Town Center at Moreno Valley Specific Plan

ENERGY ANALYSIS

CITY OF MORENO VALLEY

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FEBRUARY 3, 2025

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LIST OF ABBREVIATED TERMS

%	Percent
(1)	Reference
AQIA	*Town Center at Moreno Valley Specific Plan Air Quality Impact Analysis*
BACM	Best Available Control Measures
BTU	British Thermal Units
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
City	City of Moreno Valley
CPUC	California Public Utilities Commission
DMV	Department of Motor Vehicles
EIA	Energy Information Administration
EPA	Environmental Protection Agency
EMFAC	EMissions FACtor
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse Gas
GWh	Gigawatt Hour
HHDT	Heavy-Heavy Duty Trucks
I-215	Interstate 215
IEPR	Integrated Energy Policy Report
ISO	Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
kBTU	Thousand-British Thermal Units
kWh	Kilowatt Hour
LDA	Light Duty Auto
LDT1/LDT2	Light-Duty Trucks
LHDT1/LHDT2	Light-Heavy Duty Trucks
MCY	Motorcycles
MDV	Medium Duty Trucks
MH	Motor Homes
MHDT	Medium-Heavy Duty Trucks

MMcfd	Million Cubic Feet Per Day
mpg	Miles Per Gallon
MPO	Metropolitan Planning Organization
MVU	Moreno Valley Utility
OBUS	Other Buses
PG&E	Pacific Gas and Electric
Project	Town Center at Moreno Valley Specific Plan
SBUS	School Buses
SCAB	Southern California Air Basin
SDAB	San Diego Air Basin
SoCalGas	Southern California Gas
sf	Square Feet
TEA-21	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 *Town Center at Moreno Valley Specific Plan Energy Analysis* is summarized below based on the significance criteria in Section 3 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Statute and Guidelines (*CEQA Guidelines*) (1). Table ES-1 shows the findings of significance for potential energy impacts under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Energy Impact #1: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	5.0	*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?	5.0	*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
- California Code Title 24 24, Part 11 (CALGreen)
- AB 1493 Pavley Regulations and Fuel Efficiency Standards
- California's Renewables Portfolio Standard (RPS)
- Clean Energy and Pollution Reduction Act of 2015 (SB 350)

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

ES.3 MITIGATION MEASURES

Because the proposed Project does not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation nor does it conflict with or obstruct a state or local plan for renewable energy or energy efficiency, impacts would be less than significant, and no mitigation is required.

The following measures were identified in the Town Center at Moreno Valley Specific Plan Air Quality Impact Analysis (AQIA) report (2) and the Town Center at Moreno Valley Specific Plan Greenhouse Gas Analysis (GHGA) report (3) . Although these measures are designed to reduce Project air quality and greenhouse gas emissions, they would also assist in the reduction of fuel and energy usage.

MM 2

Legible, durable, weather-proof signs shall be placed at commercial loading docks and truck parking areas that identify applicable CARB anti-idling regulations. At a minimum, each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five (5) minutes once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged; and 3) telephone numbers of the building facilities manager and the CARB to report violations. Prior to the issuance of an occupancy permit, the City shall conduct a site inspection to ensure that the signs are in place.

MM 3

Prior to the issuing of each building permit, the Project proponent and its contractors shall provide plans and specifications to the City that demonstrate that electrical service is provided to each of the areas in the vicinity of the buildings that are to be landscaped in order that electrical equipment may be used for landscape maintenance.

MM 4

Once constructed, the Project proponent shall ensure that all commercial tenants shall utilize only electric or natural gas pallet jacks and forklifts in the loading areas.

MM 5

Upon occupancy and annually thereafter, the operators of the commercial space shall provide information to all delivery truck drivers, regarding:

- Building energy efficiency, solid waste reduction, recycling, and water conservation.
- Vehicle GHG emissions, electric vehicle charging availability, and alternate transportation opportunities for commuting.
- Participation in the Voluntary Interindustry Commerce Solutions (VICS) “Empty Miles” program to improve goods trucking efficiencies.
- Health effects of diesel particulates, State regulations limiting truck idling time, and the benefits of minimized idling.

- The importance of minimizing traffic, noise, and air pollutant impacts to any residences in the Project vicinity.

MM 6

Prior to issuance of a building permit, the Project proponent shall provide the City with an onsite signage program that clearly identifies the required onsite circulation system. This shall be accomplished through posted signs and painting on driveways and internal roadways.

GREENHOUSE GAS MITIGATION MEASURES

The following mitigation measures are recommended to further reduce GHG emissions.

MM GHG-1

The project applicant shall design and build future non-residential development to meet/include the following:

- The project will utilize on-site renewable energy sources such as solar, to reduce electrical demand as per Division A5.211, Renewable Energy, of Appendix A5, Nonresidential Voluntary Measures, of the 2022 California Green Building Standards Code.
- The project will incorporate measures to reduce the overall use of potable water within the building by 12 percent as per Division A5.3, Water Efficiency and Conservation, as outlined under Section A5.303.2.3.1 of Appendix A5, Nonresidential Voluntary Measures, of the 2022 California Green Building Standards Code.

Prior to the issuance of building permits for new development projects within the project site, the project applicant shall provide documentation (e.g., building plans, site plans) to the City of Moreno Valley Planning Division to verify implementation of the applicable design requirements specified in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City shall verify implementation of these design requirements.

MM GHG-2

The project applicant shall design and build future residential development to meet/include the following:

- No wood-burning fireplaces shall be installed in any of the dwelling units.
- All buildings shall be electric, to the extent feasible, meaning that electricity is the primary source of energy for water heating; heating, ventilation, and air conditioning (HVAC) within the building, excluding pool heating.
- All major appliances provided/installed shall be EnergyStar-certified or of equivalent energy efficiency, where applicable.

Prior to the issuance of building permits for new development projects within the project site, the project applicant shall provide documentation (e.g., building plans, site plans) to the City of

Moreno Valley Planning Division to verify implementation of the applicable design requirements specified in this mitigation measure. Prior to the issuance of the certificate of occupancy, the City shall verify implementation of these design requirements.

MM GHG-3

Exterior electric receptacles on nonresidential buildings shall be provided for charging or powering electric landscaping equipment.

MM GHG-4

The project shall use light-color roofing and building materials to minimize the heat island effect and reduce lighting, heating, and cooling needs.

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1 INTRODUCTION

This report presents the results of the energy analysis prepared by Urban Crossroads, Inc., for the proposed Town Center at Moreno Valley Specific Plan Project (Project). The purpose of this report is to ensure that energy implication is considered by the City of Moreno Valley, as the lead agency, and to quantify anticipated energy usage associated with construction and operation of the proposed Project, determine if the usage amounts are efficient, typical, or wasteful for the land use type, and to emphasize avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

1.1 SITE LOCATION

The Project site is generally bound by Cottonwood Avenue to the north, Nason Street to the east, Alessandro Boulevard to the south, and vacant land and a residential subdivision to the west. The Project site is currently undeveloped. There is a vacant parcel northeast of the Project site (southwest of the Nason Street and Cottonwood Avenue intersection), and an Eastern Municipal Water District booster station northwest of the Project site (southeast corner of Cottonwood Avenue and Letterman Street) that are not part of the Project. Exhibit 1-A depicts the location of the Project.

1.2 PROJECT DESCRIPTION

The Project includes a proposed Specific Plan and TTM to allow for the development of residential, commercial, and park uses, as shown on the conceptual site plan provided on Figure 3. Access to the Project site would be provided from Cottonwood Avenue, Nason Street, Bay Avenue, and Alessandro Boulevard. Because the proposed Specific Plan is designed to provide flexibility for development within the Specific Plan area, the actual type and amount of uses that would be developed at buildout of the Specific Plan is unknown. Therefore, a reasonable potential buildout development scenario has been developed for purposes of analysis; the following uses are anticipated in the respective land use areas shown in Exhibit 1-B.

- 800 single family detached[1] residential dwelling units (DU)
- 4.8 acres of parks
- 106-room hotel
- 15,000 square feet (sf) of office use
- 30,000 sf civic use
- 16,660 sf of high turnover (sit-down) restaurant use
- 3,500 sf of fast-food restaurant with drive-thru window
- 60,890 sf of commercial retail use

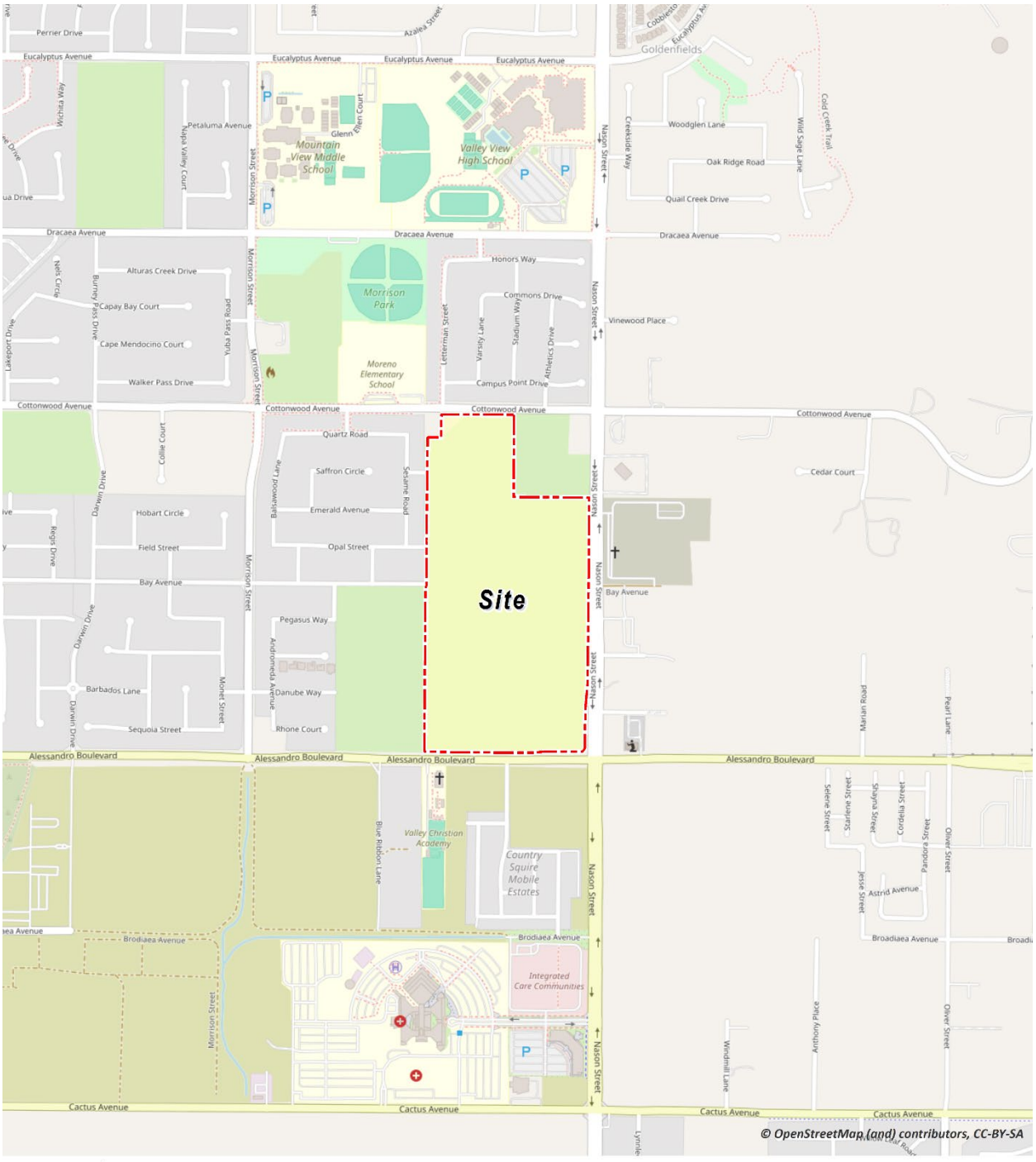
[1] The Project could include the development of multifamily residential uses, however, for purposes of analysis, and consistent with the Town Center at Moreno Valley Specific Plan (PEN21-0034, -0035, -0036) Traffic Analysis, this GHGA analyzes 800 single family detached residential DUs.

- 45,000 sf of supermarket use

The existing 2006 Moreno Valley General Plan land use designation and zoning for the site is Public Facilities. Therefore, the proposed Project also involves a General Plan amendment and zone change. The proposed General Plan land use designation is Specific Plan. The proposed change of zone would amend the Public Facilities zoning to the Town Center at Moreno Valley Specific Plan (SP 222) zoning classification for the subject property. However, the City of Moreno Valley is currently in the process of updating the General Plan and zoning; the General Plan land use designation and zoning proposed by the City is Downtown Center (DC) District. The proposed Town Center at Moreno Valley Specific Plan is consistent with the City's proposed Downtown Center (DC) District land use and zoning designations.

A preliminary land use plan for the proposed Project is shown on Exhibit 1-B. For the purposes of this analysis, it is assumed that the Project would be developed in a single phase with an anticipated Opening Year of 2028.

EXHIBIT 1-A: SITE LOCATION

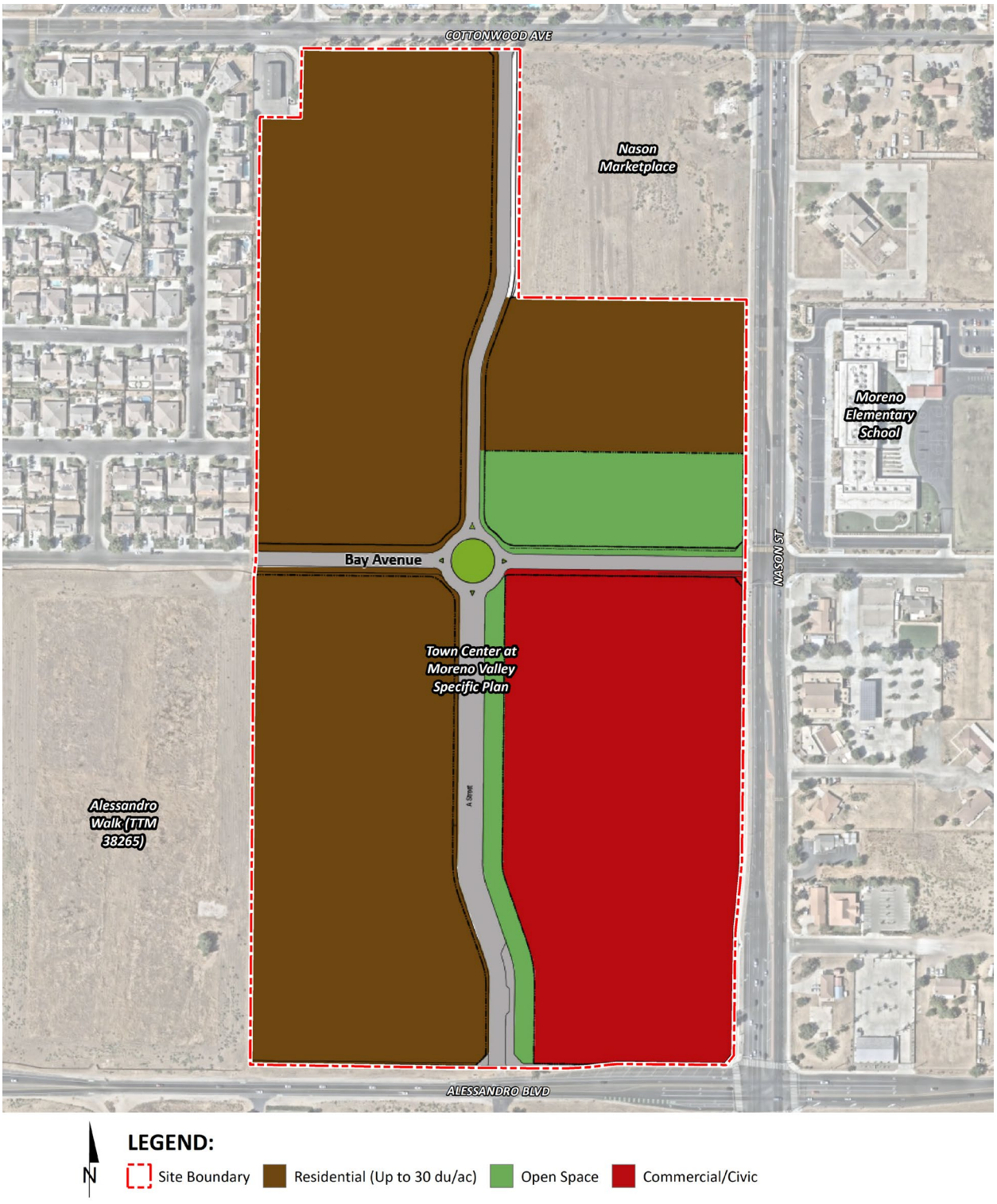


LEGEND:

N

Site Boundary

EXHIBIT 1-B: CONCEPTUAL LAND USE PLAN



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2 EXISTING CONDITIONS

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

2.1 OVERVIEW

The most recent data for California's estimated total energy consumption and natural gas consumption is from 2022, released by the United States (U.S.) Energy Information Administration's (EIA) California State Profile and Energy Estimates and includes (4):

- As of 2022, approximately 6,882 trillion British Thermal Unit (BTU) of energy
- As of 2022, approximately 628 million barrels of petroleum
- As of 2022, approximately 2,059 billion cubic feet of natural gas
- As of 2022, approximately 1,322 thousand short tons of coal

According to the EIA, in 2022 the U.S. petroleum consumption comprised about 90% of all transportation energy use, excluding fuel consumed for aviation and most marine vessels (5). In 2023, about 253,289 million gallons (or about 6.031 million barrels) of finished petroleum products were consumed in the U.S., an average of about 694 million gallons per day (or about 16.5 million barrels per day) (6). 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) (7).

The most recent data provided by the EIA for energy use in California is reported from 2022 which shows approximate energy usage by each of the following sectors:

- 42.6% for transportation uses
- 22.5% for industrial uses
- 17.6% for residential uses
- 17.4% for commercial uses (8)

According to the EIA, California used approximately 251,869 gigawatt hours of electricity in 2022 (9). By sector in 2023, residential uses utilized 35.6% of the state's electricity, followed by 45.3% for commercial uses, 18.9% for industrial uses, and 0.3% for transportation. Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building (9).

According to the EIA, California used approximately 200,871 million therms of natural gas in 2023 (10). In 2022 (the most recent year for which data is available), by sector, industrial uses utilized 31% of the state's natural gas, followed by 32% used as fuel in the electric power sector, 23% from residential, 13% from commercial, 1% from transportation uses and the remaining 3% was utilized for the operations, processing and production of natural gas itself (10). 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 (10).

In 2023, total system electric generation for California was 281,140 gigawatt hours (GWh). California's massive electricity in-state generation system generated approximately 215,623 GWh which accounted for approximately 76% of the electricity it uses; the rest was imported from the Pacific Northwest (6%) and the U.S. Southwest (18%) (11). Natural gas is the main source for electricity generation at 43.68% of the total in-state electric generation system power as shown in Table 2-1.

An updated summary of, and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below (12):

- In 2023, California was the seventh-largest producer of crude oil among the 50 states, and the state ranked third in crude oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states.
- California is the second-largest total energy consumer among the states, after Texas, but its per capita energy consumption is the fourth-lowest in the nation.
- In 2023, renewable resources, including hydroelectric power and small-scale solar power, supplied 54% of California's in-state electricity generation. Natural gas fueled another 39% and nuclear power provided almost all the rest.
- In 2023, California was the fourth-largest electricity producer in the nation. It is also the nation's third-largest electricity consumer and imports more electricity than any other state.

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

TABLE 2-1: TOTAL ELECTRICITY SYSTEM POWER (CALIFORNIA 2023)

Fuel Type	California In-State Generation (GWh)	% of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Total California Energy Mix (GWh)	Total California Power Mix
Coal	257	0.12%	163	4,561	4,724	4,981	1.77%
Natural Gas	94,192	43.68%	52	8,530	8,582	102,774	36.56%
Oil	36	0.02%	0	0	0	36	0.01%
Other (Waste Heat/Petroleum Coke)	206	0.10%	0	0	0	206	0.07%
Unspecified	0	0.00%	100	10,273	10,373	10,373	3.69%
Total Thermal and Unspecified	***94,690***	***43.91%***	***316***	***23,363***	***23,679***	***118,370***	***42.10%***
Nuclear	17,714	8.22%	196	8,361	8,558	26,272	9.34%
Large Hydro	27,066	12.55%	4,712	1,109	5,821	32,886	11.70%
Biomass	5,037	2.34%	753	-	753	5,790	2.06%
Geothermal	10,999	5.10%	221	2,347	2,569	13,567	4.83%
Small Hydro	4,853	2.25%	133	2	135	4,988	1.77%
Solar	41,344	19.17%	417	6,108	6,525	47,869	17.03%
Wind	13,920	6.46%	9,177	8,302	17,479	31,399	11.17%
Total Non-GHG and Renewable Resources	120,932	56.09%	15,609	26,229	41,838	162,771	57.90%
SYSTEM TOTALS	***215,623***	***100.00%***	***15,925***	***49,593***	***65,518***	***281,140***	***100.00%***

Source: California Energy Commission's 2023 Total System Electric Generation

2.2 ELECTRICITY

The usage associated with electricity use were calculated using CalEEMod Version 2022. 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 (SCAB) and the San Diego Air Basin (SDAB) region were vulnerable to low-voltage and post-transient voltage instability concerns. A preliminary plan to address these issues was detailed in the 2013 Integrative Energy Policy Report (IEPR) after a collaborative process with other energy agencies, utilities, and air districts (13). Similarly, the subsequent 2023 IEPR's provides information and policy recommendations on advancing a clean, reliable, and affordable energy system.

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 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 (14).

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

Electricity is currently provided to the Project area by Moreno Valley Utility (MVU). MVU provides electric power to more than 6,500 customers within its service area. MVU provides customer service, meter reading, billing, emergency response and other services to new commercial and residential developments. Based on MVU's 2022 Power Content Label Mix, MVU derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. MVU also purchases from independent power producers and utilities, including out-of-state suppliers (15). Tables 2-2 identifies MVU's specific proportional shares of electricity sources in 2022 (16).

TABLE 2-2: MVU 2022 POWER CONTENT MIX

Energy Resources	2022 MVU Power Mix
Eligible Renewable	**33.4%**
Biomass & Waste	0%
Geothermal	0%
Eligible Hydroelectric	0%
Solar	33.4%
Wind	0%
Coal	**0.0%**
Large Hydroelectric	**0.0%**
Natural Gas	**0.0%**
Nuclear	**0.0%**
Other	**0.0%**
Unspecified Sources of power*	66.6%
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 and volumes, supplies, delivery of supplies, storage, service options, and operations is excerpted from information provided by the California Public Utilities Commission (CPUC).

> *"The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller natural gas utilities. The CPUC also regulates independent storage operators: Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.*
>
> *California's natural gas utilities provide service to over 11 million gas meters. SoCalGas and PG&E provide service to about 5.9 million and 4.3 million customers, respectively, while SDG&E provides service to over 800, 000 customers. In 2018, California gas utilities forecasted that they would deliver about 4740 million cubic feet per day (MMcfd) of gas to their customers, on average, under normal weather conditions.*
>
> *The overwhelming majority of natural gas utility customers in California are residential and small commercials customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.*

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

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

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

The gas transported to California gas utilities via the interstate pipelines, as well as some of the California-produced gas, is delivered into the PG&E and SoCalGas intrastate natural gas transmission 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 (FAR) system in 2008, and it is now referred to as the backbone transmission system (BTS) framework. As under the PG&E backbone transmission system, SoCalGas backbone transmission costs are unbundled from noncore transportation rates. Noncore customers and marketers may obtain, and pay for, firm backbone transmission capacity at various receipt points on the SoCalGas system. A

certain amount of backbone transmission capacity is obtained for core customers to assure meeting their requirements.

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

In order properly operate their natural gas transmission pipeline and storage systems, PG&E and SoCalGas must balance the amount of gas received into the pipeline system and delivered to customers or to storage fields. Some of these utilities' storage capacity is dedicated to this service, and under most circumstances, customers do not need to precisely match their deliveries with their consumption. However, when too much or too little gas is expected to be delivered into the utilities' systems, relative to the amount being consumed, the utilities require customers to more precisely match up their deliveries with their consumption. And, if customers do not meet certain delivery requirements, they could face financial penalties. The utilities do not profit from these financial penalties - the amounts are then returned to customers as a whole. If the utilities find that they are unable to deliver all the gas that is expected to be consumed, they may even call for a curtailment of some gas deliveries. These curtailments are typically required for just the largest, noncore customers. It has been many years since there has been a significant curtailment of core customers in California." (17)

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

California accounts for less than 1% of total U.S. natural gas reserves and production. As with crude oil, California's natural gas production has experienced a gradual decline since 1985. In 2023, about 32% of the natural gas delivered to consumers went to the State's industrial sector, and about 31% was delivered to the electric power sector. Natural gas fueled more than two-fifths of the State's utility-scale electricity generation in 2023. The residential sector, where three-fifths of California households use natural gas for home heating, accounted for 23% of natural gas deliveries. The commercial sector received 13% of the deliveries to end users and the transportation sector consumed the remaining 1% (18).

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 (8), and those vehicles consume an estimated 17.2 billion gallons of fuel each year[2]. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the Project patrons and employees via commercial outlets.

California's on-road transportation system includes 396,616 lane miles, more than 26.6 million passenger vehicles and light trucks, and almost 9.0 million medium- and heavy-duty vehicles (8). While gasoline consumption has been declining since 2008 it is still by far the dominant fuel. California is the second-largest consumer of petroleum products, after Texas, and accounts for 8% of the nation's total consumption. The State is the largest U.S. consumer of motor gasoline and jet fuel, and 83% of the petroleum consumed in California is used in the transportation sector (18).

[2] Fuel consumptions estimated utilizing information from EMFAC2021.

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3 REGULATORY BACKGROUND

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

3.1 FEDERAL REGULATIONS

3.1.1 INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991 (ISTEA)

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

3.1.2 THE TRANSPORTATION EQUITY ACT FOR THE 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.

3.2 CALIFORNIA REGULATIONS

3.2.1 INTEGRATED ENERGY POLICY REPORT (IEPR)

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

The 2023 IEPR was adopted February 2024, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2023 IEPR builds on the 2022

IEPR's framework for embedding equity and environmental justice at the CEC and the California Energy Planning Library which allows for easier access to energy data and analytics for a wide range of users. Additionally, energy reliability, western electricity integration, gasoline cost factors and price spikes, the role of hydrogen in California's clean energy future, fossil gas transition and distributed energy resources are topics discussed within the 2023 IEPR (19).

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 TITLE 24 ENERGY EFFICIENCY STANDARDS AND CALIFORNIA GREEN BUILDING 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 August 1, 2009, and is administered by the California Building Standards Commission.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that became effective on January 1, 2023[3]. 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 (20). The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made. Current CALGreen standards require, among other items (21):

RESIDENTIAL MANDATORY MEASURES

- Electric vehicle (EV) charging stations. New construction shall comply with Section 4.106.4.1, 4.106.4.2, 4.106.4.3, to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625. (4.106.4).
    - New one- and two-family dwellings and town-houses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt

[3] The 2022 California Energy and Green Building Standard Code became effective on January 1, 2023, however; it has since been amended on July 1, 2024 with the Intervening Code Cycle Update which is reflected in this report. Additionally, it should be noted that the Energy Code and CALGreen provisions are currently being updated, with the most recent draft update consisting of the 2025 California Energy and Green Building Code Standards that will be effective on January 1, 2025. As construction of the Project is anticipated to be completed in 2028, it is presumed that the Project would be required to comply with the Title 24 standards in place at that time.

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 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

- New hotels and motels. All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces. The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1.

- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with Sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.1.4.
- Outdoor potable water use in landscape areas. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resource ' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.
- Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:
    - Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
    - Operations and maintenance instructions for the following:
        - Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, EV chargers, water-heating systems and other major appliances and equipment.
        - Roof and yard drainage, including gutter and downspouts.
        - Space conditioning systems, including condensers and air filters.
        - Landscape irrigation systems.
        - Water reuse systems.
    - Information from local utility, water and waste recovery providers on methods to future reduce resource consumption, including recycle programs and locations.
    - Public transportation and/or carpool options available in the area.
    - Educational material on the positive impacts of an interior relative humidity between 30-60% and what methods an occupants may use to maintain the relative humidity level in that range.
    - Information about water-conserving landscape and irrigation design and controllers which conserve water.
    - Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
    - Information about state solar energy and incentive programs available.

- A copy of all special inspection verifications required by the enforcing agency of this code.
- Information from CALFIRE on maintenance of defensible space around residential structures.

- Any installed gas fireplace shall be direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.
- Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the CARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-high Gloss coating, based on its glass, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 CARB, Suggested Control Measure, and the corresponding Flat, Nonflat, Nonflat-high Gloss VOC limit in Table 4.504.3 shall apply.

NONRESIDENTIAL MANDATORY MEASURES

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- EV charging stations. New construction shall facilitate the future installation of EV supply equipment. The compliance requires empty raceways for future conduit and documentation that the electrical system has adequate capacity for the future load. The number of spaces to be provided for is contained in Table 5.106. 5.3.1 (5.106.5.3). Alternatively, the power allocation method may be used as an alternative to the requirements mentioned in Section 5.106.5.1, and associated Table 5.106.5.3. Use of Table 5.106.5.3.6 to can be used to determine the total power in kVA required based on the total number of actual parking spaces. Additionally, Table 5.106.5.5.1 specifies requirements for the installation of raceway conduit and panel power requirements for medium- and heavy-duty EV supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, 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 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 combined 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 projected to consume more than 1,000 gallons per day (GPD) (5.303.1.1 and 5.303.1.2).
- Outdoor water uses in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements (5.410.2).

3.2.4 AB 1493 PAVLEY REGULATIONS AND FUEL EFFICIENCY STANDARDS

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

3.2.5 CALIFORNIA'S RENEWABLES PORTFOLIO STANDARD (RPS)

First established in 2002 under Senate Bill (SB) 1078, California's Renewable Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable resources to 44% of total retail sales by 2024 (22).

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 RPS discussed above, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33% to 50% by 2030, with interim targets of 40% by 2024, and 45% by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the CPUC, the CEC, and local publicly owned utilities.
- Reorganize the ISO to develop more regional electricity 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).

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4 PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

4.1 EVALUATION CRITERIA

Appendix F of the *State CEQA Guidelines* (23) states that the means of achieving the goal of energy conservation include the following:

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

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

Information from the CalEEMod Version 2022 outputs for the *Town Center at Moreno Valley Specific Plan Air Quality Impact Analysis* (Urban Crossroads, Inc.) (AQIA) (2) was utilized in this analysis, detailing Project-related construction equipment, transportation energy demands, and facility energy demands.

4.2.1 CALEEMOD

In May 2022, the SCAQMD, in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, 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 (24). Accordingly, the latest version of CalEEMod has been used to determine the proposed Project's anticipated transportation and facility energy demands. Outputs from the annual construction and operational model runs are provided in Appendix 4.1.

4.2.2 EMISSION FACTORS MODEL

On May 2, 2022, the EPA approved the 2021 version of the EMissions FACtor model (EMFAC2021) 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 (25). 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 2025 through 2028 analysis years were utilized to determine the average vehicle fuel economy used throughout the duration of the Project. Outputs from the EMFAC2021 model run is provided in Appendix 4.2.

4.3 CONSTRUCTION ENERGY DEMANDS

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

4.3.1 CONSTRUCTION POWER COST

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

CONSTRUCTION DURATION

For purposes of analysis, construction is expected to commence in November 2025 and to be complete in November 2028. The construction schedule utilized in the analysis, shown in Table 4-1, represents a "conservative" 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[4]. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (26).

TABLE 4-1: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Site Preparation	11/5/2025	11/26/2025	16
Grading	11/26/2025	03/23/2026	84
Building Construction	03/23/2026	11/6/2028	686
Paving	07/23/2026	11/6/2026	77
Architectural Coating	08/23/2028	11/6/2028	54

PROJECT CONSTRUCTION POWER COST

The *2024 National Construction Estimator* identifies a typical power cost per 1,000 sf of construction per month of $2.66, which was used to calculate the Project's total construction power cost (27). For purposes of analysis, the development scenario anticipated with implementation of the proposed Town Center Specific Plan includes 800 residential DU, 4.8 acres of parks, 106-room hotel, 15,000 sf of office use, 30,000 sf civic use, 16,660 sf of high turnover (sit-down) restaurant, 3,500 sf of fast-food restaurant with drive-thru, 60,890 sf of commercial retail use, 45,000 sf of supermarket use, and associated parking and other asphalt surfaces. Based

[4] As shown in the CalEEMod User's Guide Version 2022, Appendix G "Table G-11. Statewide Average Annual Offroad Equipment Emission Factors" 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.

on information provided in the AQIA, construction activities are anticipated to occur over the course of 36 months (2). 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 $234,273.68.

TABLE 4-2: CONSTRUCTION POWER COST

Land Use	**Power Cost** (per 1,000 SF of construction per month)	**Size** (1,000 SF)	**Construction Duration** (months)	**Project Construction Power Cost**
Single Family Detached Residential	$2.66	1,440.000	36	$137,894.40
Park	$2.66	209.088	36	$20,022.27
Hotel	$2.66	58.409	36	$5,593.25
General Office	$2.66	15.000	36	$1,436.40
City Library	$2.66	30.000	36	$2,872.80
High Turnover (Sit-Down) Restaurant	$2.66	16.660	36	$1,595.36
Fast-Food Restaurants w/ Drive-Thru Window	$2.66	3.500	36	$335.16
Commercial Retail	$2.66	60.890	36	$5,830.83
Supermarket	$2.66	45.000	36	$4,309.20
Parking	$2.66	133.920	36	$12,824.18
Other Asphalt Surfaces	$2.66	434.000	36	$41,559.84
			CONSTRUCTION POWER COST	***$234,273.68***

4.3.2 CONSTRUCTION ELECTRICITY USAGE

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

PROJECT CONSTRUCTION ELECTRICITY USAGE

The MVU's general service rate schedule was used to determine the Project's electrical usage. As of December 19, 2023, MVU's general service rate is $0.15 per kilowatt hours (kWh) of electricity for general services and $0.43 per kWh for residential uses (28). As shown on Table 4-3, the total electricity usage from on-site Project construction related activities is estimated to be approximately 943,894.98 kWh.

TABLE 4-3: CONSTRUCTION ELECTRICITY USAGE

Land Use	Cost per kWh	Project Construction Electricity Usage (kWh)
Single Family Detached Residential	$0.43	319,535
Park	$0.15	129,707
Hotel	$0.15	36,234
General Office	$0.15	9,305
City Library	$0.15	18,610
High Turnover (Sit-Down) Restaurant	$0.15	10,335
Fast-Food Restaurants w/ Drive-Thru Window	$0.15	2,171
Commercial Retail	$0.15	37,773
Supermarket	$0.15	27,916
Parking	$0.15	83,077
Other Asphalt Surfaces	$0.15	269,231
CONSTRUCTION ELECTRICTY USAGE (kWh)		***943,894.98***

4.3.3 CONSTRUCTION EQUIPMENT FUEL ESTIMATES

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

CONSTRUCTION EQUIPMENT

Site specific construction fleet may vary due to specific project needs at the time of construction. A detailed summary of construction equipment assumptions by phase is provided at Table 4-4.

The Municipal Code limits construction activities in two parts of the code: Sections 8.14.040(E) and 11.80.030(D)(7). Section 8.14.040(E) states that construction within the city shall only occur from 7:00 a.m. to 7:00 p.m. from Monday through Friday excluding holidays and from 8:00 a.m. to 4:00 p.m. on Saturdays. Section 11.80.030(D)(7) states that no person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 8:00 p.m. and 7:00 a.m. such that the sound creates a noise disturbance. Consistent with industry standards and typical construction practices, and for purposes of analysis, each piece of equipment listed in Table 4-4 is estimated to operate up to a total of eight (8) hours per day, or approximately two-thirds of the period during which construction activities are allowed pursuant to the code. It should be noted that most pieces of equipment would likely operate for fewer hours per day.

TABLE 4-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment	Amount	Hours Per Day	Horsepower	Load Factor
Site Preparation	Crawler Tractors	4	8	87	0.43
	Rubber Tired Dozers	3	8	367	0.40

Grading	Crawler Tractors	2	8	87	0.43
	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Scrapers	2	8	423	0.48
Building Construction	Cranes	2	8	367	0.29
	Forklifts	5	8	82	0.20
	Generator Sets	2	8	14	0.74
	Tractors/Loaders/Backhoes	5	8	84	0.37
	Welders	2	8	46	0.45
Paving	Pavers	2	8	81	0.42
	Paving Equipment	2	8	89	0.36
	Rollers	2	8	36	0.38
Architectural Coating	Air Compressors	1	8	37	0.48

PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Project construction activity timeline estimates, construction equipment schedules, equipment power ratings, load factors, and associated fuel consumption estimates are presented in Table 4-5. Eight-hour daily use of all equipment is assumed. The aggregate fuel consumption rate for all equipment is estimated at 18.5 horsepower hour per gallon (hp-hr-gal.), obtained from CARB 2018 Emissions Factors Tables and cited fuel consumption rate factors presented in Table D-24 of the Moyer guidelines (29). For the purposes of this analysis, the calculations are based on all construction equipment being diesel-powered which is consistent with industry standards. Diesel fuel would be supplied by existing residential/commercial fuel providers serving the region[5]. As presented in Table 4-5, Project construction activities would consume an estimated 187,803 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.

[5] 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

Construction Activity	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption
Site Preparation	16	Crawler Tractors	87	4	8	0.43	1,197	1,035
		Rubber Tired Dozers	367	3	8	0.40	3,523	3,047
Grading	84	Crawler Tractors	87	2	8	0.43	599	2,718
		Excavators	36	2	8	0.38	219	994
		Graders	148	1	8	0.41	485	2,204
		Rubber Tired Dozers	367	1	8	0.40	1,174	5,332
		Scrapers	423	2	8	0.48	3,249	14,751
Building Construction	686	Cranes	367	2	8	0.29	1,703	63,145
		Forklifts	82	5	8	0.20	656	24,325
		Generator Sets	14	2	8	0.74	166	6,147
		Tractors/Loaders/Backhoes	84	5	8	0.37	1,243	46,099
		Welders	46	2	8	0.45	331	12,281
Paving	77	Pavers	81	2	8	0.42	544	2,266
		Paving Equipment	89	2	8	0.36	513	2,134
		Rollers	36	2	8	0.38	219	911
Architectural Coating	54	Air Compressors	37	1	8	0.48	142	415
CONSTRUCTION FUEL DEMAND (GALLONS DIESEL FUEL)								***187,803***

4.3.4 CONSTRUCTION TRIPS AND VMT

Construction generates on-road vehicle emissions from vehicle usage for workers, hauling, and vendors commuting to and from the site. The number of worker and vendor trips are presented below in Table 4-6.

TABLE 4-6: CONSTRUCTION TRIPS AND VMT

Construction Activity	Worker Trips Per Day	Vendor Trips Per Day
Site Preparation	18	3
Grading	20	13
Building Construction	372	107
Paving	15	0
Architectural Coating	74	0

4.3.5 CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT for the Project, the construction worker trips would generate an estimated 4,855,473 VMT during the 36 months of construction (2). Based on CalEEMod methodology, it is assumed that 50% of all worker trips are from light-duty-auto vehicles (LDA), 25% are from light-duty-trucks (LDT1[6]), and 25% are from light-duty-trucks (LDT2[7]). Data regarding Project related construction worker trips were based on CalEEMod defaults utilized within the AQIA.

Vehicle fuel efficiencies for LDA, LDT1, and LDT2 were estimated using information generated within the 2021 version of the EMFAC developed by CARB. EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, and VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the CARB to project changes in future emissions from on-road mobile sources (25). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the California sub-area for the 2025 through 2028 calendar years. Data from EMFAC2021 is shown in Appendix 4.2.

Table 4-7 provides the estimated annual fuel consumption from Project construction worker trips. Based on Table 4-7, it is estimated that 162,654 gallons of fuel will be consumed related to construction worker trips during full construction of the Project. It should be noted that construction worker trips would represent a “single-event” gasoline fuel demand and would not require on-going or permanent commitment of fuel resources for this purpose.

[6] 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.

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

TABLE 4-7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2025	LDA						
	Site Preparation	16	9	18.5	2,664	32.49	82
	Grading	26	10	18.5	4,810	32.49	148
	LDT1						
	Site Preparation	16	5	18.5	1,480	25.14	59
	Grading	26	5	18.5	2,405	25.14	96
	LDT2						
	Site Preparation	16	5	18.5	1,480	25.29	59
	Grading	26	5	18.5	2,405	25.29	95
2026	LDA						
	Grading	58	10	18.5	10,730	33.43	321
	Building Construction	204	186	18.5	701,964	33.43	20,996
	Paving	77	8	18.5	11,396	33.43	341
	LDT1						
	Grading	58	5	18.5	5,365	25.70	209
	Building Construction	204	93	18.5	350,982	25.70	13,656
	Paving	77	4	18.5	5,698	25.70	222
	LDT2						
	Grading	58	5	18.5	5,365	26.01	206
	Building Construction	204	93	18.5	350,982	26.01	13,495
	Paving	77	4	18.5	5,698	26.01	219
2027	LDA						
	Building Construction	261	186	18.5	898,101	34.29	26,194
	LDT1						
	Building Construction	261	93	18.5	449,051	26.22	17,127
	LDT2						
	Building Construction	261	93	18.5	449,051	26.63	16,864
2028	LDA						
	Building Construction	221	186	18.5	760,461	35.14	21,639
	Architectural Coating	54	37	18.5	36,963	35.14	1,052
	LDT1						

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
	Building Construction	221	93	18.5	380,231	26.76	14,206
	Architectural Coating	54	19	18.5	18,981	26.76	709
	LDT2						
	Building Construction	221	93	18.5	380,231	27.23	13,963
	Architectural Coating	54	19	18.5	18,981	27.23	697
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION							***162,654***

4.3.6 CONSTRUCTION VENDOR FUEL ESTIMATES

With respect to estimated VMT, the construction vendor trips (vehicles that deliver materials to the site during construction) would generate an estimated 768,346 VMT along area roadways for the Project over the duration of construction activity (2). It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHDT) and 50% are from heavy-heavy duty trucks (HHDT). These assumptions are consistent with the CalEEMod defaults utilized within the within the AQIA (2). Vehicle fuel efficiencies for MHDTs and HHDTs were estimated using information generated within EMFAC2021. EMFAC2021 was run for the MHDT and HHDT vehicle classes within the California sub-area for the 2025 through 2028 calendar years. Data from EMFAC2021 is shown in Appendix 4.2.

Based on Table 4-8, it is estimated that 102,705 gallons of fuel will be consumed related to construction vendor trips (MHDTs and HHDTs) during full construction of the Project. It should be noted that Project construction vendor trips would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 4-8: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES

Year	Construction Activity	Duration (Days)	Vendor Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2025	MHDT						
	Site Preparation	16	2	10.2	326	8.60	38
	Grading	26	7	10.2	1,856	8.60	216
	HHDT						
	Site Preparation	16	2	10.2	326	6.22	52
	Grading	26	7	10.2	1,856	6.22	299
2026	MHDT						
	Grading	58	7	10.2	4,141	8.72	475
	Building Construction	204	54	10.2	112,363	8.72	12,878

Year	Construction Activity	Duration (Days)	Vendor Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
	HHDT						
	Grading	58	7	10.2	4,141	6.33	655
	Building Construction	204	54	10.2	112,363	6.33	17,762
2027	MHDT						
	Building Construction	261	54	10.2	143,759	8.87	16,200
	HHDT						
	Building Construction	261	54	10.2	143,759	6.45	22,285
2028	MHDT						
	Building Construction	220	49	10.2	109,956	8.60	12,784
	HHDT						
	Building Construction	221	54	10.2	121,727	6.60	18,448
TOTAL CONSTRUCTION VENDOR FUEL CONSUMPTION							***102,705***

4.3.7 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.

Additional construction-source energy efficiencies would occur due to required California regulations and best available control measures (BACM). For example, CCR Title 13, Motor Vehicles, section 2449(d)(2) Idling, limits idling times of construction vehicles to no more than five minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Section 2449(d)(2) requires medium and large

fleets adopt a written idling policy informing operators that idling is limited to 5 consecutive minutes or less. Equipment rental agreements must also inform renters/lessees of this idling restriction. 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 City 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 vehicles accessing the Project site), and facilities energy demands (energy consumed by building operations and site maintenance activities).

4.4.1 TRANSPORTATION ENERGY DEMANDS

Energy that would be consumed by Project-generated traffic is a function of total VMT and estimated vehicle fuel economies of vehicles accessing the Project site. The VMT per vehicle class can be determined by evaluated in the vehicle fleet mix and the total VMT. As with worker and vendors trips, operational vehicle fuel efficiencies were estimated using information generated within EMFAC2021 developed by CARB (25). EMFAC2021 was run for the Riverside County (SC) area for the 2028 calendar year. Data from EMFAC2021 is shown in Appendix 4.2.

As summarized on Table 4-9, the Project will result in an annual VMT of 48,830,915 and an estimated annual fuel consumption of 1,882,112 gallons of fuel.

TABLE 4-9: TOTAL PROJECT-GENERATED TRAFFIC ANNUAL FUEL CONSUMPTION (ALL VEHICLES)

Vehicle Type	Average Vehicle Fuel Economy (mpg)	Annual VMT	Estimated Annual Fuel Consumption (gallons)
LDA	35.14	24,169,454	687,739
LDT1	26.76	1,762,970	65,869
LDT2	27.23	10,351,872	380,149

Vehicle Type	Average Vehicle Fuel Economy (mpg)	Annual VMT	Estimated Annual Fuel Consumption (gallons)
MDV	21.91	7,614,119	347,471
LHDT1	17.78	1,483,849	83,479
LHDT2	16.65	424,801	25,513
MHDT	9.09	736,936	81,101
HHDT	6.60	813,029	123,218
OBUS	7.04	28,482	4,045
UBUS	6.13	18,544	3,027
MCY	42.30	1,099,136	25,985
SBUS	6.50	64,826	9,980
MH	5.90	262,896	44,537
TOTAL (ALL VEHICLES)		***48,830,915***	***1,882,112***

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 MVU. Annual natural gas and electricity demands of the Project are summarized in Tables 4-10.

TABLE 4-10: PROJECT ANNUAL ENERGY DEMAND SUMMARY

Land Use	Natural Gas Demand (kBTU/year)	Electricity Demand (kWh/year)
Single Family Detached Residential	28,451,450	7,471,395
Hotel	1,745,474	940,998
General Office	413,800	261,648
City Library	1,288,510	287,072
High Turnover (Sit-Down) Restaurant	1,900,220	585,014
Fast-Food Restaurants w/ Drive-Thru Window	399,206	122,902
Commercial Retail	360,601	594,189
Supermarket	755,314	1,443,587
Parking	0	117,147
TOTAL PROJECT ENERGY DEMAND	***35,314,575***	***11,823,952***

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., Title 24, California Green Building Standards Code).

ENHANCED VEHICLE FUEL EFFICIENCIES

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

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

4.5 SUMMARY

4.5.1 CONSTRUCTION ENERGY DEMANDS

The estimated power cost of on-site electricity usage during the construction of the Project is assumed to be approximately $234,273.68. 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 943,894.98 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 187,803 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)(2) 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 City 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 162,654 gallons of fuel. Additionally, fuel consumption from construction vendor trips (MHDTs and HHDTs) would total approximately 102,705 gallons. Diesel fuel would be supplied by regional residential/commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved using bulk purchases, transport, and use of construction materials. The 2023 IEPR released by the CEC has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements (30). As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

4.5.2 OPERATIONAL ENERGY DEMANDS

TRANSPORTATION ENERGY DEMANDS

Annual vehicular trips and related VMT generated by the operation of the Project would result in an estimated 1,882,112 gallons of fuel.

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

Enhanced fuel economies realized pursuant to federal and state regulatory actions, and related transition of vehicles to alternative energy sources (e.g., electricity, natural gas, biofuels, hydrogen cells) would likely decrease future gasoline fuel demands per VMT. Location of the Project proximate to regional and local roadway systems tends to reduce VMT within the region, acting to reduce regional vehicle energy demands. The Project would implement sidewalks, facilitating and encouraging pedestrian access. Facilitating pedestrian and bicycle access would reduce VMT and associated energy consumption. In compliance with the California Green Building Standards Code and City requirements, 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. Pursuant to CALGreen, the Project would provide conduits for EV charging stations. 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: 35,314,575 kBTU/year of natural gas; and 11,823,952 kWh/year of electricity. The Project proposes conventional residential/commercial uses reflecting contemporary energy efficient/energy conserving designs and operational programs. The Project does not propose uses that are inherently energy intensive and the energy demands in total would be comparable to other residential/commercial land use projects of similar scale and configuration.

Lastly, the Project would comply with the applicable Title 24 standards. Pursuant to CALGreen, the Project would provide solar panels. Compliance itself with applicable Title 24 standards would ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary.

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5 CONCLUSIONS

5.1 ENERGY IMPACT 1

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. Additionally, pursuant to CALGreen, the Project would provide conduits for EV charging stations and solar. The Project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California.

5.2 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 SCAG is not planning for intermodal facilities on or through the Project site.

Consistency with ISTEA supports decreasing overall per capita energy consumption and decreased reliance on fossil fuels, consistent with State CEQA Guidelines Appendix F as residents, workers and customers traveling to and from the site can use public transportation which would decrease fuel and overall VMT.

CONSISTENCY WITH TEA-21

The Project site is located along major transportation corridors with proximate access to the Interstate freeway system. The site selected for the Project facilitates access, acts to reduce vehicle miles traveled, takes advantage of existing infrastructure systems, and promotes land use compatibilities through collocation of similar 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 TEA-21 supports decreasing overall per capita energy consumption and decreased reliance on fossil fuels, consistent with State CEQA Guidelines Appendix F as residents, workers and customers traveling to and from the site can use public transportation which would decrease fuel and overall VMT.

CONSISTENCY WITH IEPR

Electricity would be provided to the Project by MVU. MVU's *Energy Efficiency Programs* 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 2023 IEPR.

Additionally, the Project will comply with the applicable Title 24 standards which would ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary. As such, development of the proposed Project would support the goals presented in the 2023 IEPR.

Consistency with IEPR supports decreasing overall per capita energy consumption, decreased reliance on fossil fuels and increased reliance on renewable energy sources, consistent with State CEQA Guidelines Appendix F.

CONSISTENCY WITH STATE OF CALIFORNIA ENERGY PLAN

The Project site is located along major transportation corridors with proximate access to the Interstate freeway system. The site selected for the Project facilitates access, takes advantage of existing infrastructure systems, and promotes land use compatibilities. 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 the State of California Energy Plan IEPR supports decreasing overall per capita energy consumption and reliance on fossil fuels, consistent with State CEQA Guidelines Appendix F as residents, workers and customers traveling to and from the site can use public transportation which would decrease fuel and overall VMT.

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

The Project would be subject to applicable Title 24 standards at the time of construction. Therefore, the Project is would not result in a significant impact on energy resources (31).

Consistency with Title 24 standards support decreasing overall per capita energy consumption, decreased reliance on fossil fuels and increased reliance on renewable energy sources consistent with State CEQA Guidelines Appendix F as the Project would need to incorporate energy efficiency standards as discussed in Section 3.2.3 of this report.

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 that were published on July 1, 2022 and became effective on January 1,

2023[8]. The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made.

Consistency with Title 24 standards support decreasing overall per capita energy consumption, decreased reliance on fossil fuels and increased reliance on renewable energy sources consistent with State CEQA Guidelines Appendix F as the Project would need to incorporate energy efficiency standards as discussed in Section 3.2.3 of this report.

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.

This would also ensure consistency with State CEQA Guidelines Appendix F as the project would interfere with implementation of AB 1493, therefore, decreasing reliance on fossil fuels.

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.

This would also ensure consistency with State CEQA Guidelines Appendix F as the project would not interfere with implementation of the RPS, therefore, increasing reliance on renewable energy sources.

CONSISTENCY WITH SB 350

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

This would also ensure consistency with State CEQA Guidelines Appendix F as the project would not interfere with implementation of SB350, therefore, increasing reliance on renewable energy sources.

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

[8] The 2022 California Energy and Green Building Standard Code became effective on January 1, 2023, however; it has since been amended on July 1, 2024 with the Intervening Code Cycle Update which is reflected in this report. Additionally, it should be noted that the Energy Code and CALGreen provisions are currently being updated, with the most recent draft update consisting of the 2025 California Energy and Green Building Code Standards that will be effective on January 1, 2025. As construction of the Project is anticipated to be completed in 2028, it is presumed that the Project would be required to comply with the Title 24 standards in place at that time.

CONSISTENCY WITH CEQA APPENDIX F

As supported in the preceding sections, the Project would achieve the goals of energy conservation as identified in Appendix F of the *State CEQA Guidelines.* The Project would decrease overall per capita energy consumption by being consistent with the ISTEA, TEA-21, 2023 IEPR, State of California Energy Plan, and Title 24 Standards. The Project would decrease reliance on fossil fuels such as coal, natural gas and oil by being consistent with the ISTEA, TEA-21, 2023 IEPR, State of California Energy Plan, Title 24 Standards and AB 1493. The Project would increase reliance on renewable energy sources by being consistent with the 2023 IEPR, Title 24 Standards, RPS and SB 350.

Additionally, pursuant to MMs 2 – AQ-6, the Project would further decrease overall per capita energy consumption, decrease reliance on fossil fuels such as coal, natural gas and oil and increase reliance on renewable energy sources. Specifically, MM 2, MM 5, and MM 6 revolve around reductions in VMT by increasing efficiency of on-site circulation through signs and paintings, weatherproof signs that identify applicable CARB anti-idling regulations, and building energy efficiency, solid waste reduction, recycling, and water conservation. MM 3 and MM 4 address the utilization of electric equipment, and MM 4 would decrease reliance on fossil fuels.

Additionally, pursuant to MMs GHG - 1 – GHG - 4, the Project would further decrease overall per capita energy consumption, decrease reliance on fossil fuels such as coal, natural gas and oil and increase reliance on renewable energy sources. MM GHG - 1 requires the non-residential portion of the Project to incorporate energy efficiency requirements, utilize renewable energy sources such as solar and incorporate measures meant to reduce potable water within the building by 12%. MM GHG – 2 supports for the residential portion of the Project, no wood fire places, primarily electric buildings where electricity is the primary source of energy for water heating, heating, ventilation and air conditioning as well as all major appliance shall be electric powered and energy star rated. MM GHG – 3 supports electric charging for electric landscaping equipment and MM GHG – 4 supports light color roofing and building materials to minimize heat island effect.

As such, based on the preceding discussion and supporting evidence, a less than significant impact is expected with respect to CEQA Guidelines Appendix F criteria.

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7 CERTIFICATIONS

The contents of this energy analysis report represent an accurate depiction of the environmental impacts associated with the proposed Town Center at Moreno Valley Specific Plan. The information contained in this energy analysis report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Haseeb Qureshi
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URBAN CROSSROADS, INC.
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EDUCATION

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

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 4.1:

CALEEMOD PROJECT EMISSIONS MODEL OUTPUTS

14556-Moreno Valley Towne Center (Unmitigated) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14556-Moreno Valley Towne Center (Unmitigated)
Construction Start Date	11/5/2025
Operational Year	2028
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	24.0
Location	33.920986394588446, -117.193682312174
County	Riverside-South Coast
City	Moreno Valley
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5592
EDFZ	11
Electric Utility	Moreno Valley Utility
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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
Single Family Housing	800	Dwelling Unit	33.1	1,440,000	9,370,286	—	2,584	—

City Park	4.80	Acre	4.80	0.00	209,088	0.00	—	—
Hotel	106	Room	1.34	58,409	0.00	—	—	—
General Office Building	15.0	1000sqft	0.34	15,000	0.00	—	—	—
Library	30.0	1000sqft	0.69	30,000	0.00	—	—	—
High Turnover (Sit Down Restaurant)	16.7	1000sqft	0.38	16,660	0.00	—	—	—
Fast Food Restaurant with Drive Thru	3.50	1000sqft	0.08	3,500	0.00	—	—	—
Regional Shopping Center	60.9	1000sqft	1.40	60,890	0.00	—	—	—
Supermarket	45.0	1000sqft	1.03	45,000	0.00	—	—	—
Parking Lot	930	Space	3.07	0.00	0.00	—	—	—
Other Asphalt Surfaces	434	1000sqft	9.97	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.	194	193	31.7	64.0	0.09	1.12	6.75	7.43	1.03	1.62	2.47	—	14,890	14,890	0.55	0.73	26.9	15,149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	194	193	70.8	76.4	0.14	3.46	8.96	12.4	3.18	3.82	7.00	—	20,122	20,122	0.63	0.85	0.73	20,391
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	30.5	30.2	20.3	33.5	0.05	0.73	4.07	4.58	0.68	0.98	1.62	—	9,052	9,052	0.25	0.49	7.31	9,212
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.56	5.51	3.71	6.11	0.01	0.13	0.74	0.84	0.12	0.18	0.30	—	1,499	1,499	0.04	0.08	1.21	1,525

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	5.88	5.05	31.7	64.0	0.09	1.12	5.98	7.10	1.03	1.44	2.47	—	14,890	14,890	0.55	0.73	26.9	15,149
2027	4.28	3.62	23.3	50.9	0.07	0.72	5.78	6.50	0.67	1.39	2.06	—	13,018	13,018	0.33	0.69	23.7	13,255
2028	194	193	23.5	55.3	0.07	0.67	6.75	7.43	0.62	1.62	2.24	—	14,020	14,020	0.32	0.73	24.2	14,269
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	9.26	7.79	70.8	64.2	0.12	3.46	8.96	12.4	3.18	3.82	7.00	—	13,219	13,219	0.53	0.19	0.09	13,290
2026	8.51	7.16	55.3	76.4	0.14	2.19	8.82	11.0	2.02	2.47	4.48	—	20,122	20,122	0.63	0.85	0.73	20,391
2027	4.20	3.53	23.6	44.9	0.07	0.72	5.78	6.50	0.67	1.39	2.06	—	12,616	12,616	0.33	0.69	0.62	12,830
2028	194	193	23.9	48.6	0.07	0.67	6.75	7.43	0.62	1.62	2.24	—	13,547	13,547	0.33	0.73	0.63	13,772
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.52	0.44	3.99	3.64	0.01	0.19	0.47	0.67	0.18	0.20	0.37	—	776	776	0.03	0.01	0.09	780
2026	3.39	2.87	20.3	33.5	0.05	0.73	3.69	4.43	0.68	0.94	1.62	—	8,666	8,666	0.25	0.43	6.48	8,805
2027	3.00	2.53	17.0	32.7	0.05	0.51	4.07	4.58	0.48	0.98	1.46	—	9,052	9,052	0.24	0.49	7.31	9,212
2028	30.5	30.2	13.9	27.9	0.04	0.40	3.61	4.01	0.37	0.87	1.24	—	7,779	7,779	0.19	0.42	5.79	7,917

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	0.08	0.73	0.66	< 0.005	0.04	0.09	0.12	0.03	0.04	0.07	—	128	128	0.01	< 0.005	0.01	129
2026	0.62	0.52	3.71	6.11	0.01	0.13	0.67	0.81	0.12	0.17	0.30	—	1,435	1,435	0.04	0.07	1.07	1,458
2027	0.55	0.46	3.10	5.97	0.01	0.09	0.74	0.84	0.09	0.18	0.27	—	1,499	1,499	0.04	0.08	1.21	1,525
2028	5.56	5.51	2.54	5.08	0.01	0.07	0.66	0.73	0.07	0.16	0.23	—	1,288	1,288	0.03	0.07	0.96	1,311

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.	138	131	78.1	567	1.34	2.69	106	109	2.63	27.0	29.6	854	166,802	167,656	94.1	6.42	755	172,675
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	127	120	81.4	451	1.26	2.65	106	109	2.60	27.0	29.6	854	159,398	160,252	94.4	6.61	419	165,000
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	119	113	63.5	446	1.07	1.58	93.3	94.8	1.53	23.7	25.2	854	132,173	133,027	93.4	5.93	543	137,672
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.7	20.6	11.6	81.4	0.20	0.29	17.0	17.3	0.28	4.32	4.60	141	21,883	22,024	15.5	0.98	89.9	22,793

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	91.2	85.8	55.3	501	1.19	0.86	106	107	0.80	27.0	27.8	—	122,112	122,112	5.92	5.96	344	124,381
Area	46.2	45.1	13.8	61.1	0.09	1.11	—	1.11	1.10	—	1.10	0.00	17,007	17,007	0.32	0.03	—	17,025
Energy	1.04	0.52	9.03	4.61	0.06	0.72	—	0.72	0.72	—	0.72	—	25,999	25,999	2.07	0.15	—	26,096
Water	—	—	—	—	—	—	—	—	—	—	—	105	1,683	1,789	10.9	0.27	—	2,143
Waste	—	—	—	—	—	—	—	—	—	—	—	748	0.00	748	74.8	0.00	—	2,619
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	410
Total	138	131	78.1	567	1.34	2.69	106	109	2.63	27.0	29.6	854	166,802	167,656	94.1	6.42	755	172,675
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	85.7	80.2	59.1	441	1.12	0.86	106	107	0.80	27.0	27.8	—	114,871	114,871	6.28	6.15	8.93	116,870
Area	40.2	39.5	13.3	5.65	0.08	1.07	—	1.07	1.07	—	1.07	0.00	16,845	16,845	0.32	0.03	—	16,862
Energy	1.04	0.52	9.03	4.61	0.06	0.72	—	0.72	0.72	—	0.72	—	25,999	25,999	2.07	0.15	—	26,096
Water	—	—	—	—	—	—	—	—	—	—	—	105	1,683	1,789	10.9	0.27	—	2,143
Waste	—	—	—	—	—	—	—	—	—	—	—	748	0.00	748	74.8	0.00	—	2,619
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	410
Total	127	120	81.4	451	1.26	2.65	106	109	2.60	27.0	29.6	854	159,398	160,252	94.4	6.61	419	165,000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	74.8	70.0	53.2	403	1.01	0.76	93.3	94.0	0.72	23.7	24.4	—	103,225	103,225	5.57	5.51	132	105,137
Area	42.9	42.6	1.26	38.4	0.01	0.10	—	0.10	0.09	—	0.09	0.00	1,265	1,265	0.03	< 0.005	—	1,267
Energy	1.04	0.52	9.03	4.61	0.06	0.72	—	0.72	0.72	—	0.72	—	25,999	25,999	2.07	0.15	—	26,096
Water	—	—	—	—	—	—	—	—	—	—	—	105	1,683	1,789	10.9	0.27	—	2,143
Waste	—	—	—	—	—	—	—	—	—	—	—	748	0.00	748	74.8	0.00	—	2,619
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	410
Total	119	113	63.5	446	1.07	1.58	93.3	94.8	1.53	23.7	25.2	854	132,173	133,027	93.4	5.93	543	137,672
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	13.7	12.8	9.70	73.6	0.18	0.14	17.0	17.2	0.13	4.32	4.45	—	17,090	17,090	0.92	0.91	21.9	17,407
Area	7.83	7.77	0.23	7.00	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	209	209	< 0.005	< 0.005	—	210

Energy	0.19	0.10	1.65	0.84	0.01	0.13	—	0.13	0.13	—	0.13	—	4,304	4,304	0.34	0.02	—	4,320
Water	—	—	—	—	—	—	—	—	—	—	—	17.5	279	296	1.81	0.04	—	355
Waste	—	—	—	—	—	—	—	—	—	—	—	124	0.00	124	12.4	0.00	—	434
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	68.0	68.0
Total	21.7	20.6	11.6	81.4	0.20	0.29	17.0	17.3	0.28	4.32	4.60	141	21,883	22,024	15.5	0.98	89.9	22,793

3. Construction Emissions Details

3.1. Site Preparation (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	4.82	4.05	37.5	32.4	0.05	1.93	—	1.93	1.78	—	1.78	—	5,528	5,528	0.22	0.04	—	5,547
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.64	1.42	< 0.005	0.08	—	0.08	0.08	—	0.08	—	242	242	0.01	< 0.005	—	243

Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.26	< 0.005	0.02	—	0.02	0.01	—	0.01	—	40.1	40.1	< 0.005	< 0.005	—	40.3
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.02	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	227	227	0.01	0.01	0.02	230
Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.8	91.8	< 0.005	0.01	0.01	96.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	< 0.005	4.21
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.67	1.67	< 0.005	< 0.005	< 0.005	1.69

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
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 (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	4.24	3.57	32.6	29.4	0.06	1.52	—	1.52	1.40	—	1.40	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.30	2.07	< 0.005	0.11	—	0.11	0.10	—	0.10	—	473	473	0.02	< 0.005	—	475
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.42	0.38	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78.3	78.3	< 0.005	< 0.005	—	78.6
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.10	1.17	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	259	259	0.01	0.01	0.03	262
Vendor	0.02	0.01	0.46	0.14	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	398	398	0.01	0.06	0.03	416
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.03	18.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.0	28.0	< 0.005	< 0.005	0.03	29.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.06	3.06	< 0.005	< 0.005	0.01	3.10
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.64	4.64	< 0.005	< 0.005	0.01	4.86
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. Grading (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	4.03	3.39	30.0	28.7	0.06	1.38	—	1.38	1.27	—	1.27	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.54	4.81	4.60	0.01	0.22	—	0.22	0.20	—	0.20	—	1,078	1,078	0.04	0.01	—	1,081
Dust From Material Movement	—	—	—	—	—	—	0.43	0.43	—	0.16	0.16	—	—	—	—	—	—	—
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	0.12	0.10	0.88	0.84	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.09	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	254	254	< 0.005	0.01	0.02	257
Vendor	0.02	0.01	0.44	0.13	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	392	392	0.01	0.06	0.03	410
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	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.2	41.2	< 0.005	< 0.005	0.06	41.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.8	62.8	< 0.005	0.01	0.07	65.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.82	6.82	< 0.005	< 0.005	0.01	6.92
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	2.56	2.14	19.6	25.2	0.05	0.75	—	0.75	0.69	—	0.69	—	4,817	4,817	0.20	0.04	—	4,833
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	2.56	2.14	19.6	25.2	0.05	0.75	—	0.75	0.69	—	0.69	—	4,817	4,817	0.20	0.04	—	4,833
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	1.42	1.19	10.9	14.0	0.03	0.42	—	0.42	0.38	—	0.38	—	2,677	2,677	0.11	0.02	—	2,686
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	0.26	0.22	1.99	2.55	< 0.005	0.08	—	0.08	0.07	—	0.07	—	443	443	0.02	< 0.005	—	445
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	1.75	1.58	1.46	26.7	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	5,134	5,134	0.22	0.18	17.4	5,210
Vendor	0.15	0.07	3.44	1.07	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,221	3,221	0.07	0.50	8.81	3,380
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	1.67	1.49	1.63	20.3	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	4,721	4,721	0.07	0.18	0.45	4,778
Vendor	0.14	0.06	3.59	1.10	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,223	3,223	0.07	0.50	0.23	3,374
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	0.92	0.82	0.99	11.8	0.00	0.00	2.66	2.66	0.00	0.62	0.62	—	2,657	2,657	0.04	0.10	4.18	2,693
Vendor	0.08	0.04	2.00	0.60	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,791	1,791	0.04	0.28	2.10	1,876
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	0.17	0.15	0.18	2.15	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	440	440	0.01	0.02	0.69	446
Vendor	0.01	0.01	0.37	0.11	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	296	296	0.01	0.05	0.35	311
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	2.46	2.06	18.7	25.1	0.05	0.67	—	0.67	0.62	—	0.62	—	4,817	4,817	0.20	0.04	—	4,833

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	2.46	2.06	18.7	25.1	0.05	0.67	—	0.67	0.62	—	0.62	—	4,817	4,817	0.20	0.04	—	4,833
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	1.76	1.47	13.4	18.0	0.03	0.48	—	0.48	0.44	—	0.44	—	3,440	3,440	0.14	0.03	—	3,452
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	0.32	0.27	2.44	3.28	0.01	0.09	—	0.09	0.08	—	0.08	—	570	570	0.02	< 0.005	—	572
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	1.68	1.49	1.29	24.7	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	5,039	5,039	0.06	0.18	15.7	5,109
Vendor	0.14	0.07	3.31	1.04	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,162	3,162	0.07	0.47	8.05	3,313
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	1.60	1.41	1.46	18.7	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	4,635	4,635	0.07	0.18	0.41	4,689
Vendor	0.14	0.06	3.46	1.07	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,164	3,164	0.07	0.47	0.21	3,308
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	1.14	1.01	1.15	14.0	0.00	0.00	3.42	3.42	0.00	0.80	0.80	—	3,352	3,352	0.05	0.13	4.82	3,396
Vendor	0.10	0.05	2.46	0.75	0.02	0.03	0.65	0.68	0.03	0.18	0.21	—	2,259	2,259	0.05	0.34	2.48	2,364
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	0.21	0.18	0.21	2.56	0.00	0.00	0.62	0.62	0.00	0.15	0.15	—	555	555	0.01	0.02	0.80	562
Vendor	0.02	0.01	0.45	0.14	< 0.005	0.01	0.12	0.12	0.01	0.03	0.04	—	374	374	0.01	0.06	0.41	391
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. Building Construction (2028) - 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	2.37	1.98	17.8	25.1	0.05	0.60	—	0.60	0.55	—	0.55	—	4,818	4,818	0.20	0.04	—	4,834
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	2.37	1.98	17.8	25.1	0.05	0.60	—	0.60	0.55	—	0.55	—	4,818	4,818	0.20	0.04	—	4,834
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	1.44	1.21	10.8	15.3	0.03	0.37	—	0.37	0.34	—	0.34	—	2,932	2,932	0.12	0.02	—	2,942
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	0.26	0.22	1.97	2.79	0.01	0.07	—	0.07	0.06	—	0.06	—	485	485	0.02	< 0.005	—	487
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	1.62	1.44	1.28	23.0	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	4,945	4,945	0.06	0.18	14.0	5,013
Vendor	0.14	0.07	3.15	1.01	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,090	3,090	0.05	0.47	7.33	3,240
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	1.40	1.36	1.45	17.4	0.00	0.00	4.87	4.87	0.00	1.14	1.14	—	4,549	4,549	0.07	0.18	0.36	4,603
Vendor	0.14	0.06	3.29	1.04	0.02	0.05	0.92	0.96	0.05	0.25	0.30	—	3,093	3,093	0.05	0.47	0.19	3,235
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	0.84	0.82	0.88	11.2	0.00	0.00	2.92	2.92	0.00	0.68	0.68	—	2,803	2,803	0.04	0.11	3.69	2,840
Vendor	0.09	0.04	2.02	0.63	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	1,881	1,881	0.03	0.29	1.92	1,970
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	0.15	0.15	0.16	2.04	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	464	464	0.01	0.02	0.61	470
Vendor	0.02	0.01	0.37	0.11	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	312	312	0.01	0.05	0.32	326
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. Paving (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	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.44	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.44	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	0.19	0.16	1.50	2.10	< 0.005	0.07	—	0.07	0.06	—	0.06	—	319	319	0.01	< 0.005	—	320
Paving	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.8	52.8	< 0.005	< 0.005	—	52.9
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	1.08	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	207	207	0.01	0.01	0.70	210
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	0.07	0.06	0.07	0.82	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	190	190	< 0.005	0.01	0.02	193
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	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.6	40.6	< 0.005	< 0.005	0.06	41.2
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.73	6.73	< 0.005	< 0.005	0.01	6.82
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 (2028) - 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	0.17	0.14	1.08	1.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	190	190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.17	0.14	1.08	1.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	178	178	0.01	< 0.005	—	179

Architectural Coating	190	190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.16	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Architectural Coatings	28.0	28.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.36	4.36	< 0.005	< 0.005	—	4.38
Architectural Coatings	5.12	5.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.29	0.26	4.61	0.00	0.00	0.97	0.97	0.00	0.23	0.23	—	989	989	0.01	0.04	2.81	1,003
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	0.28	0.27	0.29	3.49	0.00	0.00	0.97	0.97	0.00	0.23	0.23	—	910	910	0.01	0.04	0.07	921
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	0.04	0.04	0.04	0.54	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	136	136	< 0.005	0.01	0.18	138
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	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	22.6	22.6	< 0.005	< 0.005	0.03	22.9
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

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	27.6	25.8	17.7	162	0.40	0.28	35.4	35.7	0.26	8.98	9.25	—	40,487	40,487	1.86	1.92	115	41,221
City Park	0.04	0.04	0.04	0.40	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	111	111	< 0.005	< 0.005	0.32	113

Hotel	3.14	2.94	2.07	19.1	0.05	0.03	4.23	4.26	0.03	1.07	1.11	—	4,830	4,830	0.22	0.23	13.7	4,917
General Office Building	0.82	0.75	0.75	7.30	0.02	0.01	1.80	1.81	0.01	0.46	0.47	—	2,026	2,026	0.07	0.09	5.83	2,059
Library	9.59	8.83	7.70	73.7	0.19	0.13	17.5	17.7	0.13	4.45	4.58	—	19,812	19,812	0.75	0.86	56.8	20,145
High Turnover (Sit Down Restaurant)	7.68	7.39	3.23	26.3	0.05	0.04	4.13	4.17	0.04	1.05	1.09	—	4,993	4,993	0.40	0.32	13.4	5,113
Fast Food Restaurant with Drive Thru	7.24	6.90	3.58	30.8	0.07	0.05	5.70	5.75	0.05	1.45	1.49	—	6,686	6,686	0.41	0.37	18.5	6,826
Regional Shopping Center	16.9	16.1	9.00	79.0	0.18	0.13	15.5	15.6	0.12	3.93	4.05	—	17,999	17,999	1.01	0.95	50.2	18,358
Supermarket	18.2	17.1	11.3	102	0.25	0.18	21.9	22.1	0.17	5.57	5.73	—	25,167	25,167	1.20	1.22	71.1	25,631
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	91.2	85.8	55.3	501	1.19	0.86	106	107	0.80	27.0	27.8	—	122,112	122,112	5.92	5.96	344	124,381
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	25.9	24.2	18.9	141	0.37	0.28	35.4	35.7	0.26	8.98	9.25	—	38,074	38,074	1.96	1.98	2.97	38,717
City Park	0.04	0.04	0.04	0.33	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	104	104	< 0.005	< 0.005	0.01	106

Hotel	2.96	2.75	2.22	16.6	0.04	0.03	4.23	4.26	0.03	1.07	1.11	—	4,542	4,542	0.23	0.23	0.36	4,617
General Office Building	0.78	0.70	0.80	6.06	0.02	0.01	1.80	1.81	0.01	0.46	0.47	—	1,902	1,902	0.07	0.09	0.15	1,931
Library	9.06	8.29	8.25	62.1	0.18	0.13	17.5	17.7	0.13	4.45	4.58	—	18,614	18,614	0.78	0.89	1.47	18,900
High Turnover (Sit Down Restaurant)	7.18	6.88	3.44	25.1	0.05	0.04	4.13	4.17	0.04	1.05	1.09	—	4,715	4,715	0.43	0.33	0.35	4,826
Fast Food Restaurant with Drive Thru	6.78	6.44	3.82	28.2	0.06	0.05	5.70	5.75	0.05	1.45	1.49	—	6,300	6,300	0.44	0.38	0.48	6,426
Regional Shopping Center	15.8	15.0	9.61	71.2	0.17	0.13	15.5	15.6	0.12	3.93	4.05	—	16,948	16,948	1.08	0.98	1.30	17,268
Supermarket	17.1	16.0	12.0	89.7	0.23	0.18	21.9	22.1	0.17	5.57	5.73	—	23,672	23,672	1.27	1.26	1.84	24,080
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	85.7	80.2	59.1	441	1.12	0.86	106	107	0.80	27.0	27.8	—	114,871	114,871	6.28	6.15	8.93	116,870
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.60	4.28	3.44	26.1	0.07	0.05	6.24	6.29	0.05	1.58	1.63	—	6,242	6,242	0.32	0.32	8.04	6,354
City Park	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	9.44	9.44	< 0.005	< 0.005	0.01	9.59
Hotel	0.51	0.47	0.39	2.99	0.01	0.01	0.73	0.73	0.01	0.18	0.19	—	726	726	0.04	0.04	0.94	738

General Office Building	0.11	0.09	0.11	0.86	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	237	237	0.01	0.01	0.31	241
Library	1.41	1.29	1.32	10.1	0.03	0.02	2.71	2.73	0.02	0.69	0.71	—	2,677	2,677	0.11	0.13	3.49	2,722
High Turnover (Sit Down Restaurant)	1.04	1.00	0.51	3.77	0.01	0.01	0.60	0.60	0.01	0.15	0.16	—	632	632	0.06	0.04	0.77	647
Fast Food Restaurant with Drive Thru	0.97	0.92	0.56	4.20	0.01	0.01	0.81	0.82	0.01	0.21	0.21	—	836	836	0.06	0.05	1.05	854
Regional Shopping Center	2.33	2.20	1.44	10.9	0.02	0.02	2.26	2.28	0.02	0.57	0.59	—	2,302	2,302	0.15	0.13	2.92	2,348
Supermarket	2.68	2.51	1.93	14.7	0.04	0.03	3.42	3.45	0.03	0.87	0.89	—	3,430	3,430	0.18	0.18	4.41	3,493
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	13.7	12.8	9.70	73.6	0.18	0.14	17.0	17.2	0.13	4.32	4.45	—	17,090	17,090	0.92	0.91	21.9	17,407

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	9,277	9,277	0.68	0.08	—	9,318
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	1,168	1,168	0.09	0.01	—	1,174
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	325	325	0.02	< 0.005	—	326
Library	—	—	—	—	—	—	—	—	—	—	—	—	356	356	0.03	< 0.005	—	358
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	726	726	0.05	0.01	—	730
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	153	153	0.01	< 0.005	—	153
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	738	738	0.05	0.01	—	741
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	1,792	1,792	0.13	0.02	—	1,800
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	145	145	0.01	< 0.005	—	146
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	14,681	14,681	1.07	0.13	—	14,747

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	9,277	9,277	0.68	0.08	—	9,318
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	1,168	1,168	0.09	0.01	—	1,174
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	325	325	0.02	< 0.005	—	326
Library	—	—	—	—	—	—	—	—	—	—	—	—	356	356	0.03	< 0.005	—	358
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	726	726	0.05	0.01	—	730
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	153	153	0.01	< 0.005	—	153
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	738	738	0.05	0.01	—	741
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	1,792	1,792	0.13	0.02	—	1,800
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	145	145	0.01	< 0.005	—	146
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	14,681	14,681	1.07	0.13	—	14,747

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	1,536	1,536	0.11	0.01	—	1,543
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	193	193	0.01	< 0.005	—	194
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	53.8	53.8	< 0.005	< 0.005	—	54.0
Library	—	—	—	—	—	—	—	—	—	—	—	—	59.0	59.0	< 0.005	< 0.005	—	59.3
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	120	120	0.01	< 0.005	—	121
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	25.3	25.3	< 0.005	< 0.005	—	25.4
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	122	122	0.01	< 0.005	—	123
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	297	297	0.02	< 0.005	—	298
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	24.1	24.1	< 0.005	< 0.005	—	24.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,431	2,431	0.18	0.02	—	2,441

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.84	0.42	7.18	3.06	0.05	0.58	—	0.58	0.58	—	0.58	—	9,118	9,118	0.81	0.02	—	9,144
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	0.05	0.03	0.47	0.39	< 0.005	0.04	—	0.04	0.04	—	0.04	—	559	559	0.05	< 0.005	—	561
General Office Building	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Library	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	413	413	0.04	< 0.005	—	414
High Turnover (Sit Down Restaurant)	0.06	0.03	0.51	0.43	< 0.005	0.04	—	0.04	0.04	—	0.04	—	609	609	0.05	< 0.005	—	611
Fast Food Restaurant with Drive Thru	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	128	128	0.01	< 0.005	—	128
Regional Shopping Center	0.01	0.01	0.10	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	0.01	< 0.005	—	116
Supermarket	0.02	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	242	242	0.02	< 0.005	—	243

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.04	0.52	9.03	4.61	0.06	0.72	—	0.72	0.72	—	0.72	—	11,318	11,318	1.00	0.02	—	11,349
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.84	0.42	7.18	3.06	0.05	0.58	—	0.58	0.58	—	0.58	—	9,118	9,118	0.81	0.02	—	9,144
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	0.05	0.03	0.47	0.39	< 0.005	0.04	—	0.04	0.04	—	0.04	—	559	559	0.05	< 0.005	—	561
General Office Building	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	133	133	0.01	< 0.005	—	133
Library	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	413	413	0.04	< 0.005	—	414
High Turnover (Sit Down Restaurant)	0.06	0.03	0.51	0.43	< 0.005	0.04	—	0.04	0.04	—	0.04	—	609	609	0.05	< 0.005	—	611
Fast Food Restaurant with Drive Thru	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	128	128	0.01	< 0.005	—	128
Regional Shopping Center	0.01	0.01	0.10	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	0.01	< 0.005	—	116
Supermarket	0.02	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	242	242	0.02	< 0.005	—	243

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.04	0.52	9.03	4.61	0.06	0.72	—	0.72	0.72	—	0.72	—	11,318	11,318	1.00	0.02	—	11,349
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.15	0.08	1.31	0.56	0.01	0.11	—	0.11	0.11	—	0.11	—	1,510	1,510	0.13	< 0.005	—	1,514
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Hotel	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	92.6	92.6	0.01	< 0.005	—	92.9
General Office Building	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.0	22.0	< 0.005	< 0.005	—	22.0
Library	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	68.4	68.4	0.01	< 0.005	—	68.6
High Turnover (Sit Down Restaurant)	0.01	0.01	0.09	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	101	101	0.01	< 0.005	—	101
Fast Food Restaurant with Drive Thru	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.2
Regional Shopping Center	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.1	19.1	< 0.005	< 0.005	—	19.2
Supermarket	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	40.1	40.1	< 0.005	< 0.005	—	40.2
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.19	0.10	1.65	0.84	0.01	0.13	—	0.13	0.13	—	0.13	—	1,874	1,874	0.17	< 0.005	—	1,879

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.55	0.78	13.3	5.65	0.08	1.07	—	1.07	1.07	—	1.07	0.00	16,845	16,845	0.32	0.03	—	16,862
Consumer Products	35.9	35.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.80	2.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	5.95	5.59	0.51	55.4	< 0.005	0.04	—	0.04	0.03	—	0.03	—	162	162	0.01	< 0.005	—	163
Total	46.2	45.1	13.8	61.1	0.09	1.11	—	1.11	1.10	—	1.10	0.00	17,007	17,007	0.32	0.03	—	17,025
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.55	0.78	13.3	5.65	0.08	1.07	—	1.07	1.07	—	1.07	0.00	16,845	16,845	0.32	0.03	—	16,862
Consumer Products	35.9	35.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	2.80	2.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	40.2	39.5	13.3	5.65	0.08	1.07	—	1.07	1.07	—	1.07	0.00	16,845	16,845	0.32	0.03	—	16,862
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.02	0.01	0.17	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	191	191	< 0.005	< 0.005	—	191
Consumer Products	6.55	6.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.51	0.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.74	0.70	0.06	6.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.4	18.4	< 0.005	< 0.005	—	18.5
Total	7.83	7.77	0.23	7.00	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	209	209	< 0.005	< 0.005	—	210

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	62.4	1,472	1,534	6.50	0.16	—	1,746
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	21.8	21.8	< 0.005	< 0.005	—	21.9
Hotel	—	—	—	—	—	—	—	—	—	—	—	5.15	22.7	27.9	0.53	0.01	—	44.9

General Office Building	—	—	—	—	—	—	—	—	—	—	—	5.11	22.5	27.6	0.53	0.01	—	44.5
Library	—	—	—	—	—	—	—	—	—	—	—	1.80	7.93	9.73	0.19	< 0.005	—	15.7
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	9.69	42.7	52.4	1.00	0.02	—	84.5
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	2.04	8.98	11.0	0.21	0.01	—	17.8
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	8.64	38.1	46.8	0.89	0.02	—	75.4
Supermarket	—	—	—	—	—	—	—	—	—	—	—	10.6	46.9	57.5	1.09	0.03	—	92.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	105	1,683	1,789	10.9	0.27	—	2,143
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	62.4	1,472	1,534	6.50	0.16	—	1,746
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	21.8	21.8	< 0.005	< 0.005	—	21.9
Hotel	—	—	—	—	—	—	—	—	—	—	—	5.15	22.7	27.9	0.53	0.01	—	44.9

General Office Building	—	—	—	—	—	—	—	—	—	—	—	5.11	22.5	27.6	0.53	0.01	—	44.5
Library	—	—	—	—	—	—	—	—	—	—	—	1.80	7.93	9.73	0.19	< 0.005	—	15.7
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	9.69	42.7	52.4	1.00	0.02	—	84.5
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	2.04	8.98	11.0	0.21	0.01	—	17.8
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	8.64	38.1	46.8	0.89	0.02	—	75.4
Supermarket	—	—	—	—	—	—	—	—	—	—	—	10.6	46.9	57.5	1.09	0.03	—	92.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	105	1,683	1,789	10.9	0.27	—	2,143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.3	244	254	1.08	0.03	—	289
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	3.62	3.62	< 0.005	< 0.005	—	3.63
Hotel	—	—	—	—	—	—	—	—	—	—	—	0.85	3.76	4.62	0.09	< 0.005	—	7.44

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.85	3.73	4.58	0.09	< 0.005	—	7.38
Library	—	—	—	—	—	—	—	—	—	—	—	0.30	1.31	1.61	0.03	< 0.005	—	2.60
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	1.60	7.08	8.68	0.17	< 0.005	—	14.0
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.34	1.49	1.82	0.03	< 0.005	—	2.94
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	1.43	6.31	7.74	0.15	< 0.005	—	12.5
Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.76	7.76	9.52	0.18	< 0.005	—	15.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	17.5	279	296	1.81	0.04	—	355

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	395	0.00	395	39.5	0.00	—	1,381
City Park	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.78
Hotel	—	—	—	—	—	—	—	—	—	—	—	31.3	0.00	31.3	3.13	0.00	—	109
General Office Building	—	—	—	—	—	—	—	—	—	—	—	7.52	0.00	7.52	0.75	0.00	—	26.3
Library	—	—	—	—	—	—	—	—	—	—	—	14.9	0.00	14.9	1.49	0.00	—	52.1
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	107	0.00	107	10.7	0.00	—	374
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	21.7	0.00	21.7	2.17	0.00	—	76.0
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	34.5	0.00	34.5	3.44	0.00	—	121
Supermarket	—	—	—	—	—	—	—	—	—	—	—	137	0.00	137	13.7	0.00	—	479
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	748	0.00	748	74.8	0.00	—	2,619

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	395	0.00	395	39.5	0.00	—	1,381
City Park	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.78
Hotel	—	—	—	—	—	—	—	—	—	—	—	31.3	0.00	31.3	3.13	0.00	—	109
General Office Building	—	—	—	—	—	—	—	—	—	—	—	7.52	0.00	7.52	0.75	0.00	—	26.3
Library	—	—	—	—	—	—	—	—	—	—	—	14.9	0.00	14.9	1.49	0.00	—	52.1
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	107	0.00	107	10.7	0.00	—	374
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	21.7	0.00	21.7	2.17	0.00	—	76.0
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	34.5	0.00	34.5	3.44	0.00	—	121
Supermarket	—	—	—	—	—	—	—	—	—	—	—	137	0.00	137	13.7	0.00	—	479
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	748	0.00	748	74.8	0.00	—	2,619

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.4	0.00	65.4	6.53	0.00	—	229
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.13
Hotel	—	—	—	—	—	—	—	—	—	—	—	5.18	0.00	5.18	0.52	0.00	—	18.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1.24	0.00	1.24	0.12	0.00	—	4.35
Library	—	—	—	—	—	—	—	—	—	—	—	2.47	0.00	2.47	0.25	0.00	—	8.62
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	17.7	0.00	17.7	1.77	0.00	—	61.9
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	3.60	0.00	3.60	0.36	0.00	—	12.6
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	5.70	0.00	5.70	0.57	0.00	—	20.0
Supermarket	—	—	—	—	—	—	—	—	—	—	—	22.6	0.00	22.6	2.26	0.00	—	79.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	124	0.00	124	12.4	0.00	—	434

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.22	9.22
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	32.8
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.35	9.35
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.96	1.96
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23

Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	357	357
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	410
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.22	9.22
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	32.8
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.35	9.35
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.96	1.96
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	357	357
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	410
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.53	1.53
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.43	5.43
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	1.55
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.33	0.33
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	59.1	59.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	68.0	68.0

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

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	11/5/2025	11/26/2025	5.00	16.0	—

Grading	Grading	11/26/2025	03/23/2026	5.00	84.0	—
Building Construction	Building Construction	03/23/2026	11/6/2028	5.00	686	—
Paving	Paving	07/23/2026	11/6/2026	5.00	77.0	—
Architectural Coating	Architectural Coating	08/23/2028	11/6/2028	5.00	54.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	2.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	5.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	3.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	13.0	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	372	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	107	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	74.5	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	2,916,000	972,000	344,189	114,730	34,081

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	—	—	320	0.00	—
Grading	—	—	1,680	0.00	—
Paving	0.00	0.00	0.00	0.00	21.9

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
Single Family Housing	8.82	0%
City Park	0.00	0%
Hotel	0.00	0%
General Office Building	0.00	0%

Library	0.00	0%
High Turnover (Sit Down Restaurant)	0.00	0%
Fast Food Restaurant with Drive Thru	0.00	0%
Regional Shopping Center	0.00	0%
Supermarket	0.00	0%
Parking Lot	3.07	100%
Other Asphalt Surfaces	9.97	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	453	0.03	< 0.005
2026	0.00	453	0.03	< 0.005
2027	0.00	453	0.03	< 0.005
2028	0.00	453	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	7,544	7,584	6,784	2,716,017	49,727	49,990	44,717	17,902,768
City Park	4.00	9.41	10.5	2,082	53.0	125	139	27,578
Hotel	848	855	630	298,521	5,923	5,975	4,398	2,085,156
General Office Building	192	33.1	10.5	52,333	2,544	439	139	693,376
Library	2,162	2,403	1,263	754,815	22,281	24,760	13,012	7,778,475
High Turnover (Sit Down Restaurant)	1,786	2,039	2,376	695,863	4,387	5,009	5,837	1,709,283

Fast Food Restaurant with Drive Thru	1,636	2,156	1,654	625,218	6,107	8,050	6,175	2,334,026
Regional Shopping Center	4,112	4,936	2,599	1,464,935	18,216	21,868	11,513	6,489,740
Supermarket	4,224	5,074	4,609	1,606,201	25,801	30,993	28,151	9,810,512
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	800
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

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)

2916000	972,000	344,189	114,730	34,081

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)
Single Family Housing	7,471,395	453	0.0330	0.0040	28,451,451
City Park	0.00	453	0.0330	0.0040	0.00
Hotel	940,998	453	0.0330	0.0040	1,745,474
General Office Building	261,648	453	0.0330	0.0040	413,800
Library	287,072	453	0.0330	0.0040	1,288,510
High Turnover (Sit Down Restaurant)	585,014	453	0.0330	0.0040	1,900,220
Fast Food Restaurant with Drive Thru	122,902	453	0.0330	0.0040	399,206
Regional Shopping Center	594,189	453	0.0330	0.0040	360,601
Supermarket	1,443,587	453	0.0330	0.0040	755,314
Parking Lot	117,147	453	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	453	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)
Single Family Housing	32,539,020	181,588,668
City Park	0.00	3,315,245
Hotel	2,688,878	0.00
General Office Building	2,666,006	0.00
Library	938,667	0.00
High Turnover (Sit Down Restaurant)	5,056,872	0.00
Fast Food Restaurant with Drive Thru	1,062,368	0.00
Regional Shopping Center	4,510,276	0.00
Supermarket	5,547,070	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	732	—
City Park	0.41	—
Hotel	58.0	—
General Office Building	14.0	—
Library	27.6	—
High Turnover (Sit Down Restaurant)	198	—
Fast Food Restaurant with Drive Thru	40.3	—
Regional Shopping Center	63.9	—
Supermarket	254	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
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
City Park	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	User Defined	750	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Library	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Library	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Library	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00

Library	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	User Defined	750	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0
Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	User Defined	750	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	User Defined	150	< 0.005	7.50	7.50	20.0
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
Supermarket	Other commercial A/C and heat pumps	User Defined	750	< 0.005	4.00	4.00	18.0
Supermarket	Supermarket refrigeration and condensing units	User Defined	150	26.5	16.5	16.5	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

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	28.0	annual days of extreme heat
Extreme Precipitation	2.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	7.76	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	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 Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	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 Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	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	99.1

AQ-PM	56.1
AQ-DPM	64.1
Drinking Water	10.2
Lead Risk Housing	19.2
Pesticides	62.3
Toxic Releases	54.3
Traffic	43.8
Effect Indicators	—
CleanUp Sites	17.1
Groundwater	0.00
Haz Waste Facilities/Generators	40.9
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	72.0
Cardio-vascular	93.5
Low Birth Weights	68.4
Socioeconomic Factor Indicators	—
Education	49.4
Housing	62.4
Linguistic	56.3
Poverty	60.6
Unemployment	58.4

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	46.40061594
Employed	68.38188118
Median HI	54.09983318
Education	—
Bachelor's or higher	45.52803798
High school enrollment	100
Preschool enrollment	16.32234056
Transportation	—
Auto Access	70.20402926
Active commuting	11.88245862
Social	—
2-parent households	45.51520595
Voting	16.7842936
Neighborhood	—
Alcohol availability	82.6767612
Park access	53.93301681
Retail density	39.66380085
Supermarket access	38.16245348
Tree canopy	0.898242012
Housing	—
Homeownership	49.23649429
Housing habitability	68.70268189
Low-inc homeowner severe housing cost burden	15.42409855
Low-inc renter severe housing cost burden	85.268831
Uncrowded housing	85.268831
Health Outcomes	—
Insured adults	21.95560118
Arthritis	90.5

Asthma ER Admissions	30.2
High Blood Pressure	79.9
Cancer (excluding skin)	85.3
Asthma	49.0
Coronary Heart Disease	94.7
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	80.8
Life Expectancy at Birth	17.2
Cognitively Disabled	33.5
Physically Disabled	52.4
Heart Attack ER Admissions	3.3
Mental Health Not Good	51.7
Chronic Kidney Disease	90.3
Obesity	37.0
Pedestrian Injuries	19.6
Physical Health Not Good	69.2
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	20.5
Current Smoker	45.9
No Leisure Time for Physical Activity	52.7
Climate Change Exposures	—
Wildfire Risk	18.6
SLR Inundation Area	0.0
Children	35.2
Elderly	94.0
English Speaking	77.1
Foreign-born	60.7

Outdoor Workers	46.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.1
Traffic Density	36.6
Traffic Access	23.0
Other Indices	—
Hardship	35.1
Other Decision Support	—
2016 Voting	26.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	63.0
Healthy Places Index Score for Project Location (b)	42.0
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	Land uses modeled consistent with information provided in Traffic and on Site Plan
Construction: Construction Phases	Taken from latest provided construction schedule
Construction: Off-Road Equipment	Construction equipment based on consultation with the Project Team
Construction: Dust From Material Movement	Analysis conservatively assumes that up to 20 acres can be disturbed per day As such, the “Total Acres Graded” field in CalEEMod has been revised to 320 acres for site preparation (20 acres disturbed per day x 16 working days) and 1680 acres for grading activities (20 acres disturbed per day x 84 working days)
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Vehicle Data	Trip characteristics based on information provided in the Traffic analysis Pass-by and internal capture was accounted for in the "Pass By Trip" category.
Operations: Hearths	SCAQMD Rule 445
Characteristics: Project Details	—
Operations: Architectural Coatings	SCAQMD Rule 1113
Operations: Refrigerants	As of 1 January 2022, new commercial refrigeration equipment may not use refrigerants with a GWP of 150 or greater. Further, R-404A (the CalEEMod default) is unacceptable for new supermarket and cold storage systems as of 1 January 2019 and 2023, respectively. 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 4.2:

EMFAC2021

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2025
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	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Riverside (SC)	2025	HHDT	Aggregate	Aggregate	Gasoline	6.232252524	303.889871	0.078875502	78.87550173	324061.9332	303.889871	2014903.459	6.22	HHDT
Riverside (SC)	2025	HHDT	Aggregate	Aggregate	Diesel	15281.49903	1950611.476	315.5182536	315518.2536		1950611.476			
Riverside (SC)	2025	HHDT	Aggregate	Aggregate	Electricity	103.9487733	11894.93596	0	0		11894.93596			
Riverside (SC)	2025	HHDT	Aggregate	Aggregate	Natural Gas	781.6601067	52093.15724	8.464804133	8464.804133		52093.15724			
Riverside (SC)	2025	LDA	Aggregate	Aggregate	Gasoline	469318.5342	20373765.83	673.3165394	673316.5394	685799.5767	20373765.83	22281991.59	32.49	LDA
Riverside (SC)	2025	LDA	Aggregate	Aggregate	Diesel	1383.809245	49996.02059	1.157204906	1157.204906		49996.02059			
Riverside (SC)	2025	LDA	Aggregate	Aggregate	Electricity	23756.17576	1153396.904	0	0		1153396.904			
Riverside (SC)	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	14087.23202	704832.8394	11.32583244	11325.83244		704832.8394			
Riverside (SC)	2025	LDT1	Aggregate	Aggregate	Gasoline	39844.42885	1499609.575	59.92078241	59920.78241	59994.79347	1499609.575	1508277.871	25.14	LDT1
Riverside (SC)	2025	LDT1	Aggregate	Aggregate	Diesel	16.26032827	298.1728862	0.012131898	12.13189805		298.1728862			
Riverside (SC)	2025	LDT1	Aggregate	Aggregate	Electricity	84.57619148	4089.475353	0	0		4089.475353			
Riverside (SC)	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	76.19034646	4280.647946	0.061879155	61.87915548		4280.647946			
Riverside (SC)	2025	LDT2	Aggregate	Aggregate	Gasoline	201900.7772	8973973.952	360.0165635	360016.5635	362521.4419	8973973.952	9168424.554	25.29	LDT2
Riverside (SC)	2025	LDT2	Aggregate	Aggregate	Diesel	648.0824816	30519.42791	0.906087045	906.0870448		30519.42791			
Riverside (SC)	2025	LDT2	Aggregate	Aggregate	Electricity	1658.408696	58637.73041	0	0		58637.73041			
Riverside (SC)	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	1963.286623	105293.4446	1.598791388	1598.791388		105293.4446			
Riverside (SC)	2025	LHDT1	Aggregate	Aggregate	Gasoline	17598.36242	652458.21	46.82732866	46827.32866	73403.79877	652458.21	1212550.7	16.52	LHDT1
Riverside (SC)	2025	LHDT1	Aggregate	Aggregate	Diesel	15075.59282	549831.8274	26.5764701	26576.4701		549831.8274			
Riverside (SC)	2025	LHDT1	Aggregate	Aggregate	Electricity	149.6982853	10260.66293	0	0		10260.66293			
Riverside (SC)	2025	LHDT2	Aggregate	Aggregate	Gasoline	2462.303572	88408.90183	7.133200743	7133.200743	21661.35468	88408.90183	341190.0394	15.75	LHDT2
Riverside (SC)	2025	LHDT2	Aggregate	Aggregate	Diesel	6820.445818	250292.8301	14.52815394	14528.15394		250292.8301			
Riverside (SC)	2025	LHDT2	Aggregate	Aggregate	Electricity	38.18158868	2488.307475	0	0		2488.307475			
Riverside (SC)	2025	MCY	Aggregate	Aggregate	Gasoline	24005.46384	138549.7935	3.307549619	3307.549619	3307.549619	138549.7935	138549.7935	41.89	MCY
Riverside (SC)	2025	MDV	Aggregate	Aggregate	Gasoline	157992.5704	6448292.677	323.4938203	323493.8203	328676.5122	6448292.677	6678432.543	20.32	MDV
Riverside (SC)	2025	MDV	Aggregate	Aggregate	Diesel	2427.253752	99526.12558	4.137752355	4137.752355		99526.12558			
Riverside (SC)	2025	MDV	Aggregate	Aggregate	Electricity	1830.142844	64565.5975	0	0		64565.5975			
Riverside (SC)	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	1324.504282	66048.14278	1.044939643	1044.939643		66048.14278			
Riverside (SC)	2025	MH	Aggregate	Aggregate	Gasoline	4508.467531	38795.29207	7.939175542	7939.175542	9582.26868	38795.29207	55815.16631	5.82	MH
Riverside (SC)	2025	MH	Aggregate	Aggregate	Diesel	2015.081247	17019.87424	1.643093138	1643.093138		17019.87424			
Riverside (SC)	2025	MHDT	Aggregate	Aggregate	Gasoline	1219.56756	49718.98291	9.418016992	9418.016992	73843.62953	49718.98291	635118.1523	8.60	MHDT
Riverside (SC)	2025	MHDT	Aggregate	Aggregate	Diesel	13275.74248	571359.1019	63.53271272	63532.71272		571359.1019			
Riverside (SC)	2025	MHDT	Aggregate	Aggregate	Electricity	118.7135177	6143.919124	0	0		6143.919124			
Riverside (SC)	2025	MHDT	Aggregate	Aggregate	Natural Gas	169.7860028	7896.148358	0.892899818	892.8998181		7896.148358			
Riverside (SC)	2025	OBUS	Aggregate	Aggregate	Gasoline	362.5102847	12151.28279	2.347950658	2347.950658	4510.758842	12151.28279	29688.04546	6.58	OBUS
Riverside (SC)	2025	OBUS	Aggregate	Aggregate	Diesel	224.9321911	15183.67961	1.940769719	1940.769719		15183.67961			
Riverside (SC)	2025	OBUS	Aggregate	Aggregate	Electricity	2.021694394	134.2617193	0	0		134.2617193			
Riverside (SC)	2025	OBUS	Aggregate	Aggregate	Natural Gas	36.9521167	2218.821339	0.222038465	222.0384652		2218.821339			
Riverside (SC)	2025	SBUS	Aggregate	Aggregate	Gasoline	426.2067312	16859.59503	1.92304347	1923.04347	5926.536182	16859.59503	38036.5897	6.42	SBUS
Riverside (SC)	2025	SBUS	Aggregate	Aggregate	Diesel	483.8964136	9931.139032	1.352394432	1352.394432		9931.139032			
Riverside (SC)	2025	SBUS	Aggregate	Aggregate	Electricity	5.22909553	143.1587763	0	0		143.1587763			
Riverside (SC)	2025	SBUS	Aggregate	Aggregate	Natural Gas	457.8096259	11102.69686	2.65109828	2651.09828		11102.69686			
Riverside (SC)	2025	UBUS	Aggregate	Aggregate	Gasoline	146.4959788	18545.85863	3.288543187	3288.543187	10964.44655	18545.85863	49731.99827	4.54	UBUS
Riverside (SC)	2025	UBUS	Aggregate	Aggregate	Diesel	0.3117338	30.10971099	0.002675115	2.675115035		30.10971099			
Riverside (SC)	2025	UBUS	Aggregate	Aggregate	Electricity	0.20926462	33.75780976	0	0		33.75780976			
Riverside (SC)	2025	UBUS	Aggregate	Aggregate	Natural Gas	252.5418031	31122.27213	7.673228246	7673.228246		31122.27213			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2026
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	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Riverside (SC)	2026	HHDT	Aggregate	Aggregate	Gasoline	5.301713201	269.8155783	0.068469804	68.46980429	326183.3321	269.8155783	2063431.007	6.33	HHDT
Riverside (SC)	2026	HHDT	Aggregate	Aggregate	Diesel	15687.78827	1988453.103	317.4311809	317431.1809		1988453.103			
Riverside (SC)	2026	HHDT	Aggregate	Aggregate	Electricity	181.0556624	20854.79688	0	0		20854.79688			
Riverside (SC)	2026	HHDT	Aggregate	Aggregate	Natural Gas	822.9858358	53853.29132	8.683681391	8683.681391		53853.29132			
Riverside (SC)	2026	LDA	Aggregate	Aggregate	Gasoline	470220.2179	20338993.18	657.9019755	657901.9755	670683.7214	20338993.18	22423581.77	33.43	LDA
Riverside (SC)	2026	LDA	Aggregate	Aggregate	Diesel	1278.903087	45656.81459	1.04446634	1044.46634		45656.81459			
Riverside (SC)	2026	LDA	Aggregate	Aggregate	Electricity	27110.24505	1294343.513	0	0		1294343.513			
Riverside (SC)	2026	LDA	Aggregate	Aggregate	Plug-in Hybrid	15111.22646	744588.2646	11.73727955	11737.27955		744588.2646			
Riverside (SC)	2026	LDT1	Aggregate	Aggregate	Gasoline	39097.73904	1475770.596	57.77065353	57770.65353	57860.51954	1475770.596	1487146.031	25.70	LDT1
Riverside (SC)	2026	LDT1	Aggregate	Aggregate	Diesel	13.62192751	246.3725383	0.009960174	9.960173709		246.3725383			
Riverside (SC)	2026	LDT1	Aggregate	Aggregate	Electricity	113.2552136	5510.233656	0	0		5510.233656			
Riverside (SC)	2026	LDT1	Aggregate	Aggregate	Plug-in Hybrid	101.686721	5618.828531	0.079905828	79.90582849		5618.828531			
Riverside (SC)	2026	LDT2	Aggregate	Aggregate	Gasoline	207104.2919	9189016.153	359.2463978	359246.3978	361967.9264	9189016.153	9414279.735	26.01	LDT2
Riverside (SC)	2026	LDT2	Aggregate	Aggregate	Diesel	682.5626595	31821.71127	0.923868936	923.8689364		31821.71127			
Riverside (SC)	2026	LDT2	Aggregate	Aggregate	Electricity	2094.273367	72949.08151	0	0		72949.08151			
Riverside (SC)	2026	LDT2	Aggregate	Aggregate	Plug-in Hybrid	2291.195555	120492.7893	1.797659677	1797.659677		120492.7893			
Riverside (SC)	2026	LHDT1	Aggregate	Aggregate	Gasoline	17398.34216	648258.6134	45.43230342	45432.30342	71378.10447	648258.6134	1205852.586	16.89	LHDT1
Riverside (SC)	2026	LHDT1	Aggregate	Aggregate	Diesel	14868.32038	538771.2685	25.94580105	25945.80105		538771.2685			
Riverside (SC)	2026	LHDT1	Aggregate	Aggregate	Electricity	286.9935654	18822.70429	0	0		18822.70429			
Riverside (SC)	2026	LHDT2	Aggregate	Aggregate	Gasoline	2430.034218	87077.56554	6.894650038	6894.650038	21104.05262	87077.56554	337819.1023	16.01	LHDT2
Riverside (SC)	2026	LHDT2	Aggregate	Aggregate	Diesel	6777.719033	246178.6334	14.20940258	14209.40258		246178.6334			
Riverside (SC)	2026	LHDT2	Aggregate	Aggregate	Electricity	73.06243174	4562.903373	0	0		4562.903373			
Riverside (SC)	2026	MCY	Aggregate	Aggregate	Gasoline	23937.33086	137142.5787	3.259850983	3259.850983	3259.850983	137142.5787	137142.5787	42.07	MCY
Riverside (SC)	2026	MDV	Aggregate	Aggregate	Gasoline	157654.7501	6425602.492	314.7102388	314710.2388	319841.9429	6425602.492	6678197.896	20.88	MDV
Riverside (SC)	2026	MDV	Aggregate	Aggregate	Diesel	2395.180805	96875.32958	3.958815392	3958.815392		96875.32958			
Riverside (SC)	2026	MDV	Aggregate	Aggregate	Electricity	2298.450518	79855.22944	0	0		79855.22944			
Riverside (SC)	2026	MDV	Aggregate	Aggregate	Plug-in Hybrid	1539.714974	75864.84529	1.172888712	1172.888712		75864.84529			
Riverside (SC)	2026	MH	Aggregate	Aggregate	Gasoline	4250.734566	36312.00617	7.425870006	7425.870006	9021.53348	36312.00617	52833.22222	5.86	MH
Riverside (SC)	2026	MH	Aggregate	Aggregate	Diesel	1981.725027	16521.21606	1.595663475	1595.663475		16521.21606			
Riverside (SC)	2026	MHDT	Aggregate	Aggregate	Gasoline	1204.155669	49534.83957	9.263997368	9263.997368	74067.74937	49534.83957	646239.7348	8.72	MHDT
Riverside (SC)	2026	MHDT	Aggregate	Aggregate	Diesel	13571.64646	577213.7586	63.87135704	63871.35704		577213.7586			
Riverside (SC)	2026	MHDT	Aggregate	Aggregate	Electricity	219.063018	11241.81607	0	0		11241.81607			
Riverside (SC)	2026	MHDT	Aggregate	Aggregate	Natural Gas	180.8134913	8249.320573	0.932394966	932.394966		8249.320573			
Riverside (SC)	2026	OBUS	Aggregate	Aggregate	Gasoline	350.9276772	11597.74291	2.216471452	2216.471452	4375.818964	11597.74291	29375.18585	6.71	OBUS
Riverside (SC)	2026	OBUS	Aggregate	Aggregate	Diesel	230.0918445	15233.6578	1.930307181	1930.307181		15233.6578			
Riverside (SC)	2026	OBUS	Aggregate	Aggregate	Electricity	3.398598414	222.0634986	0	0		222.0634986			
Riverside (SC)	2026	OBUS	Aggregate	Aggregate	Natural Gas	39.09901647	2321.721637	0.229040331	229.0403313		2321.721637			
Riverside (SC)	2026	SBUS	Aggregate	Aggregate	Gasoline	428.6165302	16957.83533	1.930418011	1930.418011	5931.110106	16957.83533	38160.16985	6.43	SBUS
Riverside (SC)	2026	SBUS	Aggregate	Aggregate	Diesel	474.8674611	9627.108018	1.308586985	1308.586985		9627.108018			
Riverside (SC)	2026	SBUS	Aggregate	Aggregate	Electricity	8.960082283	245.5300912	0	0		245.5300912			
Riverside (SC)	2026	SBUS	Aggregate	Aggregate	Natural Gas	472.4302591	11329.69641	2.69210511	2692.10511		11329.69641			
Riverside (SC)	2026	UBUS	Aggregate	Aggregate	Gasoline	146.7792196	18580.60009	3.25315693	3253.15693	10939.25606	18580.60009	49832.17645	4.56	UBUS
Riverside (SC)	2026	UBUS	Aggregate	Aggregate	Diesel	0.3117338	30.10971099	0.002675115	2.675114958		30.10971099			
Riverside (SC)	2026	UBUS	Aggregate	Aggregate	Electricity	0.298524289	49.15190367	0	0		49.15190367			
Riverside (SC)	2026	UBUS	Aggregate	Aggregate	Natural Gas	252.9741581	31172.31474	7.683424013	7683.424013		31172.31474			

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	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Gasoline	4.417589037	240.8696114	0.059741457	59.74145741	327553.1219	240.8696114	2112996.232	6.45	HHDT
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Diesel	16021.09962	2023648.424	318.6419902	318641.9902		2023648.424			
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Electricity	291.1277388	33695.26576	0	0		33695.26576			
Riverside (SC)	2027	HHDT	Aggregate	Aggregate	Natural Gas	859.7365707	55411.6726	8.851390205	8851.390205		55411.6726			
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Gasoline	471235.7168	20354484.89	646.3182298	646318.2298	659332.1669	20354484.89	22605957.54	34.29	LDA
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Diesel	1176.545459	41562.34596	0.941772786	941.772786		41562.34596			
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Electricity	30348.88532	1428770.722	0	0		1428770.722			
Riverside (SC)	2027	LDA	Aggregate	Aggregate	Plug-in Hybrid	16056.71591	781139.586	12.07216427	12072.16427		781139.586			
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Gasoline	38425.04641	1456606.871	56.00411545	56004.11545	56110.21758	1456606.871	1471112.371	26.22	LDT1
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Diesel	8.182997029	149.5948697	0.005861932	5.861931679		149.5948697			
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Electricity	147.7776311	7209.101259	0	0		7209.101259			
Riverside (SC)	2027	LDT1	Aggregate	Aggregate	Plug-in Hybrid	130.963565	7146.803489	0.100240199	100.2401989		7146.803489			
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Gasoline	212339.9735	9414153.484	360.272054	360272.054	363211.8816	9414153.484	9671400.198	26.63	LDT2
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Diesel	713.6192887	33073.61643	0.942826085	942.8260853		33073.61643			
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Electricity	2564.171691	88062.50525	0	0		88062.50525			
Riverside (SC)	2027	LDT2	Aggregate	Aggregate	Plug-in Hybrid	2628.969244	136110.5925	1.997001514	1997.001514		136110.5925			
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Gasoline	17212.0897	642894.8546	44.12357644	44123.57644	69419.14823	642894.8546	1201022.641	17.30	LHDT1
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Diesel	14633.12771	526713.4197	25.29557179	25295.57179		526713.4197			
Riverside (SC)	2027	LHDT1	Aggregate	Aggregate	Electricity	492.5286755	31414.36647	0	0		31414.36647			
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Gasoline	2393.256129	85530.68603	6.657949773	6657.949773	20539.98243	85530.68603	334771.945	16.30	LHDT2
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Diesel	6722.419556	241624.1987	13.88203265	13882.03265		241624.1987			
Riverside (SC)	2027	LHDT2	Aggregate	Aggregate	Electricity	125.2869519	7617.060264	0	0		7617.060264			
Riverside (SC)	2027	MCY	Aggregate	Aggregate	Gasoline	23872.84416	135933.3741	3.223711537	3223.711537	3223.711537	135933.3741	135933.3741	42.17	MCY
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Gasoline	157494.1298	6421344.406	307.9749594	307974.9594	313073.5241	6421344.406	6696600.902	21.39	MDV
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Diesel	2354.829343	94400.81381	3.800171132	3800.171132		94400.81381			
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Electricity	2779.433972	95116.63714	0	0		95116.63714			
Riverside (SC)	2027	MDV	Aggregate	Aggregate	Plug-in Hybrid	1757.393907	85739.04462	1.298393545	1298.393545		85739.04462			
Riverside (SC)	2027	MH	Aggregate	Aggregate	Gasoline	4014.402617	34124.53465	6.984241305	6984.241305	8533.923074	34124.53465	50163.52077	5.88	MH
Riverside (SC)	2027	MH	Aggregate	Aggregate	Diesel	1945.315043	16038.98612	1.549681769	1549.681769		16038.98612			
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Gasoline	1187.040113	49189.22554	9.102215369	9102.215369	74108.25298	49189.22554	657629.6251	8.87	MHDT
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Diesel	13823.92114	580928.627	64.04015234	64040.15234		580928.627			
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Electricity	371.8319942	18951.18768	0	0		18951.18768			
Riverside (SC)	2027	MHDT	Aggregate	Aggregate	Natural Gas	191.1860259	8560.584881	0.965885278	965.8852775		8560.584881			
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Gasoline	338.9861834	11067.86494	2.084603884	2084.603884	4234.382771	11067.86494	29125.06177	6.88	OBUS
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Diesel	234.5197906	15307.11304	1.914675461	1914.675461		15307.11304			
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Electricity	5.428935287	350.8664874	0	0		350.8664874			
Riverside (SC)	2027	OBUS	Aggregate	Aggregate	Natural Gas	40.94802157	2399.217305	0.235103425	235.1034253		2399.217305			
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Gasoline	430.4295714	17027.29145	1.934694955	1934.694955	5925.808471	17027.29145	38269.32872	6.46	SBUS
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Diesel	464.1146803	9303.444431	1.262004708	1262.004708		9303.444431			
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Electricity	14.63497518	401.3400131	0	0		401.3400131			
Riverside (SC)	2027	SBUS	Aggregate	Aggregate	Natural Gas	486.6196132	11537.25282	2.729108808	2729.108808		11537.25282			
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Gasoline	147.0093126	18606.89257	3.253359958	3253.359958	10959.60845	18606.89257	49932.35462	4.56	UBUS
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Diesel	0.3117338	30.10971099	0.002674823	2.674822746		30.10971099			
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Electricity	0.589513765	89.99316283	0	0		89.99316283			
Riverside (SC)	2027	UBUS	Aggregate	Aggregate	Natural Gas	253.257931	31205.35917	7.703573673	7703.573673		31205.35917			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2028
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	endar Y	hicle Categc	Model Year	Speed	Fuel	Population	Total VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Riverside (SC)	2028	HHDT	Aggregate	Aggregate	Gasoline	3.988581574	220.2375349	0.053426587	53.42658706	327968.5957	220.2375349	2164028.305	6.60	HHDT
Riverside (SC)	2028	HHDT	Aggregate	Aggregate	Diesel	16286.45202	2055799.739	318.9296757	318929.6757		2055799.739			
Riverside (SC)	2028	HHDT	Aggregate	Aggregate	Electricity	443.1127679	51388.26161	0	0		51388.26161			
Riverside (SC)	2028	HHDT	Aggregate	Aggregate	Natural Gas	889.8391393	56620.06678	8.985493411	8985.493411		56620.06678			
Riverside (SC)	2028	LDA	Aggregate	Aggregate	Gasoline	472360.9133	20372156.29	634.9783189	634978.3189	648196.1926	20372156.29	22779784.76	35.14	LDA
Riverside (SC)	2028	LDA	Aggregate	Aggregate	Diesel	1078.826078	37726.31375	0.844929589	844.9295888		37726.31375			
Riverside (SC)	2028	LDA	Aggregate	Aggregate	Electricity	33534.15965	1556851.62	0	0		1556851.62			
Riverside (SC)	2028	LDA	Aggregate	Aggregate	Plug-in Hybric	16928.42831	813050.5364	12.37294411	12372.94411		813050.5364			
Riverside (SC)	2028	LDT1	Aggregate	Aggregate	Gasoline	37855.87026	1440444.902	54.36871858	54368.71858	54496.07482	1440444.902	1458584.787	26.76	LDT1
Riverside (SC)	2028	LDT1	Aggregate	Aggregate	Diesel	6.076587483	111.1215276	0.004270552	4.270551517		111.1215276			
Riverside (SC)	2028	LDT1	Aggregate	Aggregate	Electricity	188.4728547	9182.136055	0	0		9182.136055			
Riverside (SC)	2028	LDT1	Aggregate	Aggregate	Plug-in Hybric	164.1063254	8846.627488	0.123085684	123.0856837		8846.627488			
Riverside (SC)	2028	LDT2	Aggregate	Aggregate	Gasoline	217588.1473	9627227.084	361.0416912	361041.6912	364204.6139	9627227.084	9917690.621	27.23	LDT2
Riverside (SC)	2028	LDT2	Aggregate	Aggregate	Diesel	743.8336965	34234.83166	0.959155323	959.1553231		34234.83166			
Riverside (SC)	2028	LDT2	Aggregate	Aggregate	Electricity	3077.663905	104270.8577	0	0		104270.8577			
Riverside (SC)	2028	LDT2	Aggregate	Aggregate	Plug-in Hybric	2979.785378	151957.8474	2.203767446	2203.767446		151957.8474			
Riverside (SC)	2028	LHDT1	Aggregate	Aggregate	Gasoline	17013.08285	635719.8804	42.78386012	42783.86012	67372.46896	635719.8804	1197558.473	17.78	LHDT1
Riverside (SC)	2028	LHDT1	Aggregate	Aggregate	Diesel	14375.59914	513629.3418	24.58860884	24588.60884		513629.3418			
Riverside (SC)	2028	LHDT1	Aggregate	Aggregate	Electricity	775.5486666	48209.25082	0	0		48209.25082			
Riverside (SC)	2028	LHDT2	Aggregate	Aggregate	Gasoline	2353.812331	83781.03596	6.417908056	6417.908056	19945.38855	83781.03596	332098.5234	16.65	LHDT2
Riverside (SC)	2028	LHDT2	Aggregate	Aggregate	Diesel	6657.214497	236631.625	13.52748049	13527.48049		236631.625			
Riverside (SC)	2028	LHDT2	Aggregate	Aggregate	Electricity	197.0476771	11685.86241	0	0		11685.86241			
Riverside (SC)	2028	MCY	Aggregate	Aggregate	Gasoline	23825.11116	134879.6959	3.188684508	3188.684508	3188.684508	134879.6959	134879.6959	42.30	MCY
Riverside (SC)	2028	MDV	Aggregate	Aggregate	Gasoline	157471.3828	6419753.084	301.5064704	301506.4704	306577.6338	6419753.084	6718020.856	21.91	MDV
Riverside (SC)	2028	MDV	Aggregate	Aggregate	Diesel	2313.319617	92055.03155	3.64472254	3644.72254		92055.03155			
Riverside (SC)	2028	MDV	Aggregate	Aggregate	Electricity	3280.614214	110611.1646	0	0		110611.1646			
Riverside (SC)	2028	MDV	Aggregate	Aggregate	Plug-in Hybric	1979.988786	95601.57573	1.426440918	1426.440918		95601.57573			
Riverside (SC)	2028	MH	Aggregate	Aggregate	Gasoline	3792.760048	32136.12659	6.576552774	6576.552774	8080.877903	32136.12659	47700.74841	5.90	MH
Riverside (SC)	2028	MH	Aggregate	Aggregate	Diesel	1905.838717	15564.62182	1.50432513	1504.32513		15564.62182			
Riverside (SC)	2028	MHDT	Aggregate	Aggregate	Gasoline	1167.514336	48564.31923	8.892465984	8892.465984	73657.11404	48564.31923	669292.9757	9.09	MHDT
Riverside (SC)	2028	MHDT	Aggregate	Aggregate	Diesel	14002.28475	581224.0545	63.77307861	63773.07861		581224.0545			
Riverside (SC)	2028	MHDT	Aggregate	Aggregate	Electricity	604.2282857	30714.98313	0	0		30714.98313			
Riverside (SC)	2028	MHDT	Aggregate	Aggregate	Natural Gas	199.9675247	8789.618879	0.991569449	991.5694486		8789.618879			
Riverside (SC)	2028	OBUS	Aggregate	Aggregate	Gasoline	327.7078639	10548.10232	1.966652018	1966.652018	4110.66287	10548.10232	28947.37014	7.04	OBUS
Riverside (SC)	2028	OBUS	Aggregate	Aggregate	Diesel	238.556013	15389.24479	1.90528198	1905.28198		15389.24479			
Riverside (SC)	2028	OBUS	Aggregate	Aggregate	Electricity	8.51445928	545.8268781	0	0		545.8268781			
Riverside (SC)	2028	OBUS	Aggregate	Aggregate	Natural Gas	42.59688326	2464.196156	0.238728872	238.7288719		2464.196156			
Riverside (SC)	2028	SBUS	Aggregate	Aggregate	Gasoline	431.0753654	17042.56634	1.933025708	1933.025708	5903.130779	17042.56634	38344.63518	6.50	SBUS
Riverside (SC)	2028	SBUS	Aggregate	Aggregate	Diesel	451.0585439	8951.328084	1.211406554	1211.406554		8951.328084			
Riverside (SC)	2028	SBUS	Aggregate	Aggregate	Electricity	23.22081025	641.5412948	0	0		641.5412948			
Riverside (SC)	2028	SBUS	Aggregate	Aggregate	Natural Gas	499.8225406	11709.19947	2.758698517	2758.698517		11709.19947			
Riverside (SC)	2028	UBUS	Aggregate	Aggregate	Gasoline	132.0967345	16779.39189	2.792318822	2792.318822	8165.960945	16779.39189	50032.53279	6.13	UBUS
Riverside (SC)	2028	UBUS	Aggregate	Aggregate	Electricity	56.86515729	8885.94529	0	0		8885.94529			
Riverside (SC)	2028	UBUS	Aggregate	Aggregate	Natural Gas	213.0114547	24367.19561	5.373642123	5373.642123		24367.19561			

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