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	0.00	0.00	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.49

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	—	4.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	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	—	4.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.14	0.11	0.79	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	119	119	< 0.005	< 0.005	—	120

Architectural Coatings	—	3.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.02	0.14	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.7	19.7	< 0.005	< 0.005	—	19.8
Architectural Coatings	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	1.34	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	245	245	0.01	0.01	0.90	249
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.02	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	226	226	0.01	0.01	0.02	228
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.06	0.72	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	153	153	0.01	0.01	0.26	155
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	0.01	0.01	0.01	0.13	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	25.3	25.3	< 0.005	< 0.005	0.04	25.7
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

3.13. Architectural Coating (2026) - 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	0.19	0.16	1.14	1.51	< 0.005	0.03	—	0.03	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	4.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.03	0.18	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.6	28.6	< 0.005	< 0.005	—	28.7
Architectural Coatings	—	0.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.73	4.73	< 0.005	< 0.005	—	4.75
Architectural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.07	0.08	0.95	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	221	221	< 0.005	0.01	0.02	223
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	35.9	35.9	< 0.005	< 0.005	0.06	36.4
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	0.03	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	5.94	5.94	< 0.005	< 0.005	0.01	6.02
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

3.15. Trenching (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	0.37	0.31	2.19	2.50	< 0.005	0.10	—	0.10	0.09	—	0.09	—	349	349	0.01	< 0.005	—	350
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	0.03	0.02	0.17	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9
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	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.43	4.43	< 0.005	< 0.005	—	4.45
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	0.03	0.02	0.03	0.32	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	66.1	66.1	< 0.005	< 0.005	0.01	67.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	5.14	5.14	< 0.005	< 0.005	0.01	5.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.86
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
InTract Rough Grading	Grading	9/24/2024	10/24/2024	5.00	23.0	—

Building Construction & Finish Grade	Building Construction	1/24/2025	3/23/2026	5.00	302	—
InTract Paving	Paving	12/4/2024	1/23/2025	5.00	37.0	—
Architectural Coating	Architectural Coating	1/24/2025	3/23/2026	5.00	302	—
InTract Underground Utilities	Trenching	10/25/2024	12/3/2024	5.00	28.0	—

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
InTract Rough Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
InTract Rough Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
InTract Rough Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
InTract Rough Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
InTract Rough Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction & Finish Grade	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction & Finish Grade	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction & Finish Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction & Finish Grade	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction & Finish Grade	Welders	Diesel	Average	1.00	8.00	46.0	0.45
InTract Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
InTract Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
InTract 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

InTract Underground Utilities	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
InTract Underground Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
InTract Underground Utilities	—	—	—	—
InTract Underground Utilities	Worker	5.00	18.5	LDA,LDT1,LDT2
InTract Underground Utilities	Vendor	—	10.2	HHDT,MHDT
InTract Underground Utilities	Hauling	0.00	20.0	HHDT
InTract Underground Utilities	Onsite truck	—	—	HHDT
InTract Rough Grading	—	—	—	—
InTract Rough Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
InTract Rough Grading	Vendor	—	10.2	HHDT,MHDT
InTract Rough Grading	Hauling	0.00	20.0	HHDT
InTract Rough Grading	Onsite truck	—	—	HHDT
Building Construction & Finish Grade	—	—	—	—
Building Construction & Finish Grade	Worker	87.0	18.5	LDA,LDT1,LDT2
Building Construction & Finish Grade	Vendor	44.6	10.2	HHDT,MHDT
Building Construction & Finish Grade	Hauling	0.00	20.0	HHDT
Building Construction & Finish Grade	Onsite truck	—	—	HHDT
InTract Paving	—	—	—	—
InTract Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
InTract Paving	Vendor	—	10.2	HHDT,MHDT
InTract Paving	Hauling	0.00	20.0	HHDT

InTract Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	17.4	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	408,000	136,000	28,078

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
InTract Rough Grading	—	—	115	0.00	—
InTract Paving	0.00	0.00	0.00	0.00	10.7

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
Office Park	0.00	0%
Regional Shopping Center	0.00	0%
Parking Lot	1.68	100%
Other Asphalt Surfaces	9.06	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
2026	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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	28.6	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.5	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	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	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	1	1	1	2

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	80.0
AQ-PM	40.4
AQ-DPM	31.3
Drinking Water	11.0
Lead Risk Housing	4.06
Pesticides	13.6
Toxic Releases	14.3
Traffic	81.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	73.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	31.6
Cardio-vascular	76.0
Low Birth Weights	56.6
Socioeconomic Factor Indicators	—
Education	40.1
Housing	12.8

Linguistic	8.49
Poverty	34.9
Unemployment	48.3

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	70.31951752
Employed	39.30450404
Median HI	80.88027717
Education	—
Bachelor's or higher	58.29590658
High school enrollment	100
Preschool enrollment	64.72475298
Transportation	—
Auto Access	89.83703323
Active commuting	12.60105223
Social	—
2-parent households	73.95098165
Voting	49.22366226
Neighborhood	—
Alcohol availability	89.3750802
Park access	2.194276915
Retail density	10.31695111
Supermarket access	18.61927371
Tree canopy	4.38855383

Housing	—
Homeownership	67.93276017
Housing habitability	86.16707301
Low-inc homeowner severe housing cost burden	69.34428333
Low-inc renter severe housing cost burden	80.27717182
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	89.59322469
Arthritis	10.7
Asthma ER Admissions	78.7
High Blood Pressure	18.2
Cancer (excluding skin)	10.4
Asthma	46.1
Coronary Heart Disease	23.5
Chronic Obstructive Pulmonary Disease	33.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	83.5
Cognitively Disabled	29.3
Physically Disabled	73.0
Heart Attack ER Admissions	38.4
Mental Health Not Good	64.8
Chronic Kidney Disease	45.1
Obesity	48.4
Pedestrian Injuries	39.7
Physical Health Not Good	61.7
Stroke	51.7
Health Risk Behaviors	—

Binge Drinking	19.3
Current Smoker	59.6
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	18.1
SLR Inundation Area	0.0
Children	5.7
Elderly	87.4
English Speaking	95.5
Foreign-born	16.2
Outdoor Workers	58.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.9
Traffic Density	62.3
Traffic Access	23.0
Other Indices	—
Hardship	29.8
Other Decision Support	—
2016 Voting	55.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	67.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Taken from site plan
Construction: Construction Phases	Client Indicated Schedule
Construction: Off-Road Equipment	Client Indicated Construction Equipment
Construction: Architectural Coatings	SCAQMD Rule 1113

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APPENDIX 4.4:

CALEEMOD OPERATIONAL EMISSIONS MODEL OUTPUTS

14073-Discovery Village (Operations) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14073-Discovery Village (Operations)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	33.6110499614919, -117.16773396878716
County	Riverside-South Coast
City	Murrieta
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5545
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Office Park	267	1000sqft	13.1	267,000	0.00	—	—	—
Regional Shopping Center	5.00	1000sqft	3.47	5,000	0.00	—	—	—
Parking Lot	187	Space	1.68	0.00	0.00	—	—	—

Condo/Townhouse	199	Dwelling Unit	12.4	210,940	0.00	—	643	—
Single Family Housing	237	Dwelling Unit	16.1	462,150	2,775,947	—	766	—
Other Asphalt Surfaces	9.06	Acre	9.06	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	36.1	54.5	37.5	282	0.69	1.40	21.5	22.9	1.38	3.82	5.20	406	86,418	86,823	44.6	3.07	205	89,058
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	30.0	48.6	38.9	207	0.65	1.38	21.5	22.9	1.35	3.82	5.17	406	82,472	82,877	44.7	3.15	9.89	84,943
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	27.8	47.0	29.2	204	0.53	0.83	18.1	18.9	0.81	3.20	4.02	406	65,752	66,157	44.2	2.71	77.1	68,147
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.08	8.58	5.33	37.2	0.10	0.15	3.29	3.45	0.15	0.58	0.73	67.1	10,886	10,953	7.32	0.45	12.8	11,283

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	30.4	27.9	25.4	240	0.62	0.44	21.5	22.0	0.41	3.82	4.23	—	63,269	63,269	2.40	2.76	200	64,350
Area	5.16	26.3	6.85	39.4	0.04	0.55	—	0.55	0.56	—	0.56	0.00	8,377	8,377	0.16	0.03	—	8,389
Energy	0.59	0.30	5.16	3.02	0.03	0.41	—	0.41	0.41	—	0.41	—	14,408	14,408	1.33	0.10	—	14,473
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Waste	—	—	—	—	—	—	—	—	—	—	—	333	0.00	333	33.3	0.00	—	1,165
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Total	36.1	54.5	37.5	282	0.69	1.40	21.5	22.9	1.38	3.82	5.20	406	86,418	86,823	44.6	3.07	205	89,058
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	28.6	26.1	27.3	201	0.58	0.44	21.5	22.0	0.41	3.82	4.23	—	59,438	59,438	2.50	2.84	5.18	60,353
Area	0.76	22.2	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Energy	0.59	0.30	5.16	3.02	0.03	0.41	—	0.41	0.41	—	0.41	—	14,408	14,408	1.33	0.10	—	14,473
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Waste	—	—	—	—	—	—	—	—	—	—	—	333	0.00	333	33.3	0.00	—	1,165
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Total	30.0	48.6	38.9	207	0.65	1.38	21.5	22.9	1.35	3.82	5.17	406	82,472	82,877	44.7	3.15	9.89	84,943
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	24.2	22.1	23.4	176	0.49	0.37	18.1	18.4	0.35	3.20	3.55	—	50,335	50,335	2.12	2.42	72.4	51,180
Area	3.06	24.6	0.68	25.2	< 0.005	0.05	—	0.05	0.06	—	0.06	0.00	645	645	0.01	0.01	—	647
Energy	0.59	0.30	5.16	3.02	0.03	0.41	—	0.41	0.41	—	0.41	—	14,408	14,408	1.33	0.10	—	14,473
Water	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Waste	—	—	—	—	—	—	—	—	—	—	—	333	0.00	333	33.3	0.00	—	1,165

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Total	27.8	47.0	29.2	204	0.53	0.83	18.1	18.9	0.81	3.20	4.02	406	65,752	66,157	44.2	2.71	77.1	68,147
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.41	4.03	4.27	32.1	0.09	0.07	3.29	3.36	0.06	0.58	0.65	—	8,334	8,334	0.35	0.40	12.0	8,473
Area	0.56	4.50	0.12	4.61	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107
Energy	0.11	0.05	0.94	0.55	0.01	0.07	—	0.07	0.07	—	0.07	—	2,385	2,385	0.22	0.02	—	2,396
Water	—	—	—	—	—	—	—	—	—	—	—	12.0	60.2	72.2	1.24	0.03	—	112
Waste	—	—	—	—	—	—	—	—	—	—	—	55.1	0.00	55.1	5.51	0.00	—	193
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	5.08	8.58	5.33	37.2	0.10	0.15	3.29	3.45	0.15	0.58	0.73	67.1	10,886	10,953	7.32	0.45	12.8	11,283

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	13.8	12.6	12.9	123	0.33	0.23	1.88	2.11	0.22	0.58	0.80	—	33,368	33,368	1.18	1.41	106	33,924
Regional Shopping Center	0.87	0.82	0.56	5.02	0.01	0.01	0.07	0.08	0.01	0.02	0.03	—	1,211	1,211	0.06	0.06	3.77	1,234
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

Condo/Townhous	6.18	5.72	4.73	44.0	0.11	0.08	0.63	0.71	0.07	0.20	0.27	—	11,323	11,323	0.46	0.51	35.6	11,522
Single Family Housing	9.47	8.77	7.26	67.4	0.17	0.12	0.97	1.09	0.11	0.30	0.41	—	17,366	17,366	0.71	0.78	54.7	17,671
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	30.4	27.9	25.4	240	0.62	0.44	3.55	3.99	0.41	1.10	1.51	—	63,269	63,269	2.40	2.76	200	64,350
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	13.1	11.8	13.8	102	0.31	0.23	1.88	2.11	0.22	0.58	0.80	—	31,338	31,338	1.22	1.46	2.74	31,805
Regional Shopping Center	0.82	0.77	0.60	4.38	0.01	0.01	0.07	0.08	0.01	0.02	0.03	—	1,139	1,139	0.06	0.06	0.10	1,159
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
Condo/Townhouse	5.81	5.35	5.07	37.4	0.10	0.08	0.63	0.71	0.07	0.20	0.27	—	10,641	10,641	0.48	0.52	0.92	10,810
Single Family Housing	8.91	8.20	7.77	57.3	0.16	0.12	0.97	1.09	0.11	0.30	0.41	—	16,320	16,320	0.74	0.80	1.42	16,579
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	28.6	26.1	27.3	201	0.58	0.44	3.55	3.99	0.41	1.10	1.51	—	59,438	59,438	2.50	2.84	5.18	60,353
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	1.80	1.62	1.95	14.7	0.04	0.03	0.26	0.29	0.03	0.08	0.11	—	3,978	3,978	0.15	0.18	5.75	4,042
Regional Shopping Center	0.12	0.11	0.09	0.64	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	143	143	0.01	0.01	0.20	146

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
Condo/Townhouse	0.92	0.84	0.82	6.16	0.02	0.01	0.10	0.11	0.01	0.03	0.04	—	1,551	1,551	0.07	0.08	2.22	1,577
Single Family Housing	1.57	1.45	1.41	10.6	0.03	0.02	0.17	0.19	0.02	0.05	0.07	—	2,662	2,662	0.12	0.13	3.81	2,708
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.41	4.03	4.27	32.1	0.09	0.07	0.54	0.61	0.06	0.17	0.23	—	8,334	8,334	0.35	0.40	12.0	8,473

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	4,417	4,417	0.42	0.05	—	4,443
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	46.3	46.3	< 0.005	< 0.005	—	46.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	60.9	60.9	0.01	< 0.005	—	61.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	1,383	1,383	0.13	0.02	—	1,391

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,099	2,099	0.20	0.02	—	2,112
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,007	8,007	0.76	0.09	—	8,054
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	4,417	4,417	0.42	0.05	—	4,443
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	46.3	46.3	< 0.005	< 0.005	—	46.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	60.9	60.9	0.01	< 0.005	—	61.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	1,383	1,383	0.13	0.02	—	1,391
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,099	2,099	0.20	0.02	—	2,112
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,007	8,007	0.76	0.09	—	8,054
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	731	731	0.07	0.01	—	736
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	7.66	7.66	< 0.005	< 0.005	—	7.71
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	10.1	10.1	< 0.005	< 0.005	—	10.1

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	229	229	0.02	< 0.005	—	230
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	348	348	0.03	< 0.005	—	350
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,326	1,326	0.13	0.02	—	1,333

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.22	0.11	1.98	1.66	0.01	0.15	—	0.15	0.15	—	0.15	—	2,361	2,361	0.21	< 0.005	—	2,367
Regional Shopping Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.49	9.49	< 0.005	< 0.005	—	9.52
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
Condo/Townhouse	0.12	0.06	1.05	0.45	0.01	0.08	—	0.08	0.08	—	0.08	—	1,330	1,330	0.12	< 0.005	—	1,333
Single Family Housing	0.25	0.12	2.13	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,701	2,701	0.24	0.01	—	2,709
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.30	5.16	3.02	0.03	0.41	—	0.41	0.41	—	0.41	—	6,401	6,401	0.57	0.01	—	6,419

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.22	0.11	1.98	1.66	0.01	0.15	—	0.15	0.15	—	0.15	—	2,361	2,361	0.21	< 0.005	—	2,367
Regional Shopping Center	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.49	9.49	< 0.005	< 0.005	—	9.52
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
Condo/Townhouse	0.12	0.06	1.05	0.45	0.01	0.08	—	0.08	0.08	—	0.08	—	1,330	1,330	0.12	< 0.005	—	1,333
Single Family Housing	0.25	0.12	2.13	0.91	0.01	0.17	—	0.17	0.17	—	0.17	—	2,701	2,701	0.24	0.01	—	2,709
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.30	5.16	3.02	0.03	0.41	—	0.41	0.41	—	0.41	—	6,401	6,401	0.57	0.01	—	6,419
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	391	391	0.03	< 0.005	—	392
Regional Shopping Center	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.57	1.57	< 0.005	< 0.005	—	1.58
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
Condo/Townhouse	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	220	220	0.02	< 0.005	—	221
Single Family Housing	0.05	0.02	0.39	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	—	447	447	0.04	< 0.005	—	448

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.11	0.05	0.94	0.55	0.01	0.07	—	0.07	0.07	—	0.07	—	1,060	1,060	0.09	< 0.005	—	1,063

4.3. Area Emissions by Source

4.3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.76	0.38	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Consumer Products	—	20.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.40	4.11	0.34	36.6	< 0.005	0.02	—	0.02	0.03	—	0.03	—	115	115	< 0.005	0.01	—	118
Total	5.16	26.3	6.85	39.4	0.04	0.55	—	0.55	0.56	—	0.56	0.00	8,377	8,377	0.16	0.03	—	8,389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.76	0.38	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Consumer Products	—	20.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	1.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.76	22.2	6.51	2.77	0.04	0.53	—	0.53	0.53	—	0.53	0.00	8,262	8,262	0.16	0.02	—	8,271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	93.7	93.7	< 0.005	< 0.005	—	93.8
Consumer Products	—	3.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.55	0.51	0.04	4.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.0	13.0	< 0.005	< 0.005	—	13.4
Total	0.56	4.50	0.12	4.61	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	107	107	< 0.005	< 0.005	—	107

4.4. Water Emissions by Land Use

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	17.9	89.3	107	1.85	0.04	—	167
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Condo/T	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54.6	274	329	5.62	0.14	—	510
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	17.9	89.3	107	1.85	0.04	—	167
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	54.6	274	329	5.62	0.14	—	510
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	72.5	364	436	7.47	0.18	—	677
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.97	14.8	17.8	0.31	0.01	—	27.6

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.04	45.4	54.4	0.93	0.02	—	84.4
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.0	60.2	72.2	1.24	0.03	—	112

4.5. Waste Emissions by Land Use

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	134	0.00	134	13.4	0.00	—	468
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.83	0.00	2.83	0.28	0.00	—	9.90
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	117	0.00	117	11.7	0.00	—	409
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	333	0.00	333	33.3	0.00	—	1,165
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	134	0.00	134	13.4	0.00	—	468
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	2.83	0.00	2.83	0.28	0.00	—	9.90
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	117	0.00	117	11.7	0.00	—	409
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	333	0.00	333	33.3	0.00	—	1,165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	22.2	0.00	22.2	2.21	0.00	—	77.5
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	0.47	0.00	0.47	0.05	0.00	—	1.64
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Condo/T	—	—	—	—	—	—	—	—	—	—	—	13.1	0.00	13.1	1.31	0.00	—	46.0
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	19.4	0.00	19.4	1.94	0.00	—	67.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	55.1	0.00	55.1	5.51	0.00	—	193

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.38	0.38
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.35	1.35
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.96	2.96
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.38	0.38
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.35	1.35
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.96	2.96
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.49	0.49
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

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

5.9. 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
Office Park	3,068	684	288	850,504	41,049	9,146	3,858	11,380,080
Regional Shopping Center	196	231	105	68,625	1,111	1,463	669	400,885
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	1,514	905	768	482,089	13,822	8,264	7,011	4,400,221
Single Family Housing	2,323	2,247	2,010	827,482	21,199	20,507	18,344	7,552,766
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	179
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	20
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	213
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	24

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)
1363007.25	454,336	408,000	136,000	28,078

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Office Park	4,657,327	346	0.0330	0.0040	7,365,637
Regional Shopping Center	48,792	346	0.0330	0.0040	29,611
Parking Lot	64,221	346	0.0330	0.0040	0.00
Condo/Townhouse	1,458,499	346	0.0330	0.0040	4,149,285
Single Family Housing	2,213,401	346	0.0330	0.0040	8,428,742
Other Asphalt Surfaces	0.00	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)
Office Park	0.00	0.00

Regional Shopping Center	9,359,768	5,736,632
Parking Lot	0.00	0.00
Condo/Townhouse	0.00	0.00
Single Family Housing	28,481,212	17,955,547
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Office Park	248	0.00
Regional Shopping Center	5.25	0.00
Parking Lot	0.00	0.00
Condo/Townhouse	45.6	0.00
Single Family Housing	67.2	0.00
Other Asphalt Surfaces	0.00	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
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0

Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

—	—

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

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	28.6	annual days of extreme heat
Extreme Precipitation	3.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth

Wildfire	16.5	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	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	3	1	1	3

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	1	1	1	2

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	80.0
AQ-PM	40.4
AQ-DPM	31.3
Drinking Water	11.0
Lead Risk Housing	4.06
Pesticides	13.6
Toxic Releases	14.3
Traffic	81.3

Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	73.6
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	31.6
Cardio-vascular	76.0
Low Birth Weights	56.6
Socioeconomic Factor Indicators	—
Education	40.1
Housing	12.8
Linguistic	8.49
Poverty	34.9
Unemployment	48.3

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	70.31951752
Employed	39.30450404
Median HI	80.88027717
Education	—
Bachelor's or higher	58.29590658
High school enrollment	100

Preschool enrollment	64.72475298
Transportation	—
Auto Access	89.83703323
Active commuting	12.60105223
Social	—
2-parent households	73.95098165
Voting	49.22366226
Neighborhood	—
Alcohol availability	89.3750802
Park access	2.194276915
Retail density	10.31695111
Supermarket access	18.61927371
Tree canopy	4.38855383
Housing	—
Homeownership	67.93276017
Housing habitability	86.16707301
Low-inc homeowner severe housing cost burden	69.34428333
Low-inc renter severe housing cost burden	80.27717182
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	89.59322469
Arthritis	10.7
Asthma ER Admissions	78.7
High Blood Pressure	18.2
Cancer (excluding skin)	10.4
Asthma	46.1
Coronary Heart Disease	23.5

Chronic Obstructive Pulmonary Disease	33.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	83.5
Cognitively Disabled	29.3
Physically Disabled	73.0
Heart Attack ER Admissions	38.4
Mental Health Not Good	64.8
Chronic Kidney Disease	45.1
Obesity	48.4
Pedestrian Injuries	39.7
Physical Health Not Good	61.7
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	19.3
Current Smoker	59.6
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	18.1
SLR Inundation Area	0.0
Children	5.7
Elderly	87.4
English Speaking	95.5
Foreign-born	16.2
Outdoor Workers	58.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.9
Traffic Density	62.3

Traffic Access	23.0
Other Indices	—
Hardship	29.8
Other Decision Support	—
2016 Voting	55.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	67.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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	Taken from site plan
Operations: Vehicle Data	Taken from TA and ITE weekend rates

Operations: Hearths	SCAQMD Rule 445 no wood burning devices, Wood burning devices added to gas devices
Operations: Architectural Coatings	SCAQMD Rule 1113
Operations: Water and Waste Water	water use is based on Water Study Report Report, water assigned based on residential and non-residential total water demand.
Operations: Refrigerants	Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater

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APPENDIX 4.5:

EMFAC2021

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calenc	Vehicle Cat	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class	Mix
Riverside (SC)	2023	HHDT	Aggregate	Aggregate	Gasol	9.455104489	402.0155083	189.1777	0.108573531	108.5735307	317785.1606	402.0155083	1920248.354	6.04	HHDT	51.4%
Riverside (SC)	2023	HHDT	Aggregate	Aggregate	Diesel	14188.53655	1870417.715	219597.8	309.6254593	309625.4593		1870417.715				
Riverside (SC)	2023	HHDT	Aggregate	Aggregate	Electr	10.75839329	733.8118529	174.709	0	0		733.8118529				
Riverside (SC)	2023	HHDT	Aggregate	Aggregate	Natur	693.7983116	48694.81207	6095.614	8.051127696	8051.127696	711067.1515	48694.81207	21760170.77	30.60	LDA	67.9%
Riverside (SC)	2023	LDA	Aggregate	Aggregate	Gasol	469124.6474	20366451.54	2188243	699.7310812	699731.0812		20366451.54				
Riverside (SC)	2023	LDA	Aggregate	Aggregate	Diesel	1558.762895	58561.51523	6862.385	1.375784729	1375.784729		58561.51523				
Riverside (SC)	2023	LDA	Aggregate	Aggregate	Electr	16185.78734	744565.1808	81606.56	0	0	64044.29373	744565.1808	1546785.932	24.15	LDT1	5.7%
Riverside (SC)	2023	LDA	Aggregate	Aggregate	Plug-i	11651.42905	590592.5329	48178.66	9.960285645	9960.285645		590592.5329				
Riverside (SC)	2023	LDT1	Aggregate	Aggregate	Gasol	41569.09002	1542689.764	180081.5	63.99950114	63999.50114		1542689.764				
Riverside (SC)	2023	LDT1	Aggregate	Aggregate	Diesel	20.22700504	383.6181372	59.25883	0.015644241	15.64424123	358545.5463	383.6181372	8562709.114	23.88	LDT2	26.5%
Riverside (SC)	2023	LDT1	Aggregate	Aggregate	Electr	42.93918941	1813.231309	209.4056	0	0		1813.231309				
Riverside (SC)	2023	LDT1	Aggregate	Aggregate	Plug-i	33.25263876	1899.318283	137.4997	0.029148352	29.14835174		1899.318283				
Riverside (SC)	2023	LDT2	Aggregate	Aggregate	Gasol	191587.7811	8435118.12	898421.5	356.5641957	356564.1957	77417.67097	8435118.12	1224140.947	15.81	LHDT1	
Riverside (SC)	2023	LDT2	Aggregate	Aggregate	Diesel	577.8339592	27328.90025	2783.975	0.849494989	849.4949888		27328.90025				
Riverside (SC)	2023	LDT2	Aggregate	Aggregate	Electr	816.9774193	29520.94571	4196.954	0	0	22679.23434	29520.94571	346711.8059	15.29	LHDT2	
Riverside (SC)	2023	LDT2	Aggregate	Aggregate	Plug-i	1285.022226	70741.14871	5313.567	1.131855657	1131.855657		70741.14871				
Riverside (SC)	2023	LHDT1	Aggregate	Aggregate	Gasol	18052.34987	656605.5887	268953.1	49.73832228	49738.32228	3403.298812	656605.5887	141523.0693	41.58	MCY	
Riverside (SC)	2023	LHDT1	Aggregate	Aggregate	Diesel	15395.69696	567535.3588	193658.5	27.67934868	27679.34868	344047.395	567535.3588	6637695.092	19.29	MDV	
Riverside (SC)	2023	LHDT2	Aggregate	Aggregate	Gasol	2523.570585	90490.65997	37597.44	7.611904144	7611.904144		90490.65997				
Riverside (SC)	2023	LHDT2	Aggregate	Aggregate	Diesel	6852.470307	256221.1459	86195.46	15.0673302	15067.3302		256221.1459				
Riverside (SC)	2023	MCY	Aggregate	Aggregate	Gasol	24170.7213	141523.0693	48341.44	3.403298812	3403.298812	10873.77525	141523.0693	62635.35904	5.76	MH	
Riverside (SC)	2023	MDV	Aggregate	Aggregate	Gasol	159138.1322	6456725.347	729289.1	338.8355886	338835.5886		6456725.347				
Riverside (SC)	2023	MDV	Aggregate	Aggregate	Diesel	2483.005938	104140.6313	11570.85	4.4577137	4457.7137	72860.34533	104140.6313	613586.1262	8.42	MHDT	49.8%
Riverside (SC)	2023	MDV	Aggregate	Aggregate	Electr	897.1539487	32338.42861	4604.782	0	0		32338.42861				
Riverside (SC)	2023	MDV	Aggregate	Aggregate	Plug-i	887.9224631	44490.68605	3671.559	0.754092705	754.0927053	4805.404855	44490.68605	30497.76136	6.35	OBUS	
Riverside (SC)	2023	MH	Aggregate	Aggregate	Gasol	5083.841078	44617.33224	508.5875	9.135457245	9135.457245		44617.33224				
Riverside (SC)	2023	MH	Aggregate	Aggregate	Diesel	2073.70666	18018.02681	207.3707	1.738318002	1738.318002	5896.748986	18018.02681	37701.28126	6.39	SBUS	
Riverside (SC)	2023	MHDT	Aggregate	Aggregate	Gasol	1260.142241	50001.99826	25212.93	9.730848023	9730.848023		50001.99826				
Riverside (SC)	2023	MHDT	Aggregate	Aggregate	Diesel	12683.243	556347.8969	149765.7	62.32189585	62321.89585	11107.60554	556347.8969	49531.64193	4.46	UBUS	
Riverside (SC)	2023	MHDT	Aggregate	Aggregate	Electr	4.9202908	108.4971152	59.16901	0	0		108.4971152				
Riverside (SC)	2023	MHDT	Aggregate	Aggregate	Natur	147.6204682	7127.733974	1314.847	0.807601459	807.6014589		7127.733974				
Riverside (SC)	2023	OBUS	Aggregate	Aggregate	Gasol	386.6813181	13386.35665	7736.72	2.645844907	2645.844907		13386.35665				
Riverside (SC)	2023	OBUS	Aggregate	Aggregate	Diesel	215.667787	15076.44179	2431.524	1.951877039	1951.877039		15076.44179				
Riverside (SC)	2023	OBUS	Aggregate	Aggregate	Natur	33.12387867	2034.962916	294.8025	0.207682909	207.6829092		2034.962916				
Riverside (SC)	2023	SBUS	Aggregate	Aggregate	Gasol	421.1646074	16563.24745	1684.658	1.897862822	1897.862822		16563.24745				
Riverside (SC)	2023	SBUS	Aggregate	Aggregate	Diesel	499.0687276	10519.58678	7226.515	1.437331357	1437.331357		10519.58678				
Riverside (SC)	2023	SBUS	Aggregate	Aggregate	Electr	0.562315788	6.53322339	8.142333	0	0		6.53322339				
Riverside (SC)	2023	SBUS	Aggregate	Aggregate	Natur	428.0776414	10611.9138	6198.564	2.561554808	2561.554808		10611.9138				
Riverside (SC)	2023	UBUS	Aggregate	Aggregate	Gasol	145.9294435	18476.36382	583.7178	3.28009086	3280.09086		18476.36382				
Riverside (SC)	2023	UBUS	Aggregate	Aggregate	Diesel	0.3117338	30.10971099	1.246935	0.002674589	2.674588852		30.10971099				
Riverside (SC)	2023	UBUS	Aggregate	Aggregate	Electr	0.030745281	2.969621933	0.122981	0	0		2.969621933				
Riverside (SC)	2023	UBUS	Aggregate	Aggregate	Natur	251.677147	31022.19878	1006.709	7.824840087	7824.840087		31022.19878				

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calenc	Vehicle Cat	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class	Mix
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Gasol	4.417589037	240.8696114	88.38712	0.059741457	59.74145741	327553.1219	240.8696114	2112996.232	6.45	HHDT	52.4%
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Diesel	16021.09962	2023648.424	249355.9	318.6419902	318641.9902		2023648.424				
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Electr	291.1277388	33695.26576	4002.394	0	0		33695.26576				
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Natur	859.7365707	55411.6726	7414.935	8.851390205	8851.390205	659332.1669	55411.6726	22605957.54	34.29	LDA	66.9%
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Gasol	471235.7168	20354484.89	2188316	646.3182298	646318.2298		20354484.89				
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Diesel	1176.545459	41562.34596	5095.942	0.941772786	941.772786		41562.34596				
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Electr	30348.88532	1428770.722	150546.3	0	0	56110.21758	1428770.722	1471112.371	26.22	LDT1	5.0%
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Plug-i	16056.71591	781139.586	66394.52	12.07216427	12072.16427		781139.586				
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Gasol	38425.04641	1456606.871	166992.4	56.00411545	56004.11545		1456606.871				
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Diesel	8.182997029	149.5948697	22.81741	0.005861932	5.861931679	363211.8816	149.5948697	9671400.198	26.63	LDT2	28.1%
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Electr	147.7776311	7209.101259	739.8439	0	0		7209.101259				
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Plug-i	130.963565	7146.803489	541.5343	0.100240199	100.2401989		7146.803489				
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Gasol	212339.9735	9414153.484	995691.7	360.272054	360272.054	69419.14823	9414153.484	1201022.641	17.30	LHDT1	
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Diesel	713.6192887	33073.61643	3418.932	0.942826085	942.8260853		33073.61643				
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Electr	2564.171691	88062.50525	12933.82	0	0	20539.98243	88062.50525	334771.945	16.30	LHDT2	
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Plug-i	2628.969244	136110.5925	10870.79	1.997001514	1997.001514		136110.5925				
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Gasol	17212.0897	642894.8546	256434.5	44.12357644	44123.57644	3223.711537	642894.8546	135933.3741	42.17	MCY	
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Diesel	14633.12771	526713.4197	184066.3	25.29557179	25295.57179	313073.5241	526713.4197	6696600.902	21.39	MDV	
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Electr	492.5286755	31414.36647	6894.316	0	0		31414.36647				
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Gasol	2393.256129	85530.68603	35655.95	6.657949773	6657.949773		85530.68603				
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Diesel	6722.419556	241624.1987	84559.58	13.88203265	13882.03265	8533.923074	241624.1987	50163.52077	5.88	MH	
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Electr	125.2869519	7617.060264	1661.882	0	0		7617.060264				
Riverside (SC)	2027	MCY	Aggregate	Aggregate	Gasol	23872.84416	135933.3741	47745.69	3.223711537	3223.711537	74108.25298	135933.3741	657629.6251	8.87	MHDT	48.8%
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Gasol	157494.1298	6421344.406	720126.9	307.9749594	307974.9594		6421344.406				
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Diesel	2354.829343	94400.81381	10749.53	3.800171132	3800.171132	4234.382771	94400.81381	29125.06177	6.88	OBUS	
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Electr	2779.433972	95116.63714	14003.53	0	0		95116.63714				
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Plug-i	1757.393907	85739.04462	7266.824	1.298393545	1298.393545	5925.808471	85739.04462	38269.32872	6.46	SBUS	
Riverside (SC)	2027	MH	Aggregate	Aggregate	Gasol	4014.402617	34124.53465	401.6008	6.984241305	6984.241305		34124.53465				
Riverside (SC)	2027	MH	Aggregate	Aggregate	Diesel	1945.315043	16038.98612	194.5315	1.549681769	1549.681769	10959.60845	16038.98612	49932.35462	4.56	UBUS	
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Gasol	1187.040113	49189.22554	23750.3	9.102215369	9102.215369		49189.22554				
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Diesel	13823.92114	580928.627	163825.6	64.04015234	64040.15234		580928.627				
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Electr	371.8319942	18951.18768	4613.126	0	0		18951.18768				
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Natur	191.1860259	8560.584881	1682.229	0.965885278	965.8852775		8560.584881				
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Gasol	338.9861834	11067.86494	6782.436	2.084603884	2084.603884		11067.86494				
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Diesel	234.5197906	15307.11304	2682.711	1.914675461	1914.675461		15307.11304				
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Electr	5.428935287	350.8664874	108.6221	0	0		350.8664874				
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Natur	40.94802157	2399.217305	364.4374	0.235103425	235.1034253		2399.217305				
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Gasol	430.4295714	17027.29145	1721.718	1.934694955	1934.694955		17027.29145				
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Diesel	464.1146803	9303.444431	6720.381	1.262004708	1262.004708		9303.444431				
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Electr	14.63497518	401.3400131	184.3616	0	0		401.3400131				
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Natur	486.6196132	11537.25282	7046.252	2.729108808	2729.108808		11537.25282				
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Gasol	147.0093126	18606.89257	588.0373	3.253359958	3253.359958		18606.89257				
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Diesel	0.3117338	30.10971099	1.246935	0.002674823	2.674822746		30.10971099				
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Electr	0.589513765	89.99316283	2.358055	0	0		89.99316283				
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Natur	253.257931	31205.35917	1013.032	7.703573673	7703.573673		31205.35917				

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