



Cajon Boulevard Warehouse

ENERGY ANALYSIS

COUNTY OF SAN BERNARDINO

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MARCH 6, 2018

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LIST OF ABBREVIATED TERMS

(1)	Reference
AQIA	Air Quality Impact Analysis
ARB	Air Resources Board
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEC	California Energy Commission
CPUC	California Public Utilities Commission
EVs	Electric Vehicles
EMFAC	Emissions Factor
FERC	Federal Energy Regulatory Commission
GPA	General Plan Amendment
GWh	Gigawatt Hour
HHD	Heavy-Heavy Duty
ISO	Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
LHD	Light-Heavy Duty
MHD	Medium-Heavy Duty
MPG	Miles Per Gallon
MPO	Metropolitan Planning Organization
Project	Cajon Boulevard Warehouse
SCE	Southern California Edison
SoCalGas	Southern California Gas
SF	Square Feet
TEA-21	Transportation Equity Act for the 21 st Century
VMT	Vehicle Miles Traveled

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EXECUTIVE SUMMARY

For new development such as that proposed by the Cajon Boulevard Warehouse, compliance with California Building Standards Code Title 24 energy efficiency requirements (CalGreen), combined with the mitigation measures that are recommended by the Cajon Boulevard Warehouse Air Quality Impact Analysis, Greenhouse Gas Analysis, and Health Risk Assessment, are considered demonstrable evidence of efficient use of energy. As discussed below, the Project would provide for, and promote, energy efficiencies beyond those required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the Project's operation is calculated to be comparable to, or less than, energy consumed by other industrial warehouse uses of similar scale and intensity that are constructed and operating in California. On this basis, the Project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the Project would not cause or result in the need for additional energy producing facilities or energy delivery systems.

1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Cajon Boulevard Warehouse Project is located on Cajon Boulevard between Kendall Drive and Shelter Way in unincorporated County of San Bernardino, as shown on Exhibit 1-A. The Project site is located roughly 50 feet south of existing Atchison, Topeka and Santa Fe (AT & SF) and Union Pacific (UP) railroad lines, and approximately 715 feet southwest of Interstate 215 (I-215). The Project site is currently vacant, with existing industrial uses located south and southeast of the site. Existing sensitive receptors, such as residential homes, a church, and a park use are located east and southeast of the Project site.

1.2 PROJECT DESCRIPTION

The proposed Project consist a single 321,496 square foot warehouse building, as shown on Exhibit 1-B. For the purposes of this analysis, it has been assumed that the Project will be developed in one phase with an anticipated Opening Year of 2019.

As part of the Project’s design, all on-site indoor and outdoor cargo handling equipment (CHE) (including yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) will be powered by non-combustion engines (e.g. electric). Since there are no exhaust emissions associated with the equipment, for purposes of the Project, emissions associated with yard trucks and forklifts are not included in the emissions totals.

Per the *Cajon Boulevard Warehouse Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 560 trip-ends per day (actual vehicles). (1) The net Project trip generation includes 112 truck trip-ends per day from the proposed buildings within the Project site. This study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips to the surrounding area.

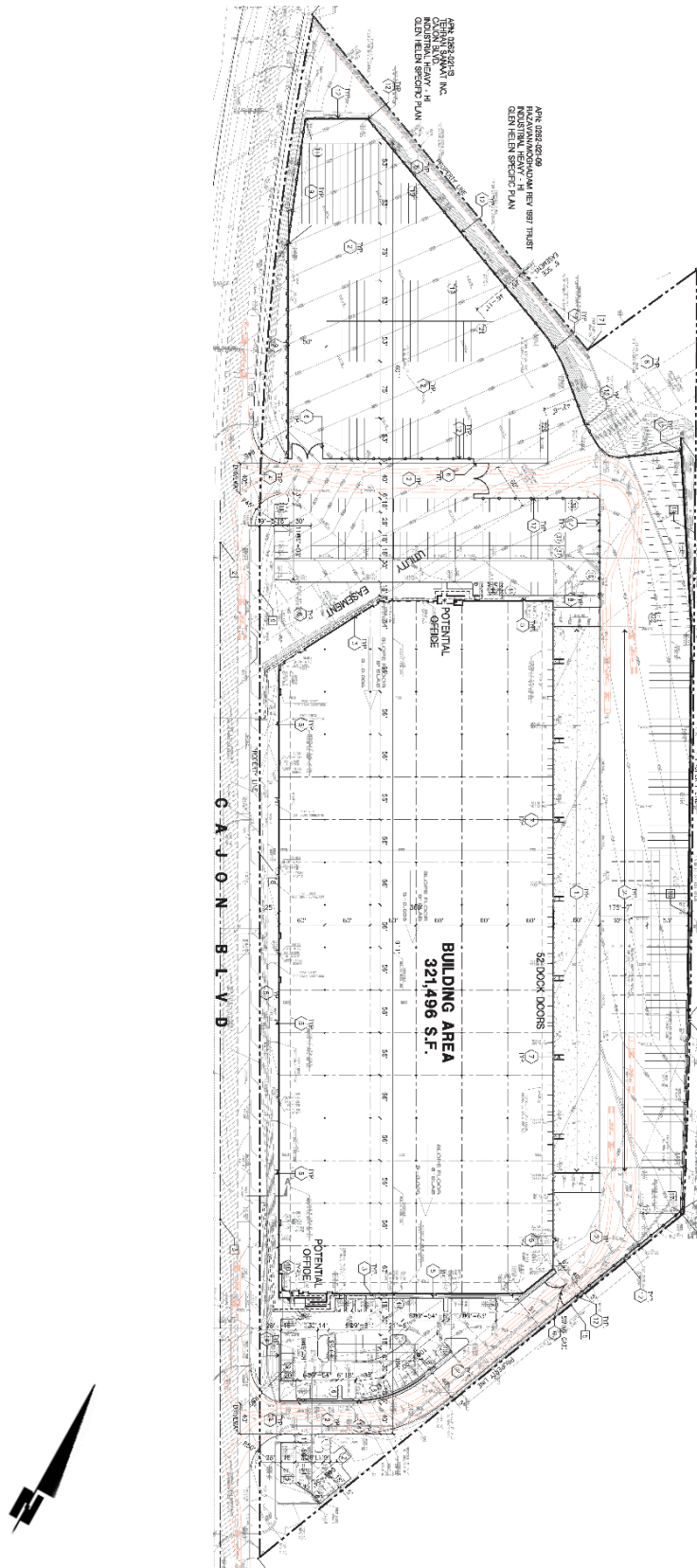
1.3 MITIGATION MEASURES

The Project would not result in an efficient, wasteful, or unnecessary consumption of energy. As such, no mitigation measures are required.

EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: SITE PLAN



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2 EXISTING CONDITIONS

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

2.1 OVERVIEW

California's estimated annual energy use as of 2016 included:

- Approximately 290,567 gigawatt hours of electricity; (2)
- Approximately 2,177,467 million cubic feet of natural gas per year (3); and
- Approximately 18.5 billion gallons of transportation fuel (for the year 2014) (4).

As of 2015, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.3 percent transportation;
- Approximately 23.9 percent industrial;
- Approximately 17.7 percent residential; and
- Approximately 19.1 percent commercial. (5)

California's massive electricity in-state generation system generates approximately 198,227 gigawatt-hours each year and is transported over the state's 32,000 miles of transmission lines. In 2016, California produced close to 68% of the electricity it uses; the rest was imported from the Pacific Northwest (15%) and the U.S. Southwest (17%). Natural gas is the main source for electricity generation at 50% of the total in-state electric generation system power as shown in Table 2-1.

TABLE 2-1: TOTAL ELECTRICITY SYSTEM POWER (CALIFORNIA 2016)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	California Power Mix (GWh)	Percent California Power Mix
Coal	324	0.16%	373	11,310	12,006	4.13%
Large Hydro	24,410	12.31%	3367	1,904	29,681	10.21%
Natural Gas	98,831	49.86%	41	7,120	105,992	36.48%
Nuclear	18,931	9.55%	0	7,739	26,670	9.18%
Oil	37	0.0%	0	0	37	0.01%
Other	394	0.2%	0	0	394	0.14%
Renewables	55,300	27.90%	11,710	6,952	73,961	25.45%
Biomass	5,868	2.96%	659	25	6,553	2.26%
Geothermal	11,582	5.84%	96	1038	12,717	4.38%
Small Hydro	4,567	2.30%	229	1	4,796	1.65%
Solar	19,783	9.98%	0	3,791	23,574	8.11%
Wind	13,500	6.81%	10,725	2,097	26,321	9.06%
Unspecified Sources of Power	N/A	N/A	26,888	14,937	41,825	14.39%
Total	198,227	100.00%	42,378	49,963	290,567	100.00%

Source: http://energyalmanac.ca.gov/electricity/total_system_power.html

A 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:

- Excluding federal offshore areas, California was the third-largest producer of petroleum among the 50 states in 2016, after Texas and North Dakota, and, as of January 2017, third in oil refining capacity, with a combined capacity of almost 2 million barrels per calendar day at the state’s 18 operable refineries.
- In 2015, California accounted for one-fifth of the nation’s jet fuel consumption.
- California’s total energy consumption ranks amount the highest in the nation, but, in 2015, the state’s per capita energy consumption ranked 49th, due in part to its mild climate and its energy efficiency programs.
- In 2016, California ranked third in the nation in conventional hydroelectric generation, second in net electricity generation from all other renewable energy resources combined, and first as a producer of electricity from solar, geothermal, and biomass resources.
- California leads the nation in solar thermal electricity capacity and generation. In 2016, California had 73% of the nation’s capacity and produced 71% of the nation’s utility-scale electricity generation from solar thermal resources (6).

As indicated above, California is one of the nation’s leading energy-producing states, and California per capita energy use is among the nation’s most efficient. Given the nature of the proposed Project being an industrial development, the remainder of this discussion will focus on

the three sources of energy that are most relevant to the project—namely, electricity and natural gas for industrial uses, and transportation fuel for vehicle trips associated with industrial uses planned for the Project.

2.2 ELECTRICITY

The Southern California region’s electricity reliability has been of concern for the past several years due to the planned retirement of aging facilities that depend upon once-through cooling technologies, as well as the June 2013 retirement of the San Onofre Nuclear Generating Station (San Onofre). While the once-through cooling phase-out has been ongoing since the May 2010 adoption of the State Water Resources Control Board’s once-through cooling policy, the retirement of San Onofre complicated the situation. California ISO studies had revealed the extent to which the Los Angeles Basin and San Diego 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 (2013 IEPR) after a collaborative process with other energy agencies, utilities, and air districts (7). If the resource development outlined in the preliminary plan continues as detailed, reliability in Southern California would likely be assured; however, tight resource margins have led energy agencies and the ARB to develop a contingency plan. This contingency plan was discussed at a public workshop in Los Angeles on August 20, 2014, and is detailed within this Section (8).

Electricity would be provided to the Project by Southern California Edison (SCE). SCE provides electric power to more than 14 million persons in 15 counties and in 180 incorporated cities, within a service area encompassing approximately 50,000 square miles. 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. (9)

California’s electricity industry is an organization of traditional utilities, private generating companies, and state agencies, each with a variety of roles and responsibilities to ensure that electrical power is provided to consumers. The California Independent Service Operator (“ISO”) is a nonprofit public benefit corporation, and is the impartial operator of the State’s wholesale power grid and is charged with maintaining grid reliability, and to direct uninterrupted electrical energy supplies to California residential and commercial users. While utilities [such as SCE] 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 sufficient 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. (10)

Part of the ISO’s charge is to plan and coordinate grid enhancements to ensure that electrical power is provided to California consumers. To this end, transmission owners (investor-owned utilities such as SCE) 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.

Table 2-2 identifies SCE's specific proportional shares of electricity sources in 2016. As indicated in Table 2-2, shows the 2016 SCE Power Mix has renewable energy at 25% of the overall energy resources. Geothermal is remaining steady at 4%. Wind power is remaining steady at 9%, decreasing from 10% in 2014. Large hydro is at 10%, having increased from 3% in 2014. Solar energy is at 8% having increased from 4% in 2014. Biomass and waste has increased to 2% from 1% in 2014. Coal is at 4% having increased from 0%, in 2014 and having decreased significantly from 6% in 2013 and from 7% in 2012. Natural gas is at 37% having increased from 27%, in 2014 and 28% in 2013.

TABLE 2-2: SCE 2014 POWER CONTENT MIX

Energy Resources	2016 SCE Power Mix
<i>Eligible Renewable</i>	25%
Biomass & waste	2%
Geothermal	4%
Small Hydroelectric	2%
Solar	8%
Wind	9%
<i>Coal</i>	4%
<i>Large Hydroelectric</i>	10%
<i>Natural Gas</i>	37%
<i>Nuclear</i>	9%
<i>Other</i>	0%
Unspecified Sources of power*	15%
Total	100%

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

2.3 NATURAL GAS

Natural gas would be provided to the Project by The Gas Company (Southern California Gas, SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

"The California Public Utilities Commission (PUC) 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.

The vast majority of California’s natural gas customers are residential and small commercial customers, referred to as “core” customers, who accounted for approximately 32% of the natural gas delivered by California utilities in 2012. Large consumers, like electric generators and industrial customers, referred to as “noncore” customers, accounted for approximately 68% of the natural gas delivered by California utilities in 2012.

The PUC regulates the California utilities’ natural gas rates and natural gas services, including in-state transportation over the utilities’ transmission and distribution pipeline systems, storage, procurement, metering and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. In 2012, California customers received 35% of their natural gas supply from basins located in the Southwest, 16% from Canada, 40% from the Rocky Mountains, and 9% from basins located within California. California gas utilities may soon also begin receiving biogas into their pipeline systems.

Natural gas from out-of-state production basins is delivered into California via the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California consumers are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, the Ruby Pipeline, Questar Southern Trails and Mojave Pipeline. 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, the PUC often participates in FERC regulatory proceedings to represent the interests of California natural gas consumers.

Most of the natural gas transported via the interstate pipelines, as well as some of the California-produced natural gas, is delivered into the PG&E and SoCalGas intrastate natural gas transmission pipeline systems (commonly referred to as California’s “backbone” natural gas pipeline system). Natural gas on the utilities’ backbone pipeline systems is then delivered into the local transmission and distribution pipeline systems, or to natural gas storage fields. Some large noncore customers take natural gas directly off the high pressure backbone pipeline systems, while core customers and other noncore customers take natural gas off the utilities’ distribution pipeline systems. The PUC has regulatory jurisdiction over 150,000 miles of utility-owned natural gas pipelines, which transported 82% of the total amount of natural gas delivered to California’s gas consumers in 2012.

SDG&E and Southwest Gas’ southern division are wholesale customers of SoCalGas, and currently receive all of their natural gas from the SoCalGas system (Southwest Gas also provides natural gas distribution service in the Lake Tahoe area). Some other municipal wholesale customers are the cities of Palo Alto, Long Beach, and Vernon, which are not regulated by the CPUC.

Some of the natural gas delivered to California customers may be delivered directly to them without being transported over the regulated utility systems. For example, the Kern

River/Mojave pipeline system can deliver natural gas directly to some large customers, “bypassing” the utilities’ systems. Much of California-produced natural gas is also delivered directly to large consumers.

PG&E and SoCalGas own and operate several natural gas storage fields that are located in northern and southern California. 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 natural gas demand and allow California natural gas customers to secure natural gas supplies more efficiently. (A portion of the Gill Ranch facility is owned by PG&E).

California’s regulated utilities do not own any natural gas production facilities. All of the natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the FERC in the mid-1980’s and is determined by “market forces.” However, the PUC decides whether California’s utilities have taken reasonable steps in order to minimize the cost of natural gas purchased on behalf of their core customers.” (11)

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 PUC oversees utility purchases and transmission of natural gas to ensure reliable and affordable natural gas deliveries to existing and new consumers throughout the State.

2.4 TRANSPORTATION ENERGY RESOURCES

The Project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. As of 2012, there are more than 27 million registered vehicles in California, and those vehicles (as noted previously) consume an estimated 18 billion gallons of fuel each year. Gasoline (and other vehicle fuels) are commercially-provided commodities, and would be available to the Project patrons and employees via commercial outlets.

California’s on-road transportation system includes 170,000 miles of highways and major roadways, more than 26 million passenger vehicles and light trucks, and almost 1 million medium- and heavy-duty vehicles. The most recent data available (2012) shows the transportation sector emits 36 percent of the total greenhouse gases in the state and about 83 percent of smog-forming oxides of nitrogen (NOx). While gasoline consumption has been declining since 2008 it is still by far the dominant fuel. Petroleum comprises about 92 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels. Nearly 18 billion gallons of on-highway fuel are burned each year, including 14.5 billion gallons of gasoline (including ethanol) and 3.4 billion gallons of diesel fuel (including biodiesel and renewable diesel). In 2013, Californians also used 174 million therms of natural gas as a transportation fuel, or the equivalent of 142 million gallons of gasoline, and 841,345 megawatt hours of electricity for transportation, or about the equivalent of 25 million gallons of gasoline.

For 2013, combined alternative fuel use in California was slightly more than 7 percent of total transportation fuel use.

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3 REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below. Project consistency with applicable federal and state regulations is also presented in *italicized* text.

3.1 FEDERAL REGULATIONS

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (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. *Transportation and access to the Project site is provided primarily 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.*

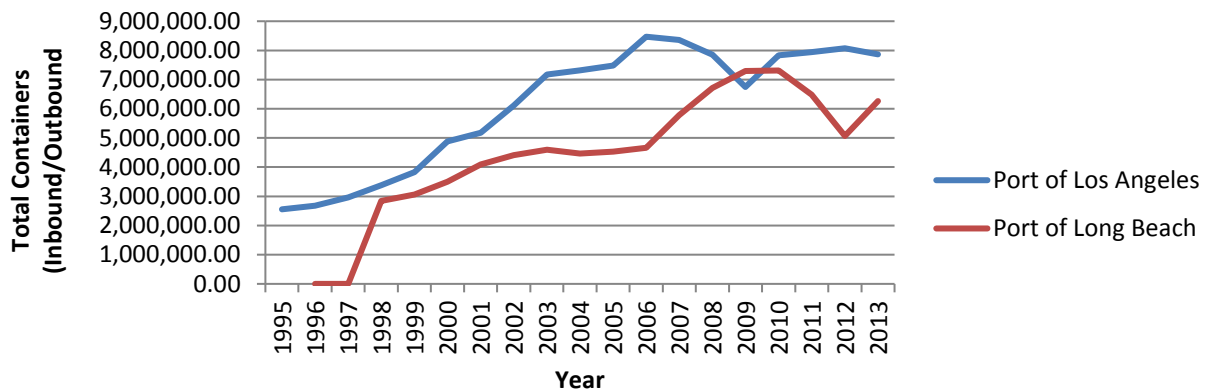
The Transportation Equity Act for the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety. *The Project site is located along major transportation corridors with proximate access to the Interstate freeway system. The site selected for the Project facilitates access, acts to reduce vehicle miles traveled, takes advantage of existing infrastructure systems, and promotes land use compatibilities through collocation of similar uses. The Project supports the strong planning processes emphasized under TEA-21. The Project is therefore consistent with, and would not otherwise interfere with, nor obstruct implementation of TEA-21.*

As shown on Exhibit 3-A, data from both the Port of Los Angeles and the Port of Long Beach shows that the receiving and shipping of containers have had a stable trend since the recession that hit in 2007 (12) (13). Therefore, truck transport from the ports is relatively stable and a Project of this type would not be increasing the amount of truck trips and consequently VMT than what would normally occur within the basin. As such, the estimation of the Cajon Boulevard Warehouse Project's vehicular-source emissions is likely overstated in that no credit for, or reduction in, emissions is assumed based on diversion of existing trips.

Additionally, the Southern California Association of Governments' (SCAG's) 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) includes information on goods movement that clearly illustrates that of the port-related trips within the SCAG region, more than 85% have an origin or destination within Los Angeles County. As a result, the Project would serve to meet this demand and not be expected to increase trips or VMT in the air basin.

EXHIBIT 3-A: PORT OF LOS ANGELES/PORT OF LONG BEACH CONTAINER COUNTS



3.2 CALIFORNIA REGULATIONS

Integrated Energy Policy Report

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

The 2014 Integrated Energy Policy Report Update (2014 IEPR Update) focused on next steps for transforming transportation energy use in California. The 2014 Integrated Energy Policy Report Update provides the results of the California Energy Commission's assessments of a variety of energy issues currently facing California. These issues include the role of transportation in meeting state climate, air quality, and energy goals; the Alternative and Renewable Fuel and

Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure deployment; measuring success and defining metrics within the Alternative and Renewable Fuel and Vehicle Technology Program; market transformation benefits resulting from Alternative and Renewable Fuel and Vehicle Technology Program investments; the state of hydrogen, zero-emission vehicle, biofuels, and natural gas technologies over the next 10 years; transportation linkages with natural gas infrastructure; evaluation of methane emissions from the natural gas system and implications for the transportation system; changing trends in California's sources of crude oil; the increasing use of crude-by-rail in California; the integration of environmental information in renewable energy planning processes; an update on electricity reliability planning for Southern California energy infrastructure; and an update to the electricity demand forecast.

The 2015 Integrated Energy Policy Report (2015 IEPR) was published in February 2016 and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2015 IEPR focuses on a variety of topics such as building efficiency standards; benchmarking under the Assembly Bill 758 Action Plan; the impact of drought on California's energy system; achieving 50 percent renewables by 2030; Renewable Action Plan status; the California Energy Demand Forecast; methane emissions; climate change vulnerability and adaptation options; an update on electricity infrastructure in Southern California; the California Independent System Operator energy imbalance market; and an update on California's nuclear plants.

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access. *The Project site is located along major transportation corridors with proximate access to the Interstate freeway system. The site selected for the Project facilitates access, acts to reduce vehicle miles traveled, takes advantage of existing infrastructure systems, and promotes land use compatibilities through the introduction of commercial uses on a commercially-designated site. 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.*

California Code Title 24, Part 6, Energy Efficiency Standards

California Code Title 24, Part 6 (also referred to as the California Energy Code), was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption. To these ends, the California Energy Code provides energy efficiency standards for residential and nonresidential buildings. According to the CEC,

the Energy Commission's energy efficiency standards have saved Californians more than \$74 billion in reduced electricity bills since 1977. **Invalid source specified.**

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The newest 2016 version of Title 24 was adopted by the California Energy Commission (CEC) and became effective on January 1, 2017.

The CEC indicates that the 2016 Title 24 standards will reduce energy consumption by 5 percent for nonresidential buildings above that achieved by the 2013 Title 24 (CEC 2015).

The 2016 Energy Efficiency Standards in their entirety may be reviewed at: <http://www.energy.ca.gov/title24/2016standards/>. The 2016 Energy Efficiency Standards may also be reviewed at the California Energy Commission, 1516 Ninth Street, MS-37, Sacramento, CA 95814-5512. The Project would be designed, constructed and operated so as to meet or exceed incumbent Title 24 Energy Efficiency Standards. On this basis, the Project is determined to be consistent with, and would not interfere with, nor otherwise obstruct implementation of Title 24 Energy Efficiency Standards.

4 PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

4.1 EVALUATION CRITERIA

In compliance with Appendix F of the *State CEQA Guidelines*, (14) this report analyzes the project's anticipated energy use to determine if the Project would:

- Result in the wasteful, inefficient or unnecessary consumption of energy; or
- Result in a substantial increase in demand or transmission service, resulting in the need for new or expanded sources of energy supply or new or expanded energy delivery systems or infrastructure.

In addition, Appendix F of the State CEQA Guidelines 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.

4.2 METHODOLOGY

Information from the CalEEMod 2016.3.2 outputs for the Cajon Boulevard Warehouse Air Quality Impact Analysis, Urban Crossroads (2017) (15) was utilized in this analysis, detailing Project related construction equipment, transportation energy demands, and facility energy demands. These outputs can be referenced in Appendix 3.1.

4.3 CONSTRUCTION ENERGY DEMANDS

4.3.1 CONSTRUCTION EQUIPMENT ELECTRICITY USAGE ESTIMATES

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. Based on the 2015 National Construction Estimator, Richard Pray (2015) (16), the typical power cost per 1,000 square feet of building construction per month is estimated to be \$2.28. For the Cajon Boulevard Warehouse development, the Project plans to develop 321,496 square feet of building space over the course of 8 months. Based on Table 4-1, the total power cost of the on-site electricity usage during the construction of the proposed Project is estimated to be approximately \$5,864.09. Additionally, as of June 1, 2016, SCE's general service rate schedule (GS-1) for an industrial land use is \$.08 per kWh of electricity (17). As shown on Table 4-2, the total electricity usage from on-site Project construction related activities is estimated to be approximately 73,301 kWh.

TABLE 4-1: PROJECT CONSTRUCTION POWER COST

Power Cost (per 1,000 SF of building per month of construction)	Total Building Size (1,000 SF)	Construction Duration (months)	Total Project Construction Power Cost
\$2.28	321.496	8	\$5,864.09

TABLE 4-2: PROJECT CONSTRUCTION ELECTRICITY USAGE

Cost per kWh	Total Project Construction Electricity Usage (kWh)
\$0.08	73,301

¹Assumes the Project will be under the GS-1 General Industrial service rate under SCE

4.3.2 CONSTRUCTION EQUIPMENT FUEL ESTIMATES

Fuel consumed by construction equipment would be the primary energy resource expended over the course of Project construction. Project construction activity timeline estimates, construction equipment schedules, equipment power ratings, load factors, and associated fuel consumption estimates are presented in Table 4-3. Eight-hour daily use of all equipment is assumed. The aggregate fuel consumption rate for all equipment is estimated at 18.5 hp-hr-gal., obtained from California Air Resources Board (CARB) 2013 Emissions Factors Tables and cited fuel consumption rate factors presented in Table D-24 of the Moyer guidelines. (18) For the purposes of this analysis, that the calculations are based on all construction equipment being diesel-powered which is standard practice consistent with industry standards. Diesel fuel would be supplied by existing commercial fuel providers serving the County and region.

As presented in Table 4-3, Project construction activities would consume an estimated 47,653 gallons of diesel fuel. Project construction would represent a “single-event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 4-3: CONSTRUCTION EQUIPMENT FUEL CONSUMPTION ESTIMATES

Activity/Duration	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption (gal. diesel fuel)
Site Preparation (10 days)	Crawler Tractors	212	4	8	0.43	2,917	1,577
	Rubber Tired Dozers	247	3	8	0.40	2,371	1,282
Grading (30 days)	Crawler Tractors	212	2	8	0.43	1,459	2,365
	Excavators	158	2	8	0.38	961	1,558
	Graders	187	1	8	0.41	613	995
	Rubber Tired Dozers	247	1	8	0.40	790	1,282
	Scrapers	367	2	8	0.48	2,819	4,571
Building Construction (150 days)	Cranes	231	1	8	0.29	536	4,345
	Crawler Tractors	212	3	8	0.43	2,188	17,739
	Forklifts	89	3	8	0.20	427	3,464
	Generator Sets	84	1	8	0.74	497	4,032
	Welders	46	1	8	0.45	166	1,343
Paving (20 days)	Pavers	130	2	8	0.42	874	944
	Paving Equipment	132	2	8	0.36	760	822
	Rollers	80	2	8	0.38	486	526
Architectural Coating (50 days)	Air Compressors	78	1	8	0.48	300	810
CONSTRUCTION FUEL DEMAND (gallons diesel fuel)							47,653

4.3.3 CONSTRUCTION WORKER FUEL ESTIMATES

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 838,488 VMT (19). Data regarding Project related construction worker trips were based on CalEEMod 2016.3.2 model defaults utilized within the AQIA.

Vehicle fuel efficiencies for LDA were estimated using information generated within the 2014 version of the Emissions FACTor model (EMFAC) developed by the Air Resources Board (ARB). EMFAC 2014 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 ARB to project changes in future emissions from on-road mobile sources (20). EMFAC 2014 was run for the LDA vehicle class within the California sub-area for a 2019 calendar year. Data from EMFAC 2014 is shown in Appendix 3.2.

As generated by EMFAC 2014, an aggregated fuel economy of LDAs ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 27.52 miles per gallon (MPG). Table 4-4 provides an estimated annual fuel consumption resulting from Project generated light duty autos related to construction worker trips. Based on Table 4-4, it is estimated that 21,089 gallons of fuel will be consumed related to construction worker trips after full construction of the proposed Project. Project construction worker trips would represent a “single-event” gasoline fuel demand and would not require on-going or permanent commitment of fuel resources for this purpose.

TABLE 4-4: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES

Construction Activity	Worker Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Site Preparation (10 days)	18	14.7	2,646	27.52	96
Grading (30 days)	20	14.7	8,820	27.52	320
Building Construction (150 days)	240	14.7	529,200	27.52	19,230
Paving (20 days)	15	14.7	4,410	27.52	160
Architectural Coating (50 days)	48	14.7	35,280	27.52	1,292
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION					21,089

4.3.4 CONSTRUCTION VENDOR/HAULING FUEL ESTIMATES

With respect to estimated VMT, the construction vendor/hauling trips would generate an estimated 194,580 VMT along area roadways (15). It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHD) and 50% are from heavy-heavy duty trucks (HHD). It is assumed that 100% of all hauling trips are from HHD. These assumptions are consistent with the

2016.3.2 CalEEMod defaults utilized within the Cajon Boulevard Warehouse Air Quality Impact Analysis. Vehicle fuel efficiencies for MHD and HHD trucks were estimated using information generated within EMFAC 2014. For purposes of this analysis, EMFAC 2014 was run for the MHD and HHD vehicle class within the California sub-area for a 2019 calendar year. Data from EMFAC 2014 is shown in Appendix 3.2.

As generated by EMFAC 2014, an aggregated fuel economy of MHD trucks ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 8.46 mpg. Additionally, HHD trucks are estimated to have a fuel efficiency of 5.78 mpg.

Table 4-5 and Table 4-6 shows the estimated fuel economy of MHD and HHD trucks accessing the Project site. Based on Table 4-5 and Table 4-6, fuel consumption from construction hauling and vendor trips (medium and heavy duty trucks) will total approximately 28,332 gallons. 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 4-5: CONSTRUCTION VENDOR FUEL CONSUMPTION ESTIMATES (MHD TRUCKS)¹

Construction Activity	Vendor Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Building Construction (150 days)	94	6.9	97,290	8.46	11,500

TABLE 4-6: CONSTRUCTION VENDOR/HAULING FUEL CONSUMPTION ESTIMATES (HHD TRUCKS)²

Construction Activity	Vendor/Hauling Trips/ Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Building Construction (150 days)	94	6.9	97,290	5.78	16,832

4.3.5 CONSTRUCTION ENERGY EFFICIENCY/CONSERVATION MEASURES

The equipment used for Project construction would conform to CARB regulations and CA emissions standards and would evince related fuel efficiencies. 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

¹ Assumptions for the vendor trip length and vehicle miles traveled are consistent with 2013.2.2 model defaults utilized within the Cajon Boulevard Warehouse Air Quality Impact Analysis.

² Assumptions for the vendor trip length and vehicle miles traveled are consistent with 2013.2.2 model defaults utilized within the Cajon Boulevard Warehouse Air Quality Impact Analysis.

conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the Project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The Project would utilize construction contractors which practice compliance 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.

Additionally, certain incidental construction-source energy efficiencies would likely accrue through implementation of California regulations and best available control measures (BACM). More specifically, California Code of Regulations 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. To this end, "grading plans shall reference the requirement that a sign shall be posted on-site stating that construction workers need to shut off engines at or before five minutes of idling." In this manner, construction equipment operators are informed that engines are to be turned off at or prior to five minutes of idling. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Indirectly, construction energy efficiencies and energy conservation would be achieved for the proposed development through energy efficiencies realized from bulk purchase, transport and use of construction materials.

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

In general, the construction processes promote conservation and efficient use of energy by reducing raw materials demands, with related reduction in energy demands associated with raw materials extraction, transportation, processing and refinement. Use of materials in bulk reduces energy demands associated with preparation and transport of construction materials as 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.

4.3.6 SUMMARY

The estimated power cost of on-site electricity usage during the construction of the proposed Project is assumed to be around \$5,864.09. Additionally, based on the assumed power cost, it is

estimated that the total electricity usage during construction, after full Project build-out, is calculated to be around 73,301 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 47,653 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. Best available control measures inform construction equipment operators of this requirement. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Construction worker trips for full construction of the proposed Project would result in the estimated fuel consumption of 21,089 gallons of fuel. Additionally, fuel consumption from construction vendor trips (medium and heavy-duty trucks) will total approximately 28,332 gallons. Diesel fuel would be supplied by County and regional commercial vendors. Indirectly, construction energy efficiencies and energy conservation would be achieved through the use of bulk purchases, transport and use of construction materials. The 2015 IEPR released by the California Energy Commission has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements (21). As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

4.4 OPERATIONAL ENERGY DEMANDS

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

4.4.1 TRANSPORTATION ENERGY DEMANDS

Energy that would be consumed by Project-generated traffic is a function of total VMT and estimated vehicle fuel economies of vehicles accessing the Project site.

LIGHT DUTY AUTOS

With respect to estimated VMT, and based on the trip frequency and trip length methodologies cited in the Project's Air Quality Impact Analysis, the Project would generate an estimated 1,989,810 annual VMT along area roadways for all passenger cars with full build-out of the Project (15). As generated by EMFAC 2014, an aggregated fuel economy of LDAs ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 27.52 mpg. Table

4-7 provides an estimated range of annual fuel consumption resulting from Project generated LDAs. Based on Table 4-7, it is estimated that 72,304 gallons of fuel will be consumed from Project generated LDA trips.

TABLE 4-7: PROJECT-GENERATED PASSENGER CAR TRAFFIC ANNUAL FUEL CONSUMPTION

Annual Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Annual Fuel Consumption (gallons)
1,989,810	27.52	72,304

LIGHT-HEAVY DUTY TRUCKS

With respect to estimated VMT, and based on the trip frequency and trip length methodologies cited in the Project's Air Quality Impact Analysis, the Project would generate an estimated 271,497 annual VMT along area roadways for all LHD trucks with full build-out of the Project (15). As generated by EMFAC 2014, an aggregated fuel economy of LHD trucks ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 13.84 mpg. Table 4-8 provides an estimated range of annual fuel consumption resulting from Project generated LHD trucks. Based on Table 4-8, it is estimated that 19,617 gallons of fuel will be consumed from Project generated LHD truck trips.

TABLE 4-8: PROJECT-GENERATED LHD TRUCK TRAFFIC ANNUAL FUEL CONSUMPTION

Annual Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Annual Fuel Consumption (gallons)
271,497	13.84	19,617

MEDIUM-HEAVY DUTY TRUCKS

With respect to estimated VMT, and based on the trip frequency and trip length methodologies cited in the Project's Air Quality Impact Analysis, the Project would generate an estimated 337,031 annual VMT along area roadways for all MHD trucks with full build-out of the Project (15). As generated by EMFAC 2014, an aggregated fuel economy of MHD trucks ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 8.46 mpg. Table 4-9 provides an estimated range of annual fuel consumption resulting from Project generated MHD trucks. Based on Table 4-9, it is estimated that 39,838 gallons of fuel will be consumed from Project generated MHD truck trips.

TABLE 4-9: PROJECT-GENERATED MHD TRUCK TRAFFIC ANNUAL FUEL CONSUMPTION

Annual Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Annual Fuel Consumption (gallons)
337,031	8.46	39,838

HEAVY-HEAVY DUTY TRUCKS

With respect to estimated VMT, and based on the trip frequency and trip length methodologies cited in the Project’s Air Quality Impact Analysis, the Project would generate an estimated 1,020,454 annual VMT along area roadways for all HHD trucks with full build-out of the Project (15). As generated by EMFAC 2014, an aggregated fuel economy of HHD trucks ranging from model year 1974 to model year 2019 are estimated to have a fuel efficiency of 5.78 mpg. Table 4-10 provides an estimated range of annual fuel consumption resulting from Project generated HHD trucks. Based on Table 4-10, it is estimated that 176,549 gallons of fuel will be consumed from Project generated HHD truck trips.

TABLE 4-10: PROJECT-GENERATED HHD TRUCK TRAFFIC ANNUAL FUEL CONSUMPTION

Annual Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Annual Fuel Consumption (gallons)
1,020,454	5.78	176,549

As summarized on Table 4-11, the Project will result in 3,618,792 annual VMT and an estimated annual fuel consumption of 308,308 gallons of fuel.

TABLE 4-11: PROJECT-GENERATED TRAFFIC ANNUAL FUEL CONSUMPTION (ALL VEHICLES)

Vehicle Type	Annual Miles Traveled	Estimated Annual Fuel Consumption (gallons)
Light Duty Autos	1,989,810	72,304
LHD Trucks	271,497	19,617
MHD Trucks	337,031	39,838
HHD Trucks	1,020,454	176,549
Total (All Vehicles)	3,618,792	308,308

4.4.2 FACILITY ENERGY DEMANDS

Project building operations and Project site maintenance activities would result in the consumption of natural gas and electricity. Natural gas would be supplied to the Project by The Gas Company; electricity would be supplied to the Project by Southern California Edison. Annual natural gas and electricity demands of the Project are summarized in Table 4-12.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting (22). Non-building energy use, or “plug-in” energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

TABLE 4-12: PROJECT ANNUAL OPERATIONAL ENERGY DEMAND SUMMARY

Natural Gas Demand	kBTU/year
Parking Lot	0
Unrefrigerated Warehouse – No Rail	652,637
Total Project Natural Gas Demand	652,637

Electricity Demand	kWh/year
Parking Lot	87,220
Unrefrigerated Warehouse – No Rail	758,731
Total Project Electricity Demand	845,951

4.4.3 OPERATIONAL ENERGY EFFICIENCY/CONSERVATION MEASURES

Energy efficient/energy conserving design features and operational programs that would be implemented under the Project are summarized below. Also noted in the following discussions, 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 Code).

The Project would also not result in a substantial increase in demand or transmission service, resulting in the need for new or expanded sources of energy supply or new or expanded energy delivery systems or infrastructure.

Enhanced Vehicle Fuel Efficiencies

Estimated annual fuel consumption estimates presented previously in Table 4-11 represent likely potential maximums that would occur in 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.

4.5 SUMMARY

4.5.1 TRANSPORTATION ENERGY DEMANDS

Annual vehicular trips and related VMT generated by the Project would result in an estimated 72,304 gallons of fuel consumption per year for LDAs. Additionally, the Project would result in an estimated 19,617 gallons of fuel consumption per year for LHD trucks. In regards to MHD trucks, the Project would result in an estimated 39,838 gallons of fuel consumption per year. For HHD trucks an estimated 176,549 gallons of fuel consumption per year is estimated for the year 2019. The total estimated annual fuel consumption from Project generated VMT would result in a fuel demand 308,308 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 warehouse uses of similar scale and configuration, as reflected respectively in the Institute of Transportation Engineers (ITE) Trip

Generation Manual (10th Ed., 2017); and California Emissions Estimator Model (CalEEMod) v2016.3.2. That is, the Project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption.

Enhanced fuel economies realized pursuant to federal and state regulatory actions, and related transition of LDVs and HDVs to alternative energy sources (e.g., electricity, natural gas, bio fuels, 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 also implement sidewalks, facilitating and encouraging pedestrian access. Facilitating pedestrian and bicycle access would reduce VMT and associated energy consumption. As supported by the preceding discussions, Project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

4.5.2 FACILITY ENERGY DEMANDS

Project facility operational energy demands are estimated at: 652,637 kBtu/year of natural gas; and 845,951 kWh/year of electricity. Natural gas would be supplied to the Project by The Gas Company; electricity would be supplied by Southern California Edison. The Project proposes conventional warehouse uses reflecting contemporary energy efficient/energy conserving designs and operational programs. Uses proposed by the Project are not inherently energy intensive, and the Project energy demands in total would be comparable to, or less than, other warehouse projects of similar scale and configuration.

Various energy conserving features and operational programs that would be realized under the Project are discussed previously. Based on the preceding, Project facilities energy demands and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

4.6 CONCLUSIONS

As supported by the preceding analyses, Project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. Further, the energy demands of the Project can be accommodated within the context of available resources and energy delivery systems. 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 conservation goals within the State of California. Notwithstanding, the Project proposes warehousing land use and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

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6 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Cajon Boulevard Warehouse Project. The information contained in this air quality impact report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5987.

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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 – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

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APPENDIX 3.1:
CALEEMOD EMISSIONS MODEL OUTPUTS

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

Cajon Boulevard Warehouse (Unmitigated)
San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	321.50	1000sqft	7.38	321,496.00	0
Parking Lot	623.00	Space	5.61	249,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

Project Characteristics -

Land Use -

Construction Phase - Construction Schedule adjusted as per the Client.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment - Crawler Tractors used in lieu of Tractors/Loaders/Backhoes.

Off-road Equipment -

Off-road Equipment - Hours are based on an 8-hour workday.

Grading -

Vehicle Trips - Construction Run Only.

Energy Use - Construction Run Only.

Water And Wastewater - Construction Run Only.

Solid Waste - Construction Run Only.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	300.00	150.00
tblConstructionPhase	PhaseEndDate	1/14/2020	4/23/2019
tblConstructionPhase	PhaseEndDate	11/19/2019	4/23/2019
tblConstructionPhase	PhaseEndDate	12/17/2019	4/23/2019
tblConstructionPhase	PhaseStartDate	12/18/2019	2/13/2019
tblConstructionPhase	PhaseStartDate	11/20/2019	3/27/2019
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	302.21	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	74,346,875.00	0.00

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.3195	3.3530	1.8498	4.6900e-003	0.3625	0.1321	0.4945	0.1376	0.1226	0.2603	0.0000	428.1206	428.1206	0.0838	0.0000	430.2161
2019	1.7764	2.3135	1.5566	4.2800e-003	0.1454	0.0897	0.2351	0.0392	0.0840	0.1232	0.0000	388.0981	388.0981	0.0595	0.0000	389.5865
Maximum	1.7764	3.3530	1.8498	4.6900e-003	0.3625	0.1321	0.4945	0.1376	0.1226	0.2603	0.0000	428.1206	428.1206	0.0838	0.0000	430.2161

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.3195	3.3530	1.8498	4.6900e-003	0.2118	0.1321	0.3439	0.0727	0.1226	0.1953	0.0000	428.1203	428.1203	0.0838	0.0000	430.2158
2019	1.7764	2.3135	1.5566	4.2800e-003	0.1454	0.0897	0.2351	0.0392	0.0840	0.1232	0.0000	388.0979	388.0979	0.0595	0.0000	389.5863
Maximum	1.7764	3.3530	1.8498	4.6900e-003	0.2118	0.1321	0.3439	0.0727	0.1226	0.1953	0.0000	428.1203	428.1203	0.0838	0.0000	430.2158

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.66	0.00	20.65	36.74	0.00	16.94	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2018	10-31-2018	2.3390	2.3390
2	11-1-2018	1-31-2019	1.9669	1.9669
3	2-1-2019	4-30-2019	3.4476	3.4476
		Highest	3.4476	3.4476

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.3315	1.1000e-004	0.0122	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.3315	1.1000e-004	0.0122	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2018	8/14/2018	5	10	
2	Grading	Grading	8/15/2018	9/25/2018	5	30	
3	Building Construction	Building Construction	9/26/2018	4/23/2019	5	150	
4	Architectural Coating	Architectural Coating	2/13/2019	4/23/2019	5	50	
5	Paving	Paving	3/27/2019	4/23/2019	5	20	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 105

Acres of Paving: 5.61

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 482,244; Non-Residential Outdoor: 160,748; Striped Parking Area: 14,952 (Architectural Coating – sqft)

OffRoad Equipment

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	8.00	78	0.48
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Crawler Tractors	3	8.00	212	0.43
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	240.00	94.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	48.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1009	0.0000	0.1009	0.0508	0.0000	0.0508	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0303	0.3585	0.1188	2.9000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	26.0458	26.0458	8.1100e-003	0.0000	26.2485
Total	0.0303	0.3585	0.1188	2.9000e-004	0.1009	0.0156	0.1165	0.0508	0.0144	0.0652	0.0000	26.0458	26.0458	8.1100e-003	0.0000	26.2485

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.5000e-004	4.3800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9038	0.9038	3.0000e-005	0.0000	0.9046
Total	5.3000e-004	4.5000e-004	4.3800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9038	0.9038	3.0000e-005	0.0000	0.9046

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0394	0.0000	0.0394	0.0198	0.0000	0.0198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0303	0.3585	0.1188	2.9000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	26.0458	26.0458	8.1100e-003	0.0000	26.2485
Total	0.0303	0.3585	0.1188	2.9000e-004	0.0394	0.0156	0.0550	0.0198	0.0144	0.0342	0.0000	26.0458	26.0458	8.1100e-003	0.0000	26.2485

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.5000e-004	4.3800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9038	0.9038	3.0000e-005	0.0000	0.9046
Total	5.3000e-004	4.5000e-004	4.3800e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9038	0.9038	3.0000e-005	0.0000	0.9046

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1460	0.0000	0.1460	0.0557	0.0000	0.0557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0876	1.0691	0.5360	1.0700e-003		0.0436	0.0436		0.0401	0.0401	0.0000	97.9715	97.9715	0.0305	0.0000	98.7340
Total	0.0876	1.0691	0.5360	1.0700e-003	0.1460	0.0436	0.1896	0.0557	0.0401	0.0958	0.0000	97.9715	97.9715	0.0305	0.0000	98.7340

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7700e-003	1.4900e-003	0.0146	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.0127	3.0127	1.1000e-004	0.0000	3.0154
Total	1.7700e-003	1.4900e-003	0.0146	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.0127	3.0127	1.1000e-004	0.0000	3.0154

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0569	0.0000	0.0569	0.0217	0.0000	0.0217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0876	1.0691	0.5360	1.0700e-003		0.0436	0.0436		0.0401	0.0401	0.0000	97.9714	97.9714	0.0305	0.0000	98.7339
Total	0.0876	1.0691	0.5360	1.0700e-003	0.0569	0.0436	0.1005	0.0217	0.0401	0.0618	0.0000	97.9714	97.9714	0.0305	0.0000	98.7339

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7700e-003	1.4900e-003	0.0146	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.0127	3.0127	1.1000e-004	0.0000	3.0154
Total	1.7700e-003	1.4900e-003	0.0146	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.0127	3.0127	1.1000e-004	0.0000	3.0154

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1371	1.4784	0.6809	1.4800e-003		0.0695	0.0695		0.0649	0.0649	0.0000	132.8177	132.8177	0.0359	0.0000	133.7155
Total	0.1371	1.4784	0.6809	1.4800e-003		0.0695	0.0695		0.0649	0.0649	0.0000	132.8177	132.8177	0.0359	0.0000	133.7155

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3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4038	0.0918	8.8000e-004	0.0205	2.7800e-003	0.0232	5.9000e-003	2.6500e-003	8.5600e-003	0.0000	84.2193	84.2193	6.1400e-003	0.0000	84.3727
Worker	0.0489	0.0412	0.4033	9.2000e-004	0.0908	6.4000e-004	0.0914	0.0241	5.9000e-004	0.0247	0.0000	83.1498	83.1498	3.0200e-003	0.0000	83.2254
Total	0.0622	0.4450	0.4951	1.8000e-003	0.1112	3.4200e-003	0.1147	0.0300	3.2400e-003	0.0333	0.0000	167.3691	167.3691	9.1600e-003	0.0000	167.5982

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1371	1.4784	0.6809	1.4800e-003		0.0695	0.0695		0.0649	0.0649	0.0000	132.8176	132.8176	0.0359	0.0000	133.7153
Total	0.1371	1.4784	0.6809	1.4800e-003		0.0695	0.0695		0.0649	0.0649	0.0000	132.8176	132.8176	0.0359	0.0000	133.7153

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3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0133	0.4038	0.0918	8.8000e-004	0.0205	2.7800e-003	0.0232	5.9000e-003	2.6500e-003	8.5600e-003	0.0000	84.2193	84.2193	6.1400e-003	0.0000	84.3727
Worker	0.0489	0.0412	0.4033	9.2000e-004	0.0908	6.4000e-004	0.0914	0.0241	5.9000e-004	0.0247	0.0000	83.1498	83.1498	3.0200e-003	0.0000	83.2254
Total	0.0622	0.4450	0.4951	1.8000e-003	0.1112	3.4200e-003	0.1147	0.0300	3.2400e-003	0.0333	0.0000	167.3691	167.3691	9.1600e-003	0.0000	167.5982

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1476	1.6069	0.7754	1.7400e-003		0.0736	0.0736		0.0687	0.0687	0.0000	153.8541	153.8541	0.0418	0.0000	154.8978
Total	0.1476	1.6069	0.7754	1.7400e-003		0.0736	0.0736		0.0687	0.0687	0.0000	153.8541	153.8541	0.0418	0.0000	154.8978

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.4446	0.0963	1.0200e-003	0.0240	2.7600e-003	0.0268	6.9300e-003	2.6400e-003	9.5600e-003	0.0000	97.8718	97.8718	7.0400e-003	0.0000	98.0479
Worker	0.0521	0.0425	0.4187	1.0400e-003	0.1066	7.3000e-004	0.1073	0.0283	6.7000e-004	0.0290	0.0000	94.2903	94.2903	3.1100e-003	0.0000	94.3682
Total	0.0661	0.4871	0.5151	2.0600e-003	0.1306	3.4900e-003	0.1341	0.0352	3.3100e-003	0.0385	0.0000	192.1621	192.1621	0.0102	0.0000	192.4161

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1476	1.6069	0.7754	1.7400e-003		0.0736	0.0736		0.0687	0.0687	0.0000	153.8539	153.8539	0.0418	0.0000	154.8976
Total	0.1476	1.6069	0.7754	1.7400e-003		0.0736	0.0736		0.0687	0.0687	0.0000	153.8539	153.8539	0.0418	0.0000	154.8976

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3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.4446	0.0963	1.0200e-003	0.0240	2.7600e-003	0.0268	6.9300e-003	2.6400e-003	9.5600e-003	0.0000	97.8718	97.8718	7.0400e-003	0.0000	98.0479
Worker	0.0521	0.0425	0.4187	1.0400e-003	0.1066	7.3000e-004	0.1073	0.0283	6.7000e-004	0.0290	0.0000	94.2903	94.2903	3.1100e-003	0.0000	94.3682
Total	0.0661	0.4871	0.5151	2.0600e-003	0.1306	3.4900e-003	0.1341	0.0352	3.3100e-003	0.0385	0.0000	192.1621	192.1621	0.0102	0.0000	192.4161

3.5 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8800e-003	0.0612	0.0614	1.0000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	8.5109	8.5109	7.2000e-004	0.0000	8.5288
Total	1.5337	0.0612	0.0614	1.0000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	8.5109	8.5109	7.2000e-004	0.0000	8.5288

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.5 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4400e-003	5.2500e-003	0.0517	1.3000e-004	0.0132	9.0000e-005	0.0133	3.4900e-003	8.0000e-005	3.5800e-003	0.0000	11.6408	11.6408	3.8000e-004	0.0000	11.6504
Total	6.4400e-003	5.2500e-003	0.0517	1.3000e-004	0.0132	9.0000e-005	0.0133	3.4900e-003	8.0000e-005	3.5800e-003	0.0000	11.6408	11.6408	3.8000e-004	0.0000	11.6504

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5248					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8800e-003	0.0612	0.0614	1.0000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	8.5108	8.5108	7.2000e-004	0.0000	8.5288
Total	1.5337	0.0612	0.0614	1.0000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	8.5108	8.5108	7.2000e-004	0.0000	8.5288

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.5 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4400e-003	5.2500e-003	0.0517	1.3000e-004	0.0132	9.0000e-005	0.0133	3.4900e-003	8.0000e-005	3.5800e-003	0.0000	11.6408	11.6408	3.8000e-004	0.0000	11.6504
Total	6.4400e-003	5.2500e-003	0.0517	1.3000e-004	0.0132	9.0000e-005	0.0133	3.4900e-003	8.0000e-005	3.5800e-003	0.0000	11.6408	11.6408	3.8000e-004	0.0000	11.6504

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	7.3500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0219	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.6000e-004	6.4600e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4551	1.4551	5.0000e-005	0.0000	1.4563
Total	8.0000e-004	6.6000e-004	6.4600e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4551	1.4551	5.0000e-005	0.0000	1.4563

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	7.3500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0219	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.6000e-004	6.4600e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4551	1.4551	5.0000e-005	0.0000	1.4563
Total	8.0000e-004	6.6000e-004	6.4600e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4551	1.4551	5.0000e-005	0.0000	1.4563

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.541740	0.038987	0.178620	0.126833	0.019742	0.005671	0.017070	0.060066	0.001326	0.001715	0.006244	0.000823	0.001163
Unrefrigerated Warehouse-No Rail	0.541740	0.038987	0.178620	0.126833	0.019742	0.005671	0.017070	0.060066	0.001326	0.001715	0.006244	0.000823	0.001163

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Unmitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

7.0 Water Detail

7.1 Mitigation Measures Water

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Cajon Boulevard Warehouse (Unmitigated) - San Bernardino-South Coast County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

Cajon Boulevard Warehouse (Passenger Cars)
San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	321.50	1000sqft	7.38	321,496.00	0
Parking Lot	623.00	Space	5.61	249,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations (Truck) Run Only.

Off-road Equipment - Operations (Truck) Run Only.

Trips and VMT - Operations (Truck) Run Only.

Vehicle Trips - Trip Rates based on TIA by Urban Crossroads (2018)

Fleet Mix - Operations (Truck) Run Only.

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/11/2018	8/29/2018
tblFleetMix	HHD	0.06	0.00
tblFleetMix	LDA	0.54	1.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.6710e-003	0.00
tblFleetMix	MCY	6.2440e-003	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MH	1.1630e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.3260e-003	0.00
tblFleetMix	SBUS	8.2300e-004	0.00
tblFleetMix	UBUS	1.7150e-003	0.00
tblLandUse	LandUseSquareFeet	321,500.00	321,496.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.68	0.15
tblVehicleTrips	SU_TR	1.68	0.06
tblVehicleTrips	WD_TR	1.68	1.39

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	304.3652	304.3652	0.0118	2.9400e-003	305.5364
Mobile	0.0840	0.1654	1.7934	6.2800e-003	0.7414	4.1400e-003	0.7456	0.1968	3.8200e-003	0.2006	0.0000	568.4414	568.4414	0.0126	0.0000	568.7557
Waste						0.0000	0.0000		0.0000	0.0000	61.3459	0.0000	61.3459	3.6254	0.0000	151.9819
Water						0.0000	0.0000		0.0000	0.0000	23.5868	308.4481	332.0349	2.4353	0.0598	410.7496
Total	1.4190	0.1975	1.8325	6.4700e-003	0.7414	6.6100e-003	0.7480	0.1968	6.2900e-003	0.2031	84.9327	1,181.2780	1,266.2108	6.0852	0.0628	1,437.0487

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	304.3652	304.3652	0.0118	2.9400e-003	305.5364
Mobile	0.0840	0.1654	1.7934	6.2800e-003	0.7414	4.1400e-003	0.7456	0.1968	3.8200e-003	0.2006	0.0000	568.4414	568.4414	0.0126	0.0000	568.7557
Waste						0.0000	0.0000		0.0000	0.0000	61.3459	0.0000	61.3459	3.6254	0.0000	151.9819
Water						0.0000	0.0000		0.0000	0.0000	23.5868	308.4481	332.0349	2.4353	0.0598	410.7496
Total	1.4190	0.1975	1.8325	6.4700e-003	0.7414	6.6100e-003	0.7480	0.1968	6.2900e-003	0.2031	84.9327	1,181.2780	1,266.2108	6.0852	0.0628	1,437.0487

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/29/2018	8/29/2018	5	1	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 5.61

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0840	0.1654	1.7934	6.2800e-003	0.7414	4.1400e-003	0.7456	0.1968	3.8200e-003	0.2006	0.0000	568.4414	568.4414	0.0126	0.0000	568.7557
Unmitigated	0.0840	0.1654	1.7934	6.2800e-003	0.7414	4.1400e-003	0.7456	0.1968	3.8200e-003	0.2006	0.0000	568.4414	568.4414	0.0126	0.0000	568.7557

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	447.53	48.23	19.29	1,989,810	1,989,810
Total	447.53	48.23	19.29	1,989,810	1,989,810

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.541740	0.038987	0.178620	0.126833	0.019742	0.005671	0.017070	0.060066	0.001326	0.001715	0.006244	0.000823	0.001163
Unrefrigerated Warehouse-No Rail	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	269.5380	269.5380	0.0111	2.3000e-003	270.5023
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	269.5380	269.5380	0.0111	2.3000e-003	270.5023
NaturalGas Mitigated	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
NaturalGas Unmitigated	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	652637	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
Total		3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	652637	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
Total		3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	87220	27.7902	1.1500e-003	2.4000e-004	27.8896
Unrefrigerated Warehouse-No Rail	758731	241.7478	9.9800e-003	2.0600e-003	242.6127
Total		269.5380	0.0111	2.3000e-003	270.5023

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	87220	27.7902	1.1500e-003	2.4000e-004	27.8896
Unrefrigerated Warehouse-No Rail	758731	241.7478	9.9800e-003	2.0600e-003	242.6127
Total		269.5380	0.0111	2.3000e-003	270.5023

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Unmitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

7.0 Water Detail

7.1 Mitigation Measures Water

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	332.0349	2.4353	0.0598	410.7496
Unmitigated	332.0349	2.4353	0.0598	410.7496

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	74.3469 / 0	332.0349	2.4353	0.0598	410.7496
Total		332.0349	2.4353	0.0598	410.7496

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	74.3469 / 0	332.0349	2.4353	0.0598	410.7496
Total		332.0349	2.4353	0.0598	410.7496

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	61.3459	3.6254	0.0000	151.9819
Unmitigated	61.3459	3.6254	0.0000	151.9819

Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	302.21	61.3459	3.6254	0.0000	151.9819
Total		61.3459	3.6254	0.0000	151.9819

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	302.21	61.3459	3.6254	0.0000	151.9819
Total		61.3459	3.6254	0.0000	151.9819

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Cajon Boulevard Warehouse (Passenger Cars) - San Bernardino-South Coast County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

Cajon Boulevard Warehouse (Trucks)
San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	321.50	1000sqft	7.38	321,496.00	0
Parking Lot	623.00	Space	5.61	249,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operations (Truck) Run Only.

Off-road Equipment - Operations (Truck) Run Only.

Trips and VMT - Operations (Truck) Run Only.

Vehicle Trips - Trip Rates based on TIA by Urban Crossroads (2018)

Fleet Mix - Operations (Truck) Run Only.

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/11/2018	8/29/2018
tblFleetMix	HHD	0.06	0.63
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.02	0.17
tblFleetMix	LHD2	5.6710e-003	0.00
tblFleetMix	MCY	6.2440e-003	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MH	1.1630e-003	0.00
tblFleetMix	MHD	0.02	0.21
tblFleetMix	OBUS	1.3260e-003	0.00
tblFleetMix	SBUS	8.2300e-004	0.00
tblFleetMix	UBUS	1.7150e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	40.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.68	0.35
tblVehicleTrips	SU_TR	1.68	0.35
tblVehicleTrips	WD_TR	1.68	0.35

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	304.3652	304.3652	0.0118	2.9400e-003	305.5364
Mobile	0.2261	7.2029	1.6045	0.0238	0.7140	0.0529	0.7669	0.2011	0.0506	0.2517	0.0000	2,279.402 ₁	2,279.402 ₁	0.0821	0.0000	2,281.454 ₉
Waste						0.0000	0.0000		0.0000	0.0000	61.3459	0.0000	61.3459	3.6254	0.0000	151.9819
Water						0.0000	0.0000		0.0000	0.0000	23.5868	308.4481	332.0349	2.4353	0.0598	410.7496
Total	1.5611	7.2350	1.6435	0.0240	0.7140	0.0554	0.7694	0.2011	0.0531	0.2542	84.9327	2,892.238₇	2,977.171₅	6.1547	0.0628	3,149.747₈

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Energy	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	304.3652	304.3652	0.0118	2.9400e-003	305.5364
Mobile	0.2261	7.2029	1.6045	0.0238	0.7140	0.0529	0.7669	0.2011	0.0506	0.2517	0.0000	2,279.4021	2,279.4021	0.0821	0.0000	2,281.4549
Waste						0.0000	0.0000		0.0000	0.0000	61.3459	0.0000	61.3459	3.6254	0.0000	151.9819
Water						0.0000	0.0000		0.0000	0.0000	23.5868	308.4481	332.0349	2.4353	0.0598	410.7496
Total	1.5611	7.2350	1.6435	0.0240	0.7140	0.0554	0.7694	0.2011	0.0531	0.2542	84.9327	2,892.2387	2,977.1715	6.1547	0.0628	3,149.7478

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/29/2018	8/29/2018	5	1	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 5.61

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2261	7.2029	1.6045	0.0238	0.7140	0.0529	0.7669	0.2011	0.0506	0.2517	0.0000	2,279.4021	2,279.4021	0.0821	0.0000	2,281.4549
Unmitigated	0.2261	7.2029	1.6045	0.0238	0.7140	0.0529	0.7669	0.2011	0.0506	0.2517	0.0000	2,279.4021	2,279.4021	0.0821	0.0000	2,281.4549

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	111.88	111.88	111.88	1,628,982	1,628,982
Total	111.88	111.88	111.88	1,628,982	1,628,982

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	40.00	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.541740	0.038987	0.178620	0.126833	0.019742	0.005671	0.017070	0.060066	0.001326	0.001715	0.006244	0.000823	0.001163
Unrefrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.166700	0.000000	0.206900	0.626400	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	269.5380	269.5380	0.0111	2.3000e-003	270.5023
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	269.5380	269.5380	0.0111	2.3000e-003	270.5023
NaturalGas Mitigated	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
NaturalGas Unmitigated	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	652637	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
Total		3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	652637	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342
Total		3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8272	34.8272	6.7000e-004	6.4000e-004	35.0342

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	87220	27.7902	1.1500e-003	2.4000e-004	27.8896
Unrefrigerated Warehouse-No Rail	758731	241.7478	9.9800e-003	2.0600e-003	242.6127
Total		269.5380	0.0111	2.3000e-003	270.5023

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	87220	27.7902	1.1500e-003	2.4000e-004	27.8896
Unrefrigerated Warehouse-No Rail	758731	241.7478	9.9800e-003	2.0600e-003	242.6127
Total		269.5380	0.0111	2.3000e-003	270.5023

6.0 Area Detail

6.1 Mitigation Measures Area

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Unmitigated	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250
Total	1.3315	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0234	0.0234	6.0000e-005	0.0000	0.0250

7.0 Water Detail

7.1 Mitigation Measures Water

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	332.0349	2.4353	0.0598	410.7496
Unmitigated	332.0349	2.4353	0.0598	410.7496

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	74.3469 / 0	332.0349	2.4353	0.0598	410.7496
Total		332.0349	2.4353	0.0598	410.7496

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	74.3469 / 0	332.0349	2.4353	0.0598	410.7496
Total		332.0349	2.4353	0.0598	410.7496

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	61.3459	3.6254	0.0000	151.9819
Unmitigated	61.3459	3.6254	0.0000	151.9819

Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	302.21	61.3459	3.6254	0.0000	151.9819
Total		61.3459	3.6254	0.0000	151.9819

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	302.21	61.3459	3.6254	0.0000	151.9819
Total		61.3459	3.6254	0.0000	151.9819

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Cajon Boulevard Warehouse (Trucks) - San Bernardino-South Coast County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX 3.2:
EMFAC 2014 MODEL OUTPUTS

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Air District

Region: South Coast AQMD

Calendar Year: 2019

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption	Fuel Consumption Conver	Total Fuel Consumption	VMT	Total VMT	Miles per C	VehClass
South Coa:	2019	HHDT	Aggregate	Aggregate	GAS	786.203546	101372.0634	15730.36055	21.79522365	21795.22365	2,228,810.52	101372.0634	12,886,239.49	5.781667	HHD
South Coa:	2019	HHDT	Aggregate	Aggregate	DSL	91454.7043	12784867.43	0	2207.015296	2207015.296		12784867.43			
South Coa:	2019	LDA	Aggregate	Aggregate	GAS	6160893.34	214587151.5	38858552.16	7981.262911	7981262.911	8,037,921.21	214587151.5	221,211,350.76	27.52097	LDA
South Coa:	2019	LDA	Aggregate	Aggregate	DSL	54277.9585	2045537.76	336973.4464	56.65829924	56658.29924		2045537.76			
South Coa:	2019	LDA	Aggregate	Aggregate	ELEC	97028.2671	4578661.483	632265.5667	0	0		4578661.483			
South Coa:	2019	LDT1	Aggregate	Aggregate	GAS	527662.111	17835228.05	3203354.815	786.8614649	786861.4649	787,562.15	17835228.05	17,866,394.15	22.68569	LDT1
South Coa:	2019	LDT1	Aggregate	Aggregate	DSL	682.691652	18241.14001	3525.751013	0.700689059	700.6890586		18241.14001			
South Coa:	2019	LDT1	Aggregate	Aggregate	ELEC	412.781207	12924.96497	2496.638876	0	0		12924.96497			
South Coa:	2019	LDT2	Aggregate	Aggregate	GAS	2151192.07	80495452.27	13600347.35	4000.51232	4000512.32	4,005,598.48	80495452.27	80,636,472.18	20.13094	LDT2
South Coa:	2019	LDT2	Aggregate	Aggregate	DSL	3377.12149	141019.9118	21796.22616	5.086158685	5086.158685		141019.9118			
South Coa:	2019	LHDT1	Aggregate	Aggregate	GAS	129274.268	3788078.96	1925993.968	348.4022627	348402.2627	511,512.29	3788078.96	7,078,363.88	13.83811	LHD1
South Coa:	2019	LHDT1	Aggregate	Aggregate	DSL	90993.1102	3290284.923	1144578.857	163.1100293	163110.0293		3290284.923			
South Coa:	2019	LHDT2	Aggregate	Aggregate	GAS	25631.7563	888433.7268	381874.9771	87.95230075	87952.30075	134,598.83	888433.7268	2,376,303.92	17.65472	LHD2
South Coa:	2019	LHDT2	Aggregate	Aggregate	DSL	37456.3084	1487870.191	471153.2402	80.53983394	80539.83394		1487870.191			
South Coa:	2019	MCY	Aggregate	Aggregate	GAS	280215.017	1912290.732	560373.9904	54.05899134	54058.99134	54,058.99	1912290.732	51,480,488.72	952.3021	MCY
South Coa:	2019	MDV	Aggregate	Aggregate	GAS	1481013.94	49568197.98	9219388.995	3311.336643	3311336.643	3,349,733.02	49568197.98	49,568,197.98	14.79766	MDV
South Coa:	2019	MDV	Aggregate	Aggregate	DSL	20394.8703	820900.736	131055.6236	38.3963724	38396.3724		820900.736			
South Coa:	2019	MH	Aggregate	Aggregate	GAS	38857.7745	315735.6532	3887.331766	42.83165621	42831.65621	51,197.94	315735.6532	401,249.10	7.837212	MH
South Coa:	2019	MH	Aggregate	Aggregate	DSL	9999.03634	85513.44943	999.9036336	8.366285426	8366.285426		85513.44943			
South Coa:	2019	MHDT	Aggregate	Aggregate	GAS	19706.7073	982423.7175	394291.7996	140.8010017	140801.0017	965,620.11	982423.7175	8,166,386.37	8.457142	MHD
South Coa:	2019	MHDT	Aggregate	Aggregate	DSL	130893.731	7183962.653	0	824.8191053	824819.1053		7183962.653			
South Coa:	2019	OBUS	Aggregate	Aggregate	GAS	8185.91546	385772.9041	163783.7966	53.81320249	53813.20249	112,298.00	385772.9041	809,123.37	7.205145	OBUS
South Coa:	2019	OBUS	Aggregate	Aggregate	DSL	5064.23098	423350.4635	0	58.48479648	58484.79648		423350.4635			
South Coa:	2019	SBUS	Aggregate	Aggregate	GAS	2138.08637	82636.68528	8552.345484	7.299146427	7299.146427	35,382.68	82636.68528	284,866.91	8.051027	SBUS
South Coa:	2019	SBUS	Aggregate	Aggregate	DSL	5291.44322	202230.2278	0	28.08353227	28083.53227		202230.2278			
South Coa:	2019	UBUS	Aggregate	Aggregate	GAS	2261.93807	263318.6609	9047.752295	52.99065118	52990.65118	170,734.32	263318.6609	820,629.31	4.80647	UBUS
South Coa:	2019	UBUS	Aggregate	Aggregate	DSL	4790.60576	557310.6512	19162.42303	117.7436655	117743.6655		557310.6512			