MEMORANDUM

DATE: April 6, 2023
TO: Connie Anderson, T&B Planning, Inc.
FROM: Haseeb Qureshi
JOB NO: 14482-06 AQ, GHG, HRA, EA Memo

8TH STREET INDUSTRIAL AIR QUALITY, GREENHOUSE GAS, HEALTH RISK, AND ENERGY ASSESSMENT

Connie Anderson,

Urban Crossroads, Inc. is pleased to provide the following supplemental Air Quality, Greenhouse Gas, Health Risk, and Energy Assessment for the 8th Street Industrial (**Project**), which is located in the City of Palmdale.

PROJECT OVERVIEW

Urban Crossroads, Inc. prepared technical Air Quality, Greenhouse Gas, Health Risk, and Energy reports for the subject project in January 2023 (**January 2023 Technical Reports**). At that time, the Project was evaluated as a cross-dock building with up to 348,800 square feet (sf) of high-cube fulfillment center (non-sort) uses. Since preparation of the January 2023 Technical Reports, the Project's site plan has been modified to include the following:

- A reduction in the number of dock doors and elimination of the cross-dock layout. The site has gone from 100 dock doors to only 54 dock doors on the north side of the building.
- Removal of the center driveway
- Decrease of 4,390 sf for a new Project total of up to 380,410 sf of building space proposed.
- Change in parking: 200 parking stalls (from 152), 30 bicycle racks (from 5), and 68 truck trailer stalls.

SUMMARY OF FINDINGS

Urban Crossroads, Inc. has reviewed the updated site plan and determined that the changes to the site plan would not substantively affect the findings or conclusions presented in the January 2023 Technical Reports. As such, no further analysis is required and the previously prepared technical reports are appropriate to rely on for determination of potential impacts from air quality, greenhouse gas, health risk, and energy.

8th Street Industrial

ENERGY ANALYSIS

CITY OF PALMDALE

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JANUARY 13, 2023

14482-04 EA Report

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LIST OF ABBREVIATED TERMS

(1)	Reference
AQIA	Air Quality Impact Analysis
BACM	Best Available Control Measures
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
DMV	Department of Motor Vehicles
EIA	Energy Information Administration
EIR	Environmental Impact Report
EMFAC	Emissions Factor
FERC	Federal Energy Regulatory Commission
GPA	General Plan Amendment
GS-1	General Service Rate Schedule
GWh	Gigawatt Hour
HHDT	Heavy-Heavy Duty
Hp-hr-gal	Horsepower-Hour Per Gallon
IEPR	Integrative Energy Policy Report
ISO	Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
kBTU	Kilo-British Thermal Units
kWh	Kilowatt Hour
LDA	Light Duty Auto
LDT1/LDT2	Light-Duty Trucks
MDAB	Mojave Desert Air Basin
MDV	Medium Duty Trucks
MHDT	Medium-Heavy Duty Trucks
mpg	Miles Per Gallon
MPO	Metropolitan Planning Organization
PG&E	Pacific Gas and Electric
Project	8th Street Industrial
SCE	Southern California Edison
SDAB	San Diego Air Basin
SDG&E	San Diego Gas and Electric

sf	Square Feet
SoCalGas	Southern California Gas
SW Gas	Southwest Gas Company
TEA-21	Transportation Equity Act for the 21st Century
VMT	Vehicle Miles Traveled

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EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *8th Street Industrial 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) 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: 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: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	5.0	*Less Than Significant*	*n/a*

ES.2 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 *8th Street Industrial Air Quality Impact Analysis* (*AQIA*) report (2). Although these measures are designed to reduce Project air quality emissions, they would also assist in the reduction of fuel and energy usage. As a conservative measure, no credit has been assumed from the following measures.

MM AQ-1

The Project shall implement the following measures in order to reduce operational mobile source air pollutant emissions to the extent feasible:

- Only haul trucks meeting model year 2010 engine emission standards shall be used for the on-road transport of materials to and from the Project site.
- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (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 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 CARB to report violations. Prior to the issuance of an occupancy permit, the City of Lancaster shall conduct a site inspection to ensure that the signs are in place.

- Prior to tenant occupancy, the Project Applicant or successor in interest shall provide documentation to the City demonstrating that occupants/tenants of the Project site have been provided documentation on funding opportunities, such as the Carl Moyer Program, that provide incentives for using cleaner-than-required engines and equipment.
- The minimum number of automobile electric vehicle (EV) charging stations required by the California Code of Regulations Title 24 shall be provided. In addition, the buildings shall include electrical infrastructure sufficiently sized to accommodate the potential installation of additional auto and truck EV charging stations in the future.
- Conduit shall be installed to tractor trailer parking areas in logical locations determined by the Project Applicant during construction document plan check, for the purpose of accommodating the future installation of EV truck charging stations at such time this technology becomes commercially available.

MM AQ-2

The Project shall implement the following measure in order to reduce operational energy source air pollutant emissions to the extent feasible:

- The Project shall include rooftop solar panels to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.
- Install Energy Star-rated heating, cooling, lighting, and appliances.
- Provide information on energy efficiency, energy-efficient lighting and lighting control systems, energy management, and existing energy incentive programs to future tenants of the Project.
- Structures shall be equipped with outdoor electric outlets in the front and rear of the structures to facilitate use of electrical lawn and garden equipment.

MM AQ-3

The Project shall include the following language within tenant lease agreements in order to reduce operational air pollutant emissions to the extent feasible:

- Require tenants to use the cleanest technologies available and to provide the necessary infrastructure to support zero-emission vehicles, equipment, and appliances that would be operating on site. This requirement shall apply to equipment such as forklifts, handheld landscaping equipment, yard trucks, office appliances, etc.
- Require future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans, when economically feasible.
- Tenants shall be in, and monitor compliance with, all current air quality regulations for on-road trucks including the CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation, Periodic Smoke Inspection Program, and the Statewide Truck and Bus Regulation.
- Cold storage operations shall be prohibited unless additional environmental review, including a Health Risk Assessment, is conducted and certified pursuant to the CEQA.

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1 INTRODUCTION

This report presents the results of the energy analysis prepared by Urban Crossroads, Inc., for the proposed 8th Street Industrial (Project). The purpose of this report is to ensure that energy implication is considered by the City of Palmdale, as the lead agency, and to quantify anticipated energy usage associated with construction 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 proposed project is located along the west side of 8th Street East, south of East Rancho Vista Boulevard, north of Technology Drive, and immediately east of the existing Union Pacific Railroad (UPRR) tracks, and east of Sierra Highway in the City of Palmdale, as shown on Exhibit 1-A. The Project site is vacant and is surrounded by vacant land uses. Per the City of Palmdale General Plan designates the Industrial uses. The Industrial designation permits a variety of industrial uses, including manufacturing and assembly of products and goods, warehousing, distribution, and similar uses (3).

1.2 PROJECT DESCRIPTION

The proposed Project consists of 384,800 square feet (sf) of high-cube fulfillment (non-sort) uses. The Project is anticipated to be developed within a single phase with an anticipated opening year of 2024.

The on-site Project-related emission sources are expected to include loading dock activity and entry gate & truck movements. This study is intended to describe energy impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.

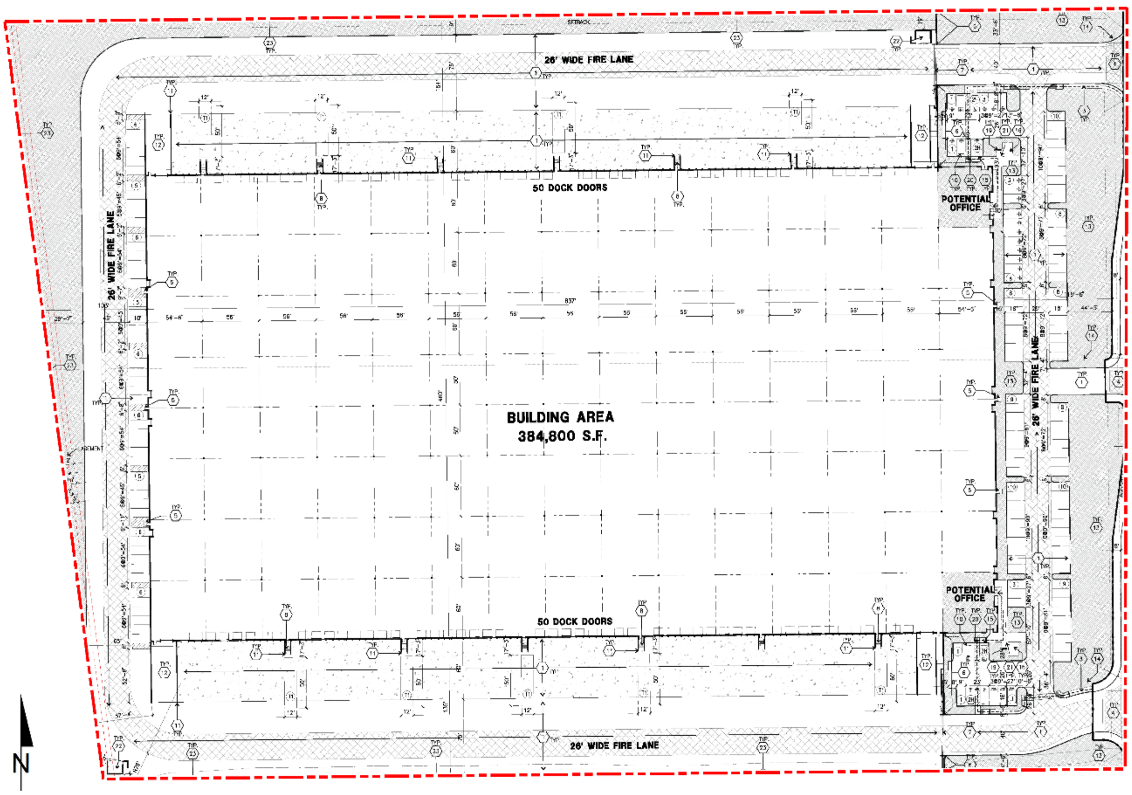
EXHIBIT 1-A: LOCATION MAP

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS

LEGEND:

Site Boundary

EXHIBIT 1-B: SITE PLAN



LEGEND:

Site Boundary

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2 EXISTING CONDITIONS

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

2.1 OVERVIEW

The most recent data for California's estimated total energy consumption and natural gas consumption is from 2020, released by the United States (U.S.) Energy Information Administration's (EIA) California State Profile and Energy Estimates in 2021 and included (4):

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

The California Energy Commission's (CEC) Transportation Energy Demand Forecast 2018-2030 was released in order to support the 2017 Integrated Energy Policy Report. The Transportation Energy Demand Forecast 2018-2030 lays out graphs and data supporting CEC's projections of California's future transportation energy demand. The projected inputs consider expected variable changes in fuel prices, income, population, and other variables. Predictions regarding fuel demand included:

- Gasoline demand in the transportation sector is expected to decline from approximately 15.8 billion gallons in 2017 to between 12.3 billion and 12.7 billion gallons in 2030 (5)
- Diesel demand in the transportation sector is expected to rise, increasing from approximately 3.7 billion diesel gallons in 2015 to approximately 4.7 billion in 2030 (5)
- Data from the Department of Energy indicates that approximately 3.9 billion gallons of diesel fuel were consumed in 2019 (6)

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

- Approximately 34.0% transportation sector
- Approximately 24.6% industrial sector
- Approximately 21.8% residential sector
- Approximately 19.6% commercial sector (7)

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

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

Fuel Type	California In-State Generation (GWh)	% of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	% of Imports	Total California Energy Mix	Total California Power Mix
Coal	303	0.2%	181	7,788	7,969	9.5%	8,272	3.0%
Natural Gas	97,431	50.2%	45	7,880	7,925	9.5%	105,356	37.9%
Oil	37	0.0%	-	-	-	0.0%	37	0.0%
Other (Waste Heat/Petroleum Coke)	382	0.2%	68	15	83	0.1%	465	0.2%
Nuclear	16,477	8.5%	524	8,756	9,281	11.1%	25,758	9.3%
Large Hydro	12,036	6.2%	12,042	1,578	13,620	16.3%	25,656	9.2%
Unspecified[1]	-	0.0%	8,156	10,731	18,887	22.6%	18,887	6.8%
Total Thermal and Non-Renewables	**126,666**	**65.2%**	**21,017**	**36,748**	**57,764**	**69.1%**	**184,431**	**66.4%**
Biomass	5,381	2.8%	864	26	890	1.1%	6,271	2.3%
Geothermal	11,116	5.7%	192	1,906	2,098	2.5%	13,214	4.8%
Small Hydro	2,531	1.3%	304	1	304	0.4%	2,835	1.0%
Solar	33,260	17.1%	220	5,979	6,199	7.4%	39,458	14.2%
Wind	15,173	7.8%	9,976	6,405	16,381	19.6%	31,555	11.4%
Total Renewables	**67,461**	**34.8%**	**11,555**	**14,317**	**25,872**	**30.9%**	**93,333**	**33.6%**
SYSTEM TOTALS	***194,127***	***100.0%***	***32,572***	***51,064***	***83,636***	***100.0%***	***277,764***	***100.0%***

Source: CECs 2021 Total System Electric Generation

1 Unspecified power refers to electricity that is not traceable to a specific generating facility, such as electricity traded through open market transactions.

An summary of, and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below (9):

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

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

2.2 ELECTRICITY

The usage associated with electricity use was calculated using CalEEMod Version 2022.1. The Southern California region's electricity reliability has been of concern for the past several years due to the planned retirement of aging facilities that depend upon once-through cooling technologies, as well as the June 2013 retirement of the San Onofre Nuclear Generating Station (San Onofre). While the once-through cooling phase-out has been ongoing since the May 2010 adoption of the State Water Resources Control Board's once-through cooling policy, the retirement of San Onofre complicated the situation. California Independent Service Operator (ISO) studies revealed the extent to which the Mojave Desert Air Basin (MDAB) 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 (10). Similarly, the subsequent 2021 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 (11).

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 in the vicinity of the Project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons in 15 counties and in 180 incorporated cities, within a service area encompassing approximately 50,000 square miles. Based on SCE's 2018 Power Content Label Mix, SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers (12).

Table 2-2 summarizes SCE's specific proportional shares of electricity sources in 2020. As indicated in Table 2-2, the 2020 SCE Power Mix has renewable energy at 30.9% of the overall energy resources. Geothermal resources are at 5.5%, wind power is at 9.4%, large hydroelectric sources are at 3.3%, solar energy is at 15.1%, and coal is at 0% (13).

TABLE 2-2: SCE 2020 POWER CONTENT MIX

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

* "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 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 CPUC 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." (14)

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

Based on information provided by the Project applicant, no natural gas would be used as a result of the Project, and as such use of natural gas is not considered in the analysis.

2.4 TRANSPORTATION ENERGY RESOURCES

The Project would generate additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. The Department of Motor Vehicles (DMV) identified 36.2 million registered vehicles in California (15), and those vehicles consume an estimated 17.2 billion gallons of fuel each year[2]. Gasoline (and other vehicle fuels) are commercially provided commodities and would be available to the Project patrons and employees via commercial outlets.

[2] Fuel consumptions estimated utilizing information from EMFAC2021.

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 (15). 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 10% of the nation's total consumption. The State is the largest U.S. consumer of motor gasoline and jet fuel, and 85% of the petroleum consumed in California is used in the transportation sector (16).

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 2019, about 37% of the natural gas delivered to consumers went to the State's industrial sector, and about 28% was delivered to the electric power sector. Natural gas fueled more than two-fifths of the State's utility-scale electricity generation in 2019. The residential sector, where two-thirds of California households use natural gas for home heating, accounted for 22% of natural gas deliveries. The commercial sector received 12% of the deliveries to end users and the transportation sector consumed the remaining 1% (16).

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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 U.S. Department of Transportation, the U.S. Department of Energy, and the U.S. Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. On the state level, the CPUC and the CEC are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

3.1 FEDERAL REGULATIONS

3.1.1 INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991 (ISTEA)

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. The TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. The 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. The 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 (ITS), 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 IEPR.

The 2021 IEPR was adopted in February 2022, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2021 IEPR provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining reliability and controlling costs (17).

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 State Energy Plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies several strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

3.2.3 California Code Title 24, Part 6, Energy Efficiency Standards

California Code of Regulations (CCR) Title 24 Part 6: The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on 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 will be effective on January 1, 2023[3]. The Project would be required to comply with the applicable standards in place at the time plan check submittals were made in 2022 (18).

3.2.4 AB 1493 Pavley Regulations and Fuel Efficiency Standards

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

3.2.5 California's Renewable Portfolio Standard (RPS)

First established in 2002 under Senate Bill (SB) 1078, California's Renewable Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable resources to 33% of total retail sales by 2020 (19).

[3] The 2022 California Green Building Standard Code will be published July 1, 2022.

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

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

- Increase the amount of electricity procured from renewable energy sources from 33% to 50% by 2030, with interim targets of 40% by 2024, and 25% by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the CEC, and local publicly owned utilities.
- Reorganize the Independent System Operator (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

Per Appendix F of the *State CEQA Guidelines* (20), states that the means of achieving the goal of energy conservation includes the following:

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

In compliance with Appendix G of the *State CEQA Guidelines* (21), 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 2022.1 outputs for the AQIA (22) was utilized in this analysis, detailing Project related construction equipment, transportation energy demands, and facility energy demands.

4.2.1 CALEEMOD

In May 2022 the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including the Antelope Valley Air Quality Management District (AVAQMD), released the latest version of CalEEMod version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (23). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendices 4.1 through 4.2.

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 California Air Resources Board (CARB) to project changes in future emissions from on-road mobile sources (24). This energy study utilizes the different fuel types for each vehicle class from the annual EMFAC2021 emission inventory in order to derive the average vehicle fuel economy which is then used to determine the estimated annual fuel consumption associated with vehicle usage during Project construction and operational activities. For purposes of analysis, the 2023 and 2024 analysis years were utilized to determine the average vehicle fuel economy used throughout the construction duration of the Project.

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

Construction is expected to commence in July 2023 and will last through July 2024 (22). The construction schedule utilized in the analysis, shown in Table 4-1, represents a "worst-case" analysis scenario. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (25).

TABLE 4-1: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation	07/04/2023	07/17/2023	10
Grading	07/18/2023	08/28/2023	30
Building Construction	08/08/2023	09/30/2024	300
Paving	07/02/2024	07/29/2024	20
Architectural Coating	06/04/2024	07/29/2024	40

PROJECT CONSTRUCTION POWER COST

The *2022 National Construction Estimator* identifies a typical power cost per 1,000 sf of construction per month of $2.41, which was used to calculate the Project's total construction power cost (26). As shown 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 $22,701.19.

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
High-Cube Fulfillment (Non-Sort)	$2.41	384.800	12	$11,128.42
Parking	$2.41	31.752	12	$918.27
Landscape	$2.41	84.488	12	$2,443.39
Other Asphalt Surfaces	$2.41	283.925	12	$8,211.11
			CONSTRUCTION POWER COST	***$22,701.19***

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 4-2) by the utility provider cost per kilowatt hour (kWh) of electricity.

PROJECT CONSTRUCTION ELECTRICITY USAGE

The SCE's general service rate schedule was used to determine the Project's electrical usage. As of October 1, 2022, SCE's general service rate is $0.13 per kilowatt hours (kWh) of electricity for industrial services (27). As shown on Table 4-3, the total electricity usage from on-site Project construction related activities is estimated to be approximately 171,059 kWh.

TABLE 4-3: CONSTRUCTION ELECTRICITY USAGE

Land Use	Cost per kWh	Project Construction Electricity Usage (kWh)
High-Cube Fulfillment (Non-Sort)	$0.13	83,855
Parking	$0.13	6,919
Landscape	$0.13	18,412
Other Asphalt Surfaces	$0.13	61,873
	CONSTRUCTION ELECTRICITY USAGE	***171,059***

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. The associated construction equipment was generally based on CalEEMod defaults. A detailed summary of construction equipment assumptions by phase is provided at Table 4-4.

TABLE 4-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase Name	Equipment	Number	Hours Per Day
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8
Grading	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
	Crawler Tractors	2	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Welders	1	8
	Crawler Tractors	3	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Project construction activity timeline estimates, construction equipment schedules, equipment power ratings, load factors, and associated fuel consumption estimates are presented in Table 4-5. The aggregate fuel consumption rate for all equipment is estimated at 18.5 horsepower hour per gallon (hp-hr-gal.), obtained from CARB 2018 Emissions Factors Tables and cited fuel consumption rate factors presented in Table D-24 of the Moyer guidelines (28). For the purposes of this analysis, the calculations are based on all construction equipment being diesel-powered which is consistent with industry standards. Diesel fuel would be supplied by existing commercial fuel providers serving the Project area and region[4]. As presented in Table 4-5, Project construction activities would consume an estimated 52,302 gallons of diesel fuel.

[4] 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

Phase Name	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption
Site Preparation	10	Rubber Tired Dozers	367	3	8	0.40	3,523	1,904
		Crawler Tractors	87	4	8	0.43	1,197	647
Grading	30	Excavators	36	2	8	0.38	219	355
		Graders	148	1	8	0.41	485	787
		Rubber Tired Dozers	367	1	8	0.40	1,174	1,904
		Scrapers	423	2	8	0.48	3,249	5,268
		Crawler Tractors	87	2	8	0.43	599	971
Building Construction	300	Cranes	367	1	8	0.29	851	13,807
		Forklifts	82	3	8	0.20	394	6,383
		Generator Sets	14	1	8	0.74	83	1,344
		Welders	46	1	8	0.45	166	2,685
		Crawler Tractors	87	3	8	0.43	898	14,560
Paving	20	Pavers	81	2	8	0.42	544	588
		Paving Equipment	89	2	8	0.36	513	554
		Rollers	36	2	8	0.38	219	237
Architectural Coating	40	Air Compressors	37	1	8	0.48	142	307
CONSTRUCTION FUEL DEMAND (GALLONS DIESEL FUEL)								***52,302***

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.

4.3.4 CONSTRUCTION TRIPS AND VMT

Construction generates on-road vehicle emissions from vehicle usage for workers, vendors, and haul truck commuting to and from the site. The number of workers, vendor, and haul trips are presented below in Table 4-6. It should be noted that for vendor trips, specifically, CalEEMod only assigns vendor trips to the Building Construction phase. Vendor trips would likely occur during all phases of construction. As such, the CalEEMod defaults for vendor trips have been adjusted based on a ratio of the total vendor trips to the number of days of each subphase of activity.

TABLE 4-6: CONSTRUCTION TRIPS AND VMT

Phase Name	Worker Trips Per Day	Vendor Trips Per Day	Hauling Trips Per Day
Site Preparation	18	2	0
Grading	20	6	20
Building Construction	162	56	0
Paving	15	0	0
Architectural Coating	32	0	0

4.3.5 CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT for the Project, the construction worker trips (personal vehicles used by workers commuting to the Project from home) would generate an estimated 948,865 VMT during the 12 months of construction (22). Based on CalEEMod methodology, it is assumed that 50% of all construction worker trips are from light-duty-auto vehicles (LDA), 25% are from light-duty-trucks (LDT1[5]), and 25% are from light-duty-trucks (LDT2[6]). Data regarding Project related construction worker trips were based on CalEEMod defaults utilized within the Project’s 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 (24). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the California sub-area for the 2023 and 2024 calendar years. Data from EMFAC2021 is shown in Appendix 4.3.

As shown in Table 4-7, the estimated annual fuel consumption resulting from Project construction worker trips is 34,924 gallons during full construction of the Project. It should be

[5] 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.

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

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

TABLE 4-7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2023	LDA						
	Site Preparation	10	9	18.5	1,665	30.32	55
	Grading	30	10	18.5	5,550	30.32	183
	Building Construction	104	81	18.5	155,844	30.32	5,140
	LDT1						
	Site Preparation	10	5	18.5	925	24.35	38
	Grading	30	5	18.5	2,775	24.35	114
	Building Construction	104	41	18.5	78,884	24.35	3,240
	LDT2						
	Site Preparation	10	5	18.5	925	23.69	39
	Grading	30	5	18.5	2,775	23.69	117
	Building Construction	104	41	18.5	78,884	23.69	3,330
2024	LDA						
	Building Construction	196	81	18.5	293,706	31.04	9,463
	Paving	20	8	18.5	2,960	31.04	95
	Architectural Coating	40	16	18.5	11,840	31.04	381
	LDT1						
	Building Construction	196	41	18.5	148,666	24.70	6,020
	Paving	20	4	18.5	1,480	24.70	60
	Architectural Coating	40	8	18.5	5,920	24.70	240
	LDT2						
	Building Construction	196	41	18.5	148,666	24.35	6,104
	Paving	20	4	18.5	1,480	24.35	61
	Architectural Coating	40	8	18.5	5,920	24.35	243
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION							***34,924***

4.3.6 CONSTRUCTION VENDOR/HAULING FUEL ESTIMATES

With respect to estimated VMT, the construction vendor trips (vehicles that deliver materials to the site during construction) and hauling trips would generate an estimated 185,400 VMT along area roadways for the Project over the duration of construction activity (22). It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHD), 50% of all vendor trips are from heavy-heavy duty trucks (HHD), and 100% of all hauling trips are from HHDs. These assumptions are consistent with the CalEEMod defaults utilized within the within the AQIA (29).

Vehicle fuel efficiencies for MHDs and HHDs were estimated using information generated within EMFAC2021. EMFAC2021 was run for the MHD and HHD vehicle classes within the California sub-area for the 2023 and 2024 calendar years. Data from EMFAC2021 is shown in Appendix 4.3.

Based on Table 4-8, it is estimated that 25,954 gallons of fuel will be consumed related to construction vendor and hauling trips during full construction of the Project. It should be noted that Project construction vendor trips would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 4-8: CONSTRUCTION VENDOR/HAULING FUEL CONSUMPTION ESTIMATES

Year	Construction Activity	Duration (Days)	Vendor Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2023	MHD						
	Site Preparation	10	1	10.2	102	8.32	12
	Grading	30	3	10.2	918	8.32	110
	Building Construction	104	28	10.2	29,702	8.32	3,572
	HHD (Vendor)						
	Site Preparation	10	1	10.2	102	6.28	16
	Grading	30	3	10.2	918	6.28	146
	Building Construction	104	28	10.2	29,702	6.28	4,733
	HHD (Hauling)						
	Grading	30	20	20	12,000	6.28	1,912
2024	MHD						
	Building Construction	196	28	10.2	55,978	8.39	6,672
	HHD (Vendor)						
	Building Construction	196	28	10.2	55,978	6.37	8,781
TOTAL CONSTRUCTION VENDOR/HAULING FUEL CONSUMPTION							***25,954***

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 utilized in the construction of the Project would therefore not result in inefficient, wasteful, or unnecessary consumption of fuel.

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

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

A full analysis related to the energy needed to form construction materials is not included in this analysis because at this time, an analysis of the energy needed to create Project-related construction materials would be extremely speculative and thus has not been prepared.

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

4.4 OPERATIONAL ENERGY DEMANDS

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

4.4.1 TRANSPORTATION FUEL 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 was determined by evaluating 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 (24). EMFAC2021 was run for the Los Angeles County (Mojave Desert) area for the 2024 calendar year. Data from EMFAC2021 is shown in Appendix 4.3.

The estimated transportation energy demands are summarized on Table 4-9. As summarized on Table 4-9 the Project would result in 2,098,414 annual VMT and an estimated annual fuel consumption of 119,055 gallons of fuel.

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

Vehicle Type	**Average Vehicle Fuel Economy** (mpg)	**Annual VMT**	**Estimated Annual Fuel Consumption** (gallons)
LDA	31.04	1,029,846	33,180
LDT1	24.70	81,604	3,304
LDT2	24.35	317,728	13,046
MDV	15.93	231,183	14,514
MCY	15.93	43,272	2,717
LHD1	16.19	54,914	3,391
LHD2	15.93	15,278	959
MHD	8.39	78,956	9,410
HHD	6.37	245,633	38,533
TOTAL (ALL VEHICLES)		***2,098,414***	***119,055***

4.4.2 ON-SITE CARGO HANDLING EQUIPMENT FUEL DEMANDS

It is common for industrial buildings to require the operation of exterior cargo handling equipment in the building's truck court areas. For this particular Project, on-site modeled operational equipment includes up to one (1) 175 horsepower (hp), natural gas-powered cargo handling equipment – port tractors operating at 4 hours a day[7] for 365 days of the year.

[7] Based on Table II-3, Port and Rail Cargo Handling Equipment Demographics by Type, from CARB's Technology Assessment: Mobile Cargo

Project operational activity estimates and associated fuel consumption estimates are based on the annual EMFAC2021 offroad emissions for the 2024 operational year and were used to derive the total annual fuel consumption associated with on-site equipment. As presented in Table 4-10, Project on-site equipment would consume an estimated 4,642 gallons of natural gas.

TABLE 4-10: ON-SITE CARGO HANDLING EQUIPMENT FUEL CONSUMPTION ESTIMATES

Equipment	Quantity	Usage Hours	Days of Operation	EMFAC2021 Fuel Consumption (gal./yr)	EMFAC2021 Activity (hrs./yr)	Total Fuel Consumption
Cargo Handling Equipment	1	4	365	17,909	5,633	4,642
ON-SITE CARGO HANDLING EQUIPMENT FUEL DEMAND (GALLONS FUEL)						***4,642***

4.4.3 FACILITY ENERGY DEMANDS

Project building operations activities would result in the consumption of electricity, which would be supplied to the Project by SCE. Annual electricity demands of the Project are summarized in Table 4-11. As summarized on Table 4-11 the Project would result in 1,828,860 kWh/year of electricity.

Based on information provided by the Project Applicant, the Project would not use natural gas for the building envelope. As such, natural gas consumption has not been analyzed in this study.

TABLE 4-11: PROJECT ANNUAL OPERATIONAL ENERGY DEMAND SUMMARY

Land Use	Electricity Demand (kWh/year)
High-Cube Fulfillment (Non-Sort)	1,801,004
Parking	27,856
Landscape	0
Other Asphalt Surfaces	0
TOTAL PROJECT ENERGY DEMAND	***1,828,860***

4.4.4 OPERATIONAL ENERGY EFFICIENCY/CONSERVATION MEASURES

Energy efficiency/energy conservation attributes of the Project would be complemented by increasingly stringent state and federal regulatory actions addressing vehicle fuel economies and vehicle emissions standards; and enhanced building/utilities energy efficiencies mandated under California building codes (e.g., Title24, California Green Building Standards Code).

Handling Equipment document, a single piece of equipment could operate up to 2 hours per day (Total Average Annual Activity divided by Total Number Pieces of Equipment). As such, the analysis conservatively assumes that the tractor/loader/backhoe would operate up to 4 hours per day.

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. The 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 $22,701.19. Additionally, based on the assumed power cost, it is estimated that the total electricity usage during construction, after full Project buildout, is calculated to be approximately 171,059 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 52,302 gallons of diesel fuel. Construction equipment use of fuel would not be atypical for the type of construction proposed because there are no aspects of the Project’s proposed construction process that are unusual or energy-intensive, and Project construction equipment would conform to the applicable CARB emissions standards, acting to promote equipment fuel efficiencies.

CCR Title 13, Title 13, Motor Vehicles, Section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. BACMs inform construction equipment operators of this requirement.

Construction worker trips for full construction of the Project would result in the estimated fuel consumption of 34,924 gallons of fuel. Additionally, fuel consumption from construction vendor trips (MHDs and HHDs) will total approximately 25,954 gallons. Diesel fuel would be supplied by City and regional commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved using bulk purchases, transport and use of construction materials. The 2021 IEPR released by the CEC has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements (17). As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

4.5.2 OPERATIONAL ENERGY DEMANDS

TRANSPORTATION ENERGY DEMANDS

Annual vehicular trips and related VMT generated by the operation of the Project would result in a fuel demand of 119,055 gallons of fuel.

Fuel would be provided by current and future commercial vendors. Trip generation and VMT generated by the Project are consistent with other industrial 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 industrial uses.

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

Heavy duty trucks involved in goods movements are generally controlled on the technology side and through fleet turnover of older trucks and engines to newer and cleaner trucks and engines. The first battery-electric heavy-heavy duty trucks are being tested this year and SCAQMD is looking to integrate this new technology into large-scale truck operations. The following state strategies reduce GHG emissions from the medium and heavy-duty trucks:

- CARB's Mobile Source Strategy focuses on reducing GHGs through the transition to zero and low emission vehicles and from medium-duty and heavy-duty trucks.
- CARB's Sustainable Freight Action Plan establishes a goal to improve freight efficiency by 25% by 2030, deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
- CARB's Emissions Reduction Plan for Ports and Goods Movement (Goods Movement Plan) in California focuses on reducing heavy-duty truck-related emissions focus on establishment of emissions standards for trucks, fleet turnover, truck retrofits, and restriction on truck idling (CARB 2006). While the focus of Goods Movement Plan is to reduce criteria air pollutant and air toxic emissions, the strategies to reduce these pollutants would also generally have a beneficial effect in reducing GHG emissions.
- CARB's On-Road Truck and Bus Regulation (2010) requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent (30).
- CARB's Heavy-Duty (Tractor-Trailer) GHG Regulation requires SmartWay tractor trailers that include idle-reduction technologies, aerodynamic technologies, and low-rolling resistant tires that would reduce fuel consumption and associated GHG emissions.

The proposed Project would implement project design features that would facilitate the accessibility, parking, and loading of trucks on-site.

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 construct sidewalks along the 8th Street frontage, 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. As supported by the preceding discussions, Project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

ON-SITE CARGO HANDLING EQUIPMENT FUEL DEMANDS

As previously stated, it is common for industrial buildings to require the operation of exterior cargo handling equipment in the building's truck court areas. On-site cargo handling equipment used by the Project would result in approximately 4,642 gallons of natural gas. On-site equipment use of fuel would not be atypical for the type of construction proposed because there are no aspects of the Project's proposed operations that are unusual or energy-intensive, and Project on-site equipment would conform to the applicable CARB emissions standards, acting to promote equipment fuel efficiencies.

FACILITY ENERGY DEMANDS

Project facility operational energy demands are estimated to be: 1,828,860 kWh/year of electricity which would be supplied by SCE. Based on information provided by the Project Applicant, the Project would not use natural gas. As such, natural gas consumption has not been analyzed in this study. The Project proposes conventional industrial 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 industrial uses of similar scale and configuration.

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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. 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 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 VMT, takes advantage of existing infrastructure systems, and promotes land use compatibility 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 IEPR

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

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 2021 IEPR.

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 and takes advantage of existing infrastructure systems. The Project therefore supports urban design and planning processes identified under the State of California Energy Plan, is consistent with, and would not otherwise interfere with, nor obstruct implementation of the State of California Energy Plan.

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

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 will become effective on January 1, 2023. The Project would be required to comply with the applicable standards in place at the time plan check submittals are made.

CONSISTENCY WITH AB 1493

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

CONSISTENCY WITH RPS

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

CONSISTENCY WITH SB 350

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

CONSISTENCY WITH CITY OF PALMDALE GENERAL PLAN 2045

As stated in Section ES.2 of this study, energy-saving features and operational programs would be incorporated into facilities developed pursuant to the currently proposed Project. These design features would help with the City's goal of reducing energy usage and make Palmdale a more sustainable community.

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.

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7 CERTIFICATIONS

The contents of this energy report represent an accurate depiction of the environmental impacts associated with the proposed 8th Street Industrial. The information contained in this energy 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.

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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

Environmental Site Assessment – American Society for Testing and Materials • June, 2013
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 – CARB • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

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APPENDIX 4.1:

CALEEMOD CONSTRUCTION EMISSIONS MODEL OUTPUTS

8th Street Industrial (Construction) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	8th Street Industrial (Construction)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.50
Precipitation (days)	13.0
Location	34.598710013651576, -118.11846768338233
County	Los Angeles-Mojave Desert
City	Palmdale
Air District	Antelope Valley AQMD
Air Basin	Mojave Desert
TAZ	3655
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-No Rail	385	1000sqft	10.8	384,800	84,488	0.00	—	—
Parking Lot	171	Space	0.73	0.00	0.00	0.00	—	—

Other Asphalt Surfaces	284	1000sqft	6.52	0.00	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.	8.89	52.0	63.9	70.6	0.11	3.14	5.94	9.09	2.90	2.75	5.08	—	15,538	15,538	0.51	0.66	20.6	15,768
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.60	3.03	21.5	29.4	0.04	1.17	2.60	3.76	1.07	0.63	1.70	—	6,696	6,696	0.23	0.35	0.41	6,807
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.89	6.81	11.4	17.0	0.02	0.59	1.44	2.03	0.54	0.35	0.89	—	3,752	3,752	0.13	0.19	3.60	3,816
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	1.24	2.08	3.11	< 0.005	0.11	0.26	0.37	0.10	0.06	0.16	—	621	621	0.02	0.03	0.60	632

2.2. Construction Emissions by Year, Unmitigated

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

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

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	8.89	7.56	63.9	70.6	0.11	3.14	5.94	9.09	2.90	2.75	5.08	—	15,538	15,538	0.51	0.66	20.6	15,768
2024	5.04	52.0	29.2	50.4	0.06	1.48	3.21	4.69	1.37	0.77	2.14	—	9,285	9,285	0.32	0.39	17.9	9,427
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.60	3.03	21.5	29.4	0.04	1.17	2.60	3.76	1.07	0.63	1.70	—	6,696	6,696	0.23	0.35	0.41	6,807
2024	3.33	2.86	20.1	28.4	0.04	1.05	2.60	3.65	0.97	0.63	1.60	—	6,638	6,638	0.23	0.35	0.39	6,749
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.62	1.36	11.0	12.7	0.02	0.56	1.17	1.74	0.52	0.35	0.87	—	2,793	2,793	0.09	0.13	2.14	2,836
2024	1.89	6.81	11.4	17.0	0.02	0.59	1.44	2.03	0.54	0.35	0.89	—	3,752	3,752	0.13	0.19	3.60	3,816
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.30	0.25	2.00	2.33	< 0.005	0.10	0.21	0.32	0.09	0.06	0.16	—	462	462	0.02	0.02	0.35	469
2024	0.35	1.24	2.08	3.11	< 0.005	0.11	0.26	0.37	0.10	0.06	0.16	—	621	621	0.02	0.03	0.60	632

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.83	4.90	47.0	38.0	0.05	2.53	—	2.53	2.33	—	2.33	—	5,530	5,530	0.22	0.04	—	5,549

Dust From Material Movemen:	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.29	1.04	< 0.005	0.07	—	0.07	0.06	—	0.06	—	152	152	0.01	< 0.005	—	152
Dust From Material Movemen:	—	—	—	—	—	—	0.16	0.16	—	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	0.03	0.02	0.24	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.1	25.1	< 0.005	< 0.005	—	25.2
Dust From Material Movemen:	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.12	2.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	270	270	0.01	0.01	1.21	274
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	61.8	61.8	< 0.005	0.01	0.17	64.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	6.76	6.76	< 0.005	< 0.005	0.01	6.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.69	1.69	< 0.005	< 0.005	< 0.005	1.77
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.13
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	3.36	2.69	0.01	0.16	—	0.16	0.15	—	0.15	—	552	552	0.02	< 0.005	—	554
Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.61	0.49	< 0.005	0.03	—	0.03	0.03	—	0.03	—	91.4	91.4	< 0.005	< 0.005	—	91.7
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	300	300	0.01	0.01	1.34	305
Vendor	0.01	0.01	0.20	0.08	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	185	185	< 0.005	0.03	0.52	194
Hauling	0.04	0.03	1.40	0.33	0.01	0.02	0.10	0.11	0.02	0.04	0.05	—	1,370	1,370	< 0.005	0.22	2.98	1,438
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	22.5	22.5	< 0.005	< 0.005	0.05	22.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.02	15.9

Hauling	< 0.005	< 0.005	0.12	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	113	113	< 0.005	0.02	0.11	118
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.73	3.73	< 0.005	< 0.005	0.01	3.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.52	2.52	< 0.005	< 0.005	< 0.005	2.64
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.02	19.6

3.5. Building Construction (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.47	2.07	18.3	16.2	0.03	1.14	—	1.14	1.05	—	1.05	—	2,806	2,806	0.11	0.02	—	2,815
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	2.47	2.07	18.3	16.2	0.03	1.14	—	1.14	1.05	—	1.05	—	2,806	2,806	0.11	0.02	—	2,815
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	0.71	0.59	5.22	4.62	0.01	0.33	—	0.33	0.30	—	0.30	—	802	802	0.03	0.01	—	804
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	0.13	0.11	0.95	0.84	< 0.005	0.06	—	0.06	0.05	—	0.05	—	133	133	0.01	< 0.005	—	133
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	1.16	1.07	1.07	18.3	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,430	2,430	0.10	0.08	10.9	2,467
Vendor	0.08	0.06	1.87	0.75	0.01	0.03	0.10	0.13	0.03	0.04	0.06	—	1,731	1,731	< 0.005	0.25	4.90	1,811
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	1.06	0.90	1.21	12.4	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,157	2,157	0.11	0.08	0.28	2,184
Vendor	0.07	0.05	1.97	0.78	0.01	0.03	0.10	0.13	0.03	0.04	0.06	—	1,733	1,733	< 0.005	0.25	0.13	1,808
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	0.30	0.26	0.37	3.97	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	634	634	0.03	0.02	1.34	643
Vendor	0.02	0.02	0.56	0.22	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	495	495	< 0.005	0.07	0.61	517
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.07	0.72	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	105	105	0.01	< 0.005	0.22	106
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	81.9	81.9	< 0.005	0.01	0.10	85.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.31	1.93	17.1	16.0	0.03	1.03	—	1.03	0.94	—	0.94	—	2,805	2,805	0.11	0.02	—	2,815
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	2.31	1.93	17.1	16.0	0.03	1.03	—	1.03	0.94	—	0.94	—	2,805	2,805	0.11	0.02	—	2,815
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	1.24	1.04	9.16	8.59	0.01	0.55	—	0.55	0.51	—	0.51	—	1,504	1,504	0.06	0.01	—	1,509
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	0.23	0.19	1.67	1.57	< 0.005	0.10	—	0.10	0.09	—	0.09	—	249	249	0.01	< 0.005	—	250
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	1.11	0.97	0.99	17.2	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,388	2,388	0.10	0.08	10.1	2,425
Vendor	0.06	0.06	1.79	0.70	0.01	0.03	0.10	0.13	0.03	0.04	0.06	—	1,709	1,709	< 0.005	0.25	4.90	1,788
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	0.96	0.87	1.07	11.6	0.00	0.00	0.13	0.13	0.00	0.00	0.00	—	2,122	2,122	0.11	0.08	0.26	2,149
Vendor	0.06	0.05	1.89	0.72	0.01	0.03	0.10	0.13	0.03	0.04	0.06	—	1,711	1,711	< 0.005	0.25	0.13	1,785
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	0.52	0.47	0.61	6.99	0.00	0.00	0.07	0.07	0.00	0.00	0.00	—	1,171	1,171	0.06	0.04	2.35	1,187
Vendor	0.03	0.03	1.02	0.38	0.01	0.01	0.05	0.07	0.01	0.02	0.03	—	917	917	< 0.005	0.13	1.13	958
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	0.09	0.09	0.11	1.28	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	194	194	0.01	0.01	0.39	197
Vendor	0.01	0.01	0.19	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	152	152	< 0.005	0.02	0.19	159
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	221	221	0.01	0.01	0.94	225
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.83	1.83	< 0.005	< 0.005	< 0.005	1.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	46.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.5	19.5	< 0.005	< 0.005	—	19.6
Architectural Coatings	—	5.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.23	3.23	< 0.005	< 0.005	—	3.24
Architectural Coatings	—	0.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	3.39	0.00	0.00	0.03	0.03	0.00	0.00	0.00	—	472	472	0.02	0.02	2.00	479
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.3	47.3	< 0.005	< 0.005	0.09	47.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	7.82	7.82	< 0.005	< 0.005	0.02	7.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	7/4/2023	7/17/2023	5.00	10.0	—
Grading	Grading	7/18/2023	8/28/2023	5.00	30.0	—
Building Construction	Building Construction	8/8/2023	9/30/2024	5.00	300	—
Paving	Paving	7/2/2024	7/29/2024	5.00	20.0	—
Architectural Coating	Architectural Coating	6/4/2024	7/29/2024	5.00	40.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
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
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29

Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	18.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	2.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	0.00	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	6.00	10.2	HHDT,MHDT
Grading	Hauling	20.0	20.0	HHDT
Grading	Onsite truck	0.00	0.00	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	162	18.5	LDA,LDT1,LDT2

Building Construction	Vendor	56.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	0.00	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	0.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	0.00	0.00	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	32.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	0.00	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	577,200	192,400	18,943

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

Site Preparation	0.00	0.00	35.0	0.00	—
Grading	4,700	0.00	120	0.00	—
Paving	0.00	0.00	0.00	0.00	7.25

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
Unrefrigerated Warehouse-No Rail	0.00	0%
Parking Lot	0.73	100%
Other Asphalt Surfaces	6.52	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	30.3	annual days of extreme heat
Extreme Precipitation	1.70	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	1.96	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A

Air Quality	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	6.32
AQ-DPM	16.0
Drinking Water	50.7
Lead Risk Housing	90.6
Pesticides	56.5
Toxic Releases	98.8
Traffic	14.4
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	0.00
Haz Waste Facilities/Generators	91.6
Impaired Water Bodies	0.00
Solid Waste	22.1

Sensitive Population	—
Asthma	91.7
Cardio-vascular	85.3
Low Birth Weights	88.0
Socioeconomic Factor Indicators	—
Education	92.7
Housing	79.6
Linguistic	61.5
Poverty	91.8
Unemployment	94.3

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	19.82548441
Employed	6.723983062
Median HI	14.29488002
Education	—
Bachelor's or higher	8.520467086
High school enrollment	100
Preschool enrollment	7.070447838
Transportation	—
Auto Access	35.49339151
Active commuting	40.30540228
Social	—
2-parent households	65.41768254

Voting	20.50558193
Neighborhood	—
Alcohol availability	80.5338124
Park access	17.07943026
Retail density	41.52444501
Supermarket access	9.893494161
Tree canopy	19.99230078
Housing	—
Homeownership	42.78198383
Housing habitability	5.735916848
Low-inc homeowner severe housing cost burden	13.43513409
Low-inc renter severe housing cost burden	0.384960862
Uncrowded housing	10.95855255
Health Outcomes	—
Insured adults	37.31553959
Arthritis	60.6
Asthma ER Admissions	25.2
High Blood Pressure	51.5
Cancer (excluding skin)	87.6
Asthma	13.4
Coronary Heart Disease	37.1
Chronic Obstructive Pulmonary Disease	17.9
Diagnosed Diabetes	19.9
Life Expectancy at Birth	11.5
Cognitively Disabled	41.3
Physically Disabled	65.4
Heart Attack ER Admissions	37.4

Mental Health Not Good	8.1
Chronic Kidney Disease	27.1
Obesity	13.8
Pedestrian Injuries	19.6
Physical Health Not Good	9.8
Stroke	26.0
Health Risk Behaviors	—
Binge Drinking	66.7
Current Smoker	7.4
No Leisure Time for Physical Activity	14.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	10.6
Elderly	98.5
English Speaking	11.0
Foreign-born	64.9
Outdoor Workers	5.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.8
Traffic Density	17.5
Traffic Access	23.0
Other Indices	—
Hardship	89.2
Other Decision Support	—
2016 Voting	5.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	88.0
Healthy Places Index Score for Project Location (b)	13.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Total Project area is 18.02 acres
Construction: Construction Phases	Construction anticipated to start in July 2023 and end in July 2024
Construction: Off-Road Equipment	Construction equipment based on equipment used for other industrial projects within the area
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	Rule 1113

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APPENDIX 4.2:

CALEEMOD OPERATIONAL EMISSIONS MODEL OUTPUTS

8th Street Industrial (Operations) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	8th Street Industrial (Operations)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.50
Precipitation (days)	13.0
Location	34.60070745902736, -118.114290302062
County	Los Angeles-Mojave Desert
City	Palmdale
Air District	Antelope Valley AQMD
Air Basin	Mojave Desert
TAZ	3655
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-No Rail	385	1000sqft	10.8	384,800	84,488	0.00	—	—
User Defined Industrial	385	User Defined Unit	0.00	0.00	0.00	0.00	—	—

Parking Lot	171	Space	0.73	0.00	0.00	0.00	—	—
Other Asphalt Surfaces	284	1000sqft	6.52	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.21	14.6	6.26	47.9	0.09	0.11	2.35	2.46	0.11	0.44	0.55	365	11,365	11,730	37.4	1.21	426	13,451
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.98	11.6	6.55	24.3	0.08	0.09	2.35	2.44	0.08	0.44	0.52	365	10,777	11,142	37.4	1.22	393	12,834
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.67	12.3	4.92	27.5	0.06	0.07	1.72	1.80	0.07	0.32	0.40	365	8,603	8,969	37.4	1.01	403	10,607
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.67	2.24	0.90	5.02	0.01	0.01	0.31	0.33	0.01	0.06	0.07	60.5	1,424	1,485	6.19	0.17	66.7	1,756

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.24	2.98	6.11	31.2	0.09	0.09	2.35	2.44	0.08	0.44	0.52	—	9,054	9,054	0.24	0.76	33.4	9,321
Area	2.97	11.6	0.14	16.7	< 0.005	0.02	—	0.02	0.03	—	0.03	—	68.8	68.8	< 0.005	< 0.005	—	69.1
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,747	1,747	0.17	0.02	—	1,757
Water	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
Waste	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Total	6.21	14.6	6.26	47.9	0.09	0.11	2.35	2.46	0.11	0.44	0.55	365	11,365	11,730	37.4	1.21	426	13,451
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.98	2.72	6.55	24.3	0.08	0.09	2.35	2.44	0.08	0.44	0.52	—	8,535	8,535	0.25	0.78	0.87	8,773
Area	—	8.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,747	1,747	0.17	0.02	—	1,757
Water	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
Waste	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Total	2.98	11.6	6.55	24.3	0.08	0.09	2.35	2.44	0.08	0.44	0.52	365	10,777	11,142	37.4	1.22	393	12,834
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.20	2.01	4.85	19.2	0.06	0.06	1.72	1.78	0.06	0.32	0.38	—	6,328	6,328	0.19	0.57	10.6	6,513
Area	1.47	10.2	0.07	8.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.9	33.9	< 0.005	< 0.005	—	34.1
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,747	1,747	0.17	0.02	—	1,757
Water	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
Waste	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392

Total	3.67	12.3	4.92	27.5	0.06	0.07	1.72	1.80	0.07	0.32	0.40	365	8,603	8,969	37.4	1.01	403	10,607
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.40	0.37	0.89	3.51	0.01	0.01	0.31	0.33	0.01	0.06	0.07	—	1,048	1,048	0.03	0.09	1.75	1,078
Area	0.27	1.87	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.62	5.62	< 0.005	< 0.005	—	5.64
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	289	289	0.03	< 0.005	—	291
Water	—	—	—	—	—	—	—	—	—	—	—	28.2	81.9	110	2.90	0.07	—	204
Waste	—	—	—	—	—	—	—	—	—	—	—	32.3	0.00	32.3	3.23	0.00	—	113
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	64.9	64.9
Total	0.67	2.24	0.90	5.02	0.01	0.01	0.31	0.33	0.01	0.06	0.07	60.5	1,424	1,485	6.19	0.17	66.7	1,756

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	3.04	2.82	1.54	29.5	0.05	0.02	0.22	0.24	0.02	0.07	0.09	—	4,862	4,862	0.22	0.15	20.9	4,933
User Defined Industrial	0.19	0.16	4.57	1.66	0.04	0.06	0.31	0.37	0.06	0.10	0.16	—	4,192	4,192	0.02	0.62	12.6	4,388
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	3.24	2.98	6.11	31.2	0.09	0.09	0.53	0.62	0.08	0.17	0.25	—	9,054	9,054	0.24	0.76	33.4	9,321
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	2.80	2.58	1.73	22.6	0.04	0.02	0.22	0.24	0.02	0.07	0.09	—	4,340	4,340	0.24	0.16	0.54	4,394
User Defined Industrial	0.18	0.15	4.82	1.68	0.04	0.06	0.31	0.37	0.06	0.10	0.16	—	4,195	4,195	0.02	0.62	0.33	4,380
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	2.98	2.72	6.55	24.3	0.08	0.09	0.53	0.62	0.08	0.17	0.25	—	8,535	8,535	0.25	0.78	0.87	8,773
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.38	0.35	0.24	3.29	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	540	540	0.03	0.02	1.09	548
User Defined Industrial	0.02	0.02	0.65	0.22	0.01	0.01	0.04	0.05	0.01	0.01	0.02	—	508	508	< 0.005	0.07	0.66	531
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	0.40	0.37	0.89	3.51	0.01	0.01	0.07	0.08	0.01	0.02	0.03	—	1,048	1,048	0.03	0.09	1.75	1,078

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,720	1,720	0.16	0.02	—	1,730
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	26.6	26.6	< 0.005	< 0.005	—	26.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,747	1,747	0.17	0.02	—	1,757
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,720	1,720	0.16	0.02	—	1,730
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	26.6	26.6	< 0.005	< 0.005	—	26.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,747	1,747	0.17	0.02	—	1,757
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	285	285	0.03	< 0.005	—	286
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.41	4.41	< 0.005	< 0.005	—	4.43
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	289	289	0.03	< 0.005	—	291

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	8.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.97	2.74	0.14	16.7	< 0.005	0.02	—	0.02	0.03	—	0.03	—	68.8	68.8	< 0.005	< 0.005	—	69.1
Total	2.97	11.6	0.14	16.7	< 0.005	0.02	—	0.02	0.03	—	0.03	—	68.8	68.8	< 0.005	< 0.005	—	69.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	8.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	8.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.27	0.25	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.62	5.62	< 0.005	< 0.005	—	5.64
Total	0.27	1.87	0.01	1.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.62	5.62	< 0.005	< 0.005	—	5.64

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	171	495	665	17.5	0.42	—	1,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	28.2	81.9	110	2.90	0.07	—	204
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	28.2	81.9	110	2.90	0.07	—	204

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	195	0.00	195	19.5	0.00	—	682
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	32.3	0.00	32.3	3.23	0.00	—	113
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	32.3	0.00	32.3	3.23	0.00	—	113

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	392	392
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	64.9	64.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	64.9	64.9

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	608	51.4	20.6	162,266	6,383	540	216	1,703,633
User Defined Industrial	90.0	7.62	3.04	24,021	1,479	125	50.0	394,781
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

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	577,200	192,400	18,943

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	1,801,004	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00
Parking Lot	27,856	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	88,985,000	1,367,379
User Defined Industrial	0.00	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)
Unrefrigerated Warehouse-No Rail	362	0.00
User Defined Industrial	0.00	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Unrefrigerated Warehouse-No Rail	Cold storage	User Defined	150	7.50	7.50	7.50	25.0

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	30.3	annual days of extreme heat
Extreme Precipitation	1.70	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	1.96	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	6.32
AQ-DPM	16.0
Drinking Water	50.7
Lead Risk Housing	90.6
Pesticides	56.5
Toxic Releases	98.8
Traffic	14.4
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	0.00
Haz Waste Facilities/Generators	91.6

Impaired Water Bodies	0.00
Solid Waste	22.1
Sensitive Population	—
Asthma	91.7
Cardio-vascular	85.3
Low Birth Weights	88.0
Socioeconomic Factor Indicators	—
Education	92.7
Housing	79.6
Linguistic	61.5
Poverty	91.8
Unemployment	94.3

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	19.82548441
Employed	6.723983062
Median HI	—
Education	—
Bachelor's or higher	8.520467086
High school enrollment	100
Preschool enrollment	7.070447838
Transportation	—
Auto Access	35.49339151
Active commuting	40.30540228

Social	—
2-parent households	65.41768254
Voting	20.50558193
Neighborhood	—
Alcohol availability	80.5338124
Park access	17.07943026
Retail density	41.52444501
Supermarket access	9.893494161
Tree canopy	19.99230078
Housing	—
Homeownership	42.78198383
Housing habitability	5.735916848
Low-inc homeowner severe housing cost burden	13.43513409
Low-inc renter severe housing cost burden	0.384960862
Uncrowded housing	10.95855255
Health Outcomes	—
Insured adults	37.31553959
Arthritis	60.6
Asthma ER Admissions	25.2
High Blood Pressure	51.5
Cancer (excluding skin)	87.6
Asthma	13.4
Coronary Heart Disease	37.1
Chronic Obstructive Pulmonary Disease	17.9
Diagnosed Diabetes	19.9
Life Expectancy at Birth	11.5
Cognitively Disabled	41.3

Physically Disabled	65.4
Heart Attack ER Admissions	37.4
Mental Health Not Good	8.1
Chronic Kidney Disease	27.1
Obesity	13.8
Pedestrian Injuries	19.6
Physical Health Not Good	9.8
Stroke	26.0
Health Risk Behaviors	—
Binge Drinking	66.7
Current Smoker	7.4
No Leisure Time for Physical Activity	14.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	10.6
Elderly	98.5
English Speaking	11.0
Foreign-born	64.9
Outdoor Workers	5.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.8
Traffic Density	17.5
Traffic Access	23.0
Other Indices	—
Hardship	89.2
Other Decision Support	—

2016 Voting	5.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	88.0
Healthy Places Index Score for Project Location (b)	13.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Total Project area is 18.02 acres
Construction: Construction Phases	Construction anticipated to start in July 2023 and end in July 2024
Construction: Off-Road Equipment	Construction equipment based on equipment used for other industrial projects within the area
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Site Preparation, Grading, and Building Construction
Construction: Architectural Coatings	Rule 1113

Operations: Vehicle Data	Trip characteristics based on information provided in the Traffic analysis
Operations: Fleet Mix	Passenger Car Mix estimated based on the CalEEMod default fleet mix and the ratio of the vehicle classes (LDA, LDT1, LDT2, MDV, & MCY). Truck Mix based on information in the Traffic analysis
Operations: Energy Use	Natural gas will not be used
Operations: Refrigerants	Per 17 CCR 95371, new refrigeration equipment containing >50 lbs of refrigerant in new facilities is prohibited from utilizing refrigerants with a GWP of 150 or greater as of 1 Jan 2022

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APPENDIX 4.2:

EMFAC2021 EMISSIONS INVENTORY

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Los Angeles (MD)

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

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

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Los Angeles (MD)	2023	HHDT	Aggregate	Aggregate	Gasoline	0.024732928	4508.806862	0.884504933	884.5049326	12161499.22	4508.806862	76325743.97	6.28	HHDT
Los Angeles (MD)	2023	HHDT	Aggregate	Aggregate	Diesel	1388.842766	76090295.18	12123.22274	12123222.74		76090295.18			
Los Angeles (MD)	2023	HHDT	Aggregate	Aggregate	Electricity	1.133707991	31566.83249	0	0		31566.83249			
Los Angeles (MD)	2023	HHDT	Aggregate	Aggregate	Natural Gas	7.396021487	199373.1438	37.39197736	37391.97736		199373.1438			
Los Angeles (MD)	2023	LDA	Aggregate	Aggregate	Gasoline	77831.01529	1367553491	46773.5211	46773521.1	47465249.84	1367553491	1439148101	30.32	LDA
Los Angeles (MD)	2023	LDA	Aggregate	Aggregate	Diesel	309.3821242	4866582.329	109.4115548	109411.5548		4866582.329			
Los Angeles (MD)	2023	LDA	Aggregate	Aggregate	Electricity	1836.882041	32659141.32	0	0		32659141.32			
Los Angeles (MD)	2023	LDA	Aggregate	Aggregate	Plug-in Hybrid	1710.245645	34068886.23	582.3171897	582317.1897		34068886.23			
Los Angeles (MD)	2023	LDT1	Aggregate	Aggregate	Gasoline	6699.656628	99293586.93	4084.01465	4084014.65	4086601.699	99293586.93	99491742.37	24.35	LDT1
Los Angeles (MD)	2023	LDT1	Aggregate	Aggregate	Diesel	4.310091994	32086.85294	1.271378497	1271.378497		32086.85294			
Los Angeles (MD)	2023	LDT1	Aggregate	Aggregate	Electricity	5.051703982	80592.74404	0	0		80592.74404			
Los Angeles (MD)	2023	LDT1	Aggregate	Aggregate	Plug-in Hybrid	3.937144493	85475.84192	1.315670452	1315.670452		85475.84192			
Los Angeles (MD)	2023	LDT2	Aggregate	Aggregate	Gasoline	24879.69462	426203880	18140.26387	18140263.87	18223480.09	426203880	431673837.7	23.69	LDT2
Los Angeles (MD)	2023	LDT2	Aggregate	Aggregate	Diesel	64.08799548	1230442.538	36.01728636	36017.28636		1230442.538			
Los Angeles (MD)	2023	LDT2	Aggregate	Aggregate	Electricity	92.90357073	1284529.545	0	0		1284529.545			
Los Angeles (MD)	2023	LDT2	Aggregate	Aggregate	Plug-in Hybrid	139.5168318	2954985.614	47.19893112	47198.93112		2954985.614			
Los Angeles (MD)	2023	LHDT1	Aggregate	Aggregate	Gasoline	2716.940826	32779862.8	2541.386294	2541386.294	3933040.104	32779862.8	62478134.73	15.89	LHDT1
Los Angeles (MD)	2023	LHDT1	Aggregate	Aggregate	Diesel	2368.443057	29698271.93	1391.653811	1391653.811		29698271.93			
Los Angeles (MD)	2023	LHDT2	Aggregate	Aggregate	Gasoline	355.149447	4414956.67	369.8266526	369826.6526	1128752.478	4414956.67	17794964.06	15.77	LHDT2
Los Angeles (MD)	2023	LHDT2	Aggregate	Aggregate	Diesel	1034.571432	13380007.39	758.9258249	758925.8249		13380007.39			
Los Angeles (MD)	2023	MCY	Aggregate	Aggregate	Gasoline	4069.208062	8244639.292	198.6261695	198626.1695	198626.1695	8244639.292	8244639.292	41.51	MCY
Los Angeles (MD)	2023	MDV	Aggregate	Aggregate	Gasoline	21501.38274	339321274.7	17814.9435	17814943.5	18086147.86	339321274.7	348499187.6	19.27	MDV
Los Angeles (MD)	2023	MDV	Aggregate	Aggregate	Diesel	347.4837995	5814447.798	237.9299449	237929.9449		5814447.798			
Los Angeles (MD)	2023	MDV	Aggregate	Aggregate	Electricity	100.8416964	1391761.677	0	0		1391761.677			
Los Angeles (MD)	2023	MDV	Aggregate	Aggregate	Plug-in Hybrid	97.09610371	1971703.374	33.27441418	33274.41418		1971703.374			
Los Angeles (MD)	2023	MH	Aggregate	Aggregate	Gasoline	922.290524	2705336.776	544.6151906	544615.1906	629161.9483	2705336.776	3582969.439	5.69	MH
Los Angeles (MD)	2023	MH	Aggregate	Aggregate	Diesel	295.7437113	877632.6632	84.54675769	84546.75769		877632.6632			
Los Angeles (MD)	2023	MHDT	Aggregate	Aggregate	Gasoline	155.5171165	5023143.803	952.1511205	952151.1205	3786831.796	5023143.803	31492826.43	8.32	MHDT
Los Angeles (MD)	2023	MHDT	Aggregate	Aggregate	Diesel	1630.036725	26311977.74	2818.118454	2818118.454		26311977.74			
Los Angeles (MD)	2023	MHDT	Aggregate	Aggregate	Electricity	0.690342951	6186.572194	0	0		6186.572194			
Los Angeles (MD)	2023	MHDT	Aggregate	Aggregate	Natural Gas	9.048539573	151518.3127	16.56222193	16562.22193		151518.3127			
Los Angeles (MD)	2023	OBUS	Aggregate	Aggregate	Gasoline	53.68179578	1360121.443	267.6644659	267664.4659	412266.3886	1360121.443	2366082.056	5.74	OBUS
Los Angeles (MD)	2023	OBUS	Aggregate	Aggregate	Diesel	43.22302745	1005960.613	144.6019227	144601.9227		1005960.613			
Los Angeles (MD)	2023	SBUS	Aggregate	Aggregate	Gasoline	52.35204512	1669346.778	177.6636158	177663.6158	586731.1468	1669346.778	4583322.345	7.81	SBUS
Los Angeles (MD)	2023	SBUS	Aggregate	Aggregate	Diesel	368.0877483	2698353.787	357.406974	357406.974		2698353.787			
Los Angeles (MD)	2023	SBUS	Aggregate	Aggregate	Electricity	0.242645698	921.9212995	0	0		921.9212995			
Los Angeles (MD)	2023	SBUS	Aggregate	Aggregate	Natural Gas	26.53314038	214699.8593	51.66055698	51660.55698		214699.8593			
Los Angeles (MD)	2023	UBUS	Aggregate	Aggregate	Diesel	35.32729857	1938440.162	313.8484801	313848.4801	736177.496	1938440.162	3999001.904	5.43	UBUS
Los Angeles (MD)	2023	UBUS	Aggregate	Aggregate	Electricity	32.29924441	793065.5534	0	0		793065.5534			
Los Angeles (MD)	2023	UBUS	Aggregate	Aggregate	Natural Gas	27.27247845	1267496.189	422.3290159	422329.0159		1267496.189			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (MD)
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
Los Angeles (MD)	2024	HHDT	Aggregate	Aggregate	Gasoline	0.032085868	5715.464832	1.115821054	1115.821054	12193054.04	5715.464832	77725737.22	6.37	HHDT
Los Angeles (MD)	2024	HHDT	Aggregate	Aggregate	Diesel	1430.542859	77357289.41	12157.84747	12157847.47		77357289.41			
Los Angeles (MD)	2024	HHDT	Aggregate	Aggregate	Electricity	4.140120695	181913.4144	0	0		181913.4144			
Los Angeles (MD)	2024	HHDT	Aggregate	Aggregate	Natural Gas	7.138055354	180818.9283	34.0907472	34090.7472		180818.9283			
Los Angeles (MD)	2024	LDA	Aggregate	Aggregate	Gasoline	76762.27094	1370444417	46168.07368	46168073.68	46904869.28	1370444417	1455837772	31.04	LDA
Los Angeles (MD)	2024	LDA	Aggregate	Aggregate	Diesel	290.1711953	4617888.183	103.12303	103123.03		4617888.183			
Los Angeles (MD)	2024	LDA	Aggregate	Aggregate	Electricity	2322.395161	43120412.83	0	0		43120412.83			
Los Angeles (MD)	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	1867.600616	37655054.29	633.6725732	633672.5732		37655054.29			
Los Angeles (MD)	2024	LDT1	Aggregate	Aggregate	Gasoline	6423.848955	96891465.94	3931.716294	3931716.294	3934865.78	96891465.94	97178162.67	24.70	LDT1
Los Angeles (MD)	2024	LDT1	Aggregate	Aggregate	Diesel	3.917566383	28971.94241	1.147885706	1147.885706		28971.94241			
Los Angeles (MD)	2024	LDT1	Aggregate	Aggregate	Electricity	7.053496852	124268.3624	0	0		124268.3624			
Los Angeles (MD)	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	6.071900757	133456.4249	2.001599886	2001.599886		133456.4249			
Los Angeles (MD)	2024	LDT2	Aggregate	Aggregate	Gasoline	24686.62589	432891064.6	17960.90211	17960902.11	18056031.59	432891064.6	439737439.5	24.35	LDT2
Los Angeles (MD)	2024	LDT2	Aggregate	Aggregate	Diesel	67.34472491	1313119.279	37.69421938	37694.21938		1313119.279			
Los Angeles (MD)	2024	LDT2	Aggregate	Aggregate	Electricity	133.657363	1859808.641	0	0		1859808.641			
Los Angeles (MD)	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	172.027735	3673446.996	57.43525713	57435.25713		3673446.996			
Los Angeles (MD)	2024	LHDT1	Aggregate	Aggregate	Gasoline	2610.293657	32373142.72	2448.912959	2448912.959	3822620.275	32373142.72	61907258.99	16.19	LHDT1
Los Angeles (MD)	2024	LHDT1	Aggregate	Aggregate	Diesel	2313.838197	29357150.86	1373.707315	1373707.315		29357150.86			
Los Angeles (MD)	2024	LHDT1	Aggregate	Aggregate	Electricity	6.56063809	176965.4223	0	0		176965.4223			
Los Angeles (MD)	2024	LHDT2	Aggregate	Aggregate	Gasoline	347.4204171	4399535.41	361.8220516	361822.0516	1114439.106	4399535.41	17750585.52	15.93	LHDT2
Los Angeles (MD)	2024	LHDT2	Aggregate	Aggregate	Diesel	1022.085811	13307651.93	752.6170539	752617.0539		13307651.93			
Los Angeles (MD)	2024	LHDT2	Aggregate	Aggregate	Electricity	1.698098295	43398.18272	0	0		43398.18272			
Los Angeles (MD)	2024	MCY	Aggregate	Aggregate	Gasoline	3991.966337	8144515.326	195.4480874	195448.0874	195448.0874	8144515.326	8144515.326	41.67	MCY
Los Angeles (MD)	2024	MDV	Aggregate	Aggregate	Gasoline	20760.81678	334411994	17219.52618	17219526.18	17488157.1	334411994	344540002.3	19.70	MDV
Los Angeles (MD)	2024	MDV	Aggregate	Aggregate	Diesel	337.0807724	5651808.555	228.7347928	228734.7928		5651808.555			
Los Angeles (MD)	2024	MDV	Aggregate	Aggregate	Electricity	146.5459136	2036271.066	0	0		2036271.066			
Los Angeles (MD)	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	118.2959097	2439928.689	39.89612487	39896.12487		2439928.689			
Los Angeles (MD)	2024	MH	Aggregate	Aggregate	Gasoline	855.8079044	2527155.876	509.3066994	509306.6994	592617.6596	2527155.876	3391229.176	5.72	MH
Los Angeles (MD)	2024	MH	Aggregate	Aggregate	Diesel	290.1685566	864073.2998	83.31096021	83310.96021		864073.2998			
Los Angeles (MD)	2024	MHDT	Aggregate	Aggregate	Gasoline	151.3994632	5098967.631	953.0815844	953081.5844	3809919.41	5098967.631	31967035.78	8.39	MHDT
Los Angeles (MD)	2024	MHDT	Aggregate	Aggregate	Diesel	1658.118471	26617256.99	2840.436219	2840436.219		26617256.99			
Los Angeles (MD)	2024	MHDT	Aggregate	Aggregate	Electricity	4.41255181	100936.3395	0	0		100936.3395			
Los Angeles (MD)	2024	MHDT	Aggregate	Aggregate	Natural Gas	9.115109598	149874.8225	16.40160643	16401.60643		149874.8225			
Los Angeles (MD)	2024	OBUS	Aggregate	Aggregate	Gasoline	51.71121691	1307025.027	255.3859786	255385.9786	399809.4097	1307025.027	2321123.88	5.81	OBUS
Los Angeles (MD)	2024	OBUS	Aggregate	Aggregate	Diesel	43.67445244	1008493.261	144.4234311	144423.4311		1008493.261			
Los Angeles (MD)	2024	OBUS	Aggregate	Aggregate	Electricity	0.100730445	5605.592275	0	0		5605.592275			
Los Angeles (MD)	2024	SBUS	Aggregate	Aggregate	Gasoline	51.92998089	1688942.961	179.0421103	179042.1103	586008.0168	1688942.961	4604715.133	7.86	SBUS
Los Angeles (MD)	2024	SBUS	Aggregate	Aggregate	Diesel	366.1891716	2681403.788	353.4409476	353440.9476		2681403.788			
Los Angeles (MD)	2024	SBUS	Aggregate	Aggregate	Electricity	1.099559974	9851.661776	0	0		9851.661776			
Los Angeles (MD)	2024	SBUS	Aggregate	Aggregate	Natural Gas	27.96144975	224516.7232	53.52495889	53524.95889		224516.7232			
Los Angeles (MD)	2024	UBUS	Aggregate	Aggregate	Diesel	29.27119024	1637317.334	250.0646711	250064.6711	775027.6798	1637317.334	4007089.92	5.17	UBUS
Los Angeles (MD)	2024	UBUS	Aggregate	Aggregate	Electricity	32.29924441	793065.5534	0	0		793065.5534			
Los Angeles (MD)	2024	UBUS	Aggregate	Aggregate	Natural Gas	33.52052086	1576707.032	524.9630087	524963.0087		1576707.032			

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