



Knox Business Park

ENERGY ANALYSIS

COUNTY OF RIVERSIDE

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09348-07 Energy Analysis Report

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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
IEPR	Integrated Energy Policy Report
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	Knox Business Park
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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1 INTRODUCTION

This report presents the results of the energy analysis prepared by Urban Crossroads, Inc., for the proposed Knox Business Park (referred to as “Project”). The purpose of this report is to ensure that energy implications are considered by the County of Riverside, 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 Knox Business Park site is located south of Oleander Avenue and on either side of Decker Road in unincorporated County of Riverside, as shown on Exhibit 1-A. The Project site is mostly vacant with one vacant structure within the southern portion of the site. Nearby existing residential land uses are located west and south of the Project site. An existing high-cube warehouse/distribution land use is located northeast of the Project site along Oleander Avenue.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of approximately 1,259,050 square feet of high-cube warehouse/distribution center uses divided over two buildings: Building D (703,040 square feet) and Building E (556,010 square feet), as shown on Exhibit 1-B. At the time this energy analysis was prepared, the future tenants of the proposed Project were unknown. This analysis assumes the Project would be operational 24 hours per day, seven days per week, which is a conservative assumption that may overstate the air emissions. This analysis does not account for emissions and impacts associated with tenants that require cold storage (refrigeration). The Project is anticipated to be constructed and occupied by Year 2017.

As part of the Project’s design, all on-site outdoor cargo handling equipment (CHE) (i.e. yard trucks, hostlers, yard goats, pallet jacks, forklifts, and other on-site equipment) will be powered by diesel fueled engines that comply with the California Air Resources Board (CARB)/U.S. EPA Tier IV Engine standards for off-road vehicles (defined as 0.015 g/bhp-hr for PM10) or better and all on-site indoor forklifts shall be powered by electricity, compressed natural gas, or propane.

1.3 SUMMARY OF FINDINGS

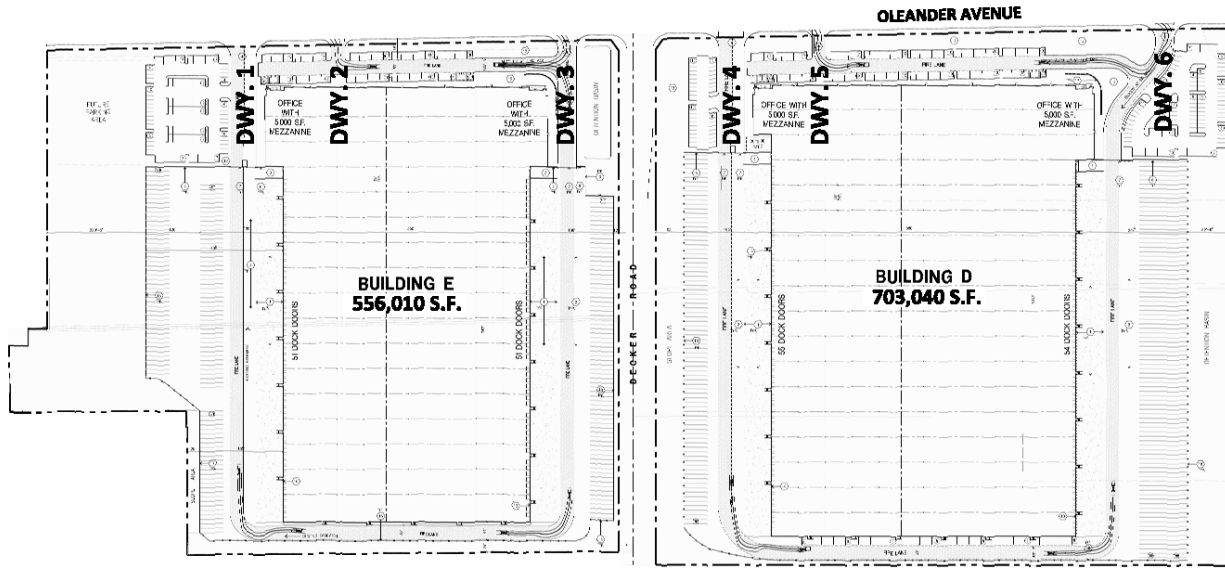
For new development such as that proposed by the Knox Business Park, compliance with California Building Standards Code Title 24 energy efficiency requirements (CalGreen), combined with the mitigation measures and project design features that are recommended by the Knox Business Park Air Quality Impact 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.

EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: SITE PLAN



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 2014 included:

- Approximately 296,843 gigawatt hours of electricity; (1)
- Approximately 12,767 million therms natural gas (approximately 3.5 billion cubic feet of natural gas per day); and
- Approximately 18 billion gallons of gasoline. (2)

As of 2013, 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 37.8 percent transportation;
- Approximately 23.6 percent industrial;
- Approximately 19.3 percent residential; and
- Approximately 19.3 percent commercial. (3)

California's massive electricity in-state generation system generates more than 200,000 gigawatt-hours each year and is transported over the state's 32,000 miles of transmission lines. In 2013, California produced close to 70% of the electricity it uses; the rest was imported from the Pacific Northwest (12%) and the U.S. Southwest (21%). Natural gas is the main source for electricity generation at 45% of the total in-state electric generation system power as shown in Table 2-1.

TABLE 2-1: TOTAL ELECTRICITY SYSTEM POWER (CALIFORNIA 2014)

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	1,011	0.5%	-	17,877	18,888	6.4%
Large Hydro	14,052	7.1%	160	2,138	16,350	5.5%
Natural Gas	121,934	61.3%	1	10,151	132,087	44.5%
Nuclear	17,027	8.6%	-	8,193	25,220	8.5%
Oil	46	0.0%	-	-	46	0.0%
Other	16	0.0%	-	-	16	0.0%
Renewables	44,887	22.5%	11,423	3,493	59,803	20.1%
Biomass	6,721	3.4%	762	24	7,507	2.5%
Geothermal	12,186	6.1%	150	694	13,030	4.4%
Small Hydro	2,426	1.2%	361	-	2,787	0.9%
Solar	10,557	5.3%	-	2,009	12,566	4.2%
Wind	12,997	6.5%	10,151	766	23,913	8.1%
Unspecified Sources of Power	N/A	N/A	25,676	18,757	44,433	15.0%
Total	198,973	100.00%	37,261	60,609	296,843	100.00%

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

Notes: gWh: Gigawatt Hour

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 ranked third in the nation in crude oil production in 2014, despite an overall decline in production rates since the mid-1980s.
- California also ranked third in the nation in refining capacity as of January 2015, with a combined capacity of almost 2 million barrels per calendar day from its 18 operable refineries.
- In 2013, California’s per capita energy consumption ranked 48th in the nation; the state’s low use of energy was due in part to its mild climate and its energy efficiency programs.
- In 2014, California ranked fourth in the nation in conventional hydroelectric generation, second in net electricity generation from other renewable energy resources, and first as a producer of electricity from geothermal energy.
- In 2014, California ranked 16th in net electricity generation from nuclear power after one of its two nuclear plants was taken out of service in January 2012; as of June 2013, operations permanently ceased at that plant, the San Onofre Nuclear Generating Station.
- Average site electricity consumption in California homes is among the lowest in the nation (6.9 megawatt hours per year), according to EIA’s Residential Energy Consumption Survey. (4)

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 oncthrough cooling policy, the retirement of San Onofre complicated the situation. California Independent Service Operator (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 Integrated Energy Policy Report (IEPR) after a collaborative process with other energy agencies, utilities, and air districts. 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 (5).

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. (6)

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. (7)

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 2013. As indicated in Table 2-2, shows the 2013 SCE Power Mix has renewable energy at 22% of the overall energy resources. Geothermal is remaining steady at 9%, same as in 2012 and 2011. Wind power is at 10%, growing from 8% in 2012 and 7% in 2011. Large hydro is at 4%, where it was in 2012, having fallen from 7% in 2011. Biomass and waste as well as solar energy have remained steady at 1%. Coal is at 6%, dropping slightly from 7% in 2012, and 8% in 2011. Natural gas is at 28%, increasing from 21% in 2012.

TABLE 2-2: SCE 2013 POWER CONTENT MIX

Energy Resources	2013 SCE Power Mix
<i>Eligible Renewable</i>	22%
Biomass & waste	1%
Geothermal	9%
Small Hydroelectric	1%
Solar	1%
Wind	10%
<i>Coal</i>	6%
<i>Large Hydroelectric</i>	4%
<i>Natural Gas</i>	28%
<i>Nuclear</i>	6%
<i>Other</i>	0%
Unspecified Sources of power*	34%
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.” (8)

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.*

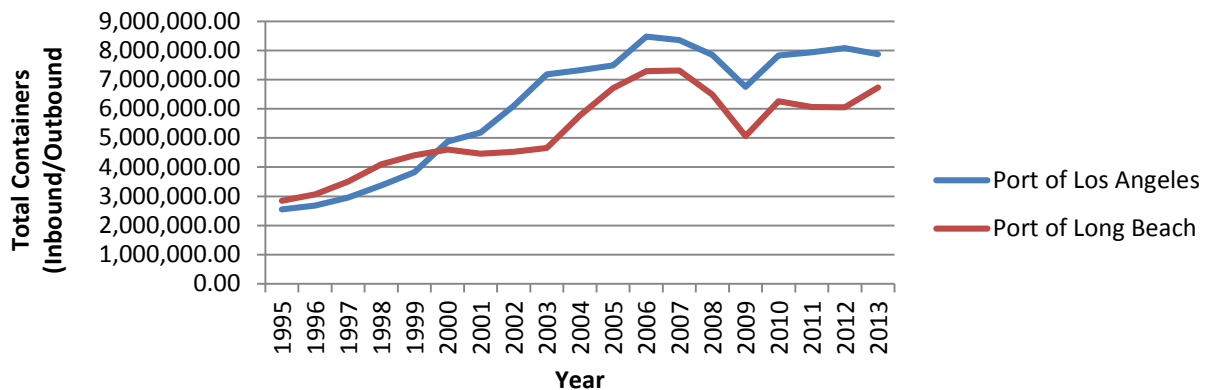
The Transportation Equity Act for the 21st Century (TEA-21)

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 (9) (10). 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 Knox Business Park 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.

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. (11)

California's building efficiency standards are updated on an approximately three-year cycle. The 2013 Standards would continue to improve upon the current 2008 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2013 Standards went into effect on July 1, 2014, following approval of the California Building Standards Commission.

The 2013 Energy Efficiency Standards in their entirety may be reviewed at: <http://www.energy.ca.gov/title24/2013standards/>. The 2013 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*, (12) 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 2013.2.2 outputs for the Knox Business Park Air Quality Impact Analysis, Urban Crossroads (2015) (13) 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) (14), the typical power cost per 1,000 square feet of building construction per month is estimated to be \$2.28. For the Knox Business Park development, the Project plans to develop 1,259,050 square feet of building space over the course of 19 months. Base 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 \$54,542.05. Additionally, as of February 23, 2015, SCE's general service rate schedule (GS-1) for an industrial land use is \$.07 per kWh of electricity (15). As shown on Table 4-2, the total electricity usage from on-site Project construction related activities is estimated to be approximately 779,172 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	1,259.05	19	\$54,542.05

TABLE 4-2: PROJECT CONSTRUCTION ELECTRICITY USAGE

Cost per kWh ¹	Total Project Construction Electricity Usage (kWh)
\$0.07	779,172

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. (16) 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 153,293 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)
Demolition (10 days)	Concrete/Industrial Saws	81	1	8	0.73	473	256
	Excavators	162	3	8	0.38	1,477	799
	Rubber Tired Dozers	255	2	8	0.40	1,632	882
Grading (65 days)	Excavators	162	1	8	0.38	492	1,730
	Generator Sets	300	1	8	0.74	1,776	6,240
	Graders	174	1	8	0.41	571	2,005
	Off-Highway Trucks	400	2	8	0.38	2,432	8,545
	Rubber Tired Dozers	255	5	8	0.40	4,080	14,335
	Scrapers	361	8	8	0.48	11,090	38,965
	Tractors/Loaders/Backhoes	97	2	8	0.37	574	2,018
Underground Utilities (45 days)	Excavators	162	3	8	0.38	1,477	3,594
	Off-Highway Trucks	400	2	8	0.38	2,432	5,916
	Rubber Tired Dozers	255	1	8	0.40	816	1,985
	Rubber Tired Loaders	199	1	8	0.36	573	1,394
Landscape (40 days)	Tractors/Loaders/Backhoes	97	1	8	0.37	287	621
Building Construction (225 days)	Cranes	226	1	8	0.29	524	6,377
	Forklifts	89	2	8	0.20	285	3,464
	Generator Sets	84	3	8	0.74	1,492	18,144
	Other Construction Equipment	171	1	8	0.42	575	6,988
	Tractors/Loaders/Backhoes	97	3	8	0.37	861	10,476
	Welders	46	6	8	0.45	994	12,084
Paving & Site Finishes (75 days)	Pavers	125	2	8	0.42	840	3,405
	Paving Equipment	130	2	8	0.36	749	3,036
	Rollers	80	2	8	0.38	486	1,972
Architectural Finishes (75 days)	Aerial Lifts	62	4	8	0.31	615	2,493
	Air Compressors	78	2	8	0.48	599	2,429
CONSTRUCTION FUEL DEMAND (gallons diesel fuel)							153,293

Note: Construction equipment schedules, power ratings, load factors populated from CalEEMod data presented in Knox Business Park Air Quality Impact Analysis, County of Riverside (Urban Crossroads, Inc.)

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 3,170,496 VMT (17). Data regarding Project related construction worker trips were based on CalEEMod 2013.2.2 model defaults utilized within the Knox Business Park Air Quality Impact Analysis.

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 (18). For purposes of this analysis, EMFAC 2014 was run for the LDA vehicle class within the California sub-area for a 2017 calendar year (consistent with the opening year of the Project). 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 2017 are estimated to have a fuel efficiency of 26.27 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 120,605 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)
Demolition (10 days)	15	14.7	2,205	26.27	84
Grading (65 days)	50	14.7	47,775	26.27	1,819
Underground Utilities (45 days)	18	14.7	11,907	26.27	453
Landscape (40 days)	3	14.7	1,764	26.27	67
Building Construction (225 days)	876	14.7	2,897,370	26.27	110,292
Paving & Site Finishes (75 days)	15	14.7	16,538	26.27	630
Architectural Finishes (75 days)	175	14.7	192,938	26.27	7,344
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION					120,605

4.3.4 CONSTRUCTION VENDOR FUEL ESTIMATES

With respect to estimated VMT, the construction vendor trips would generate an estimated 319,815 VMT along area roadways (13). 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). These assumptions are consistent with the 2013.2.2 CalEEMod defaults utilized within the Knox Business Park 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 2017 calendar year (consistent with the opening year of the Project). 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 2017 are estimated to have a fuel efficiency of 8.13 mpg. Additionally, HHD trucks are estimated to have a fuel efficiency of 5.70 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 vendor trips (medium and heavy duty trucks) will total approximately 47,723 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 (225 days)	103	6.9	159,908	8.13	19,669

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

Construction Activity	Vendor Trips / Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Building Construction (225 days)	103	6.9	159,908	5.7	28,054

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

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 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 \$54,542.05. 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 779,172 kWh.

Construction equipment used by the Project would result in single event consumption of approximately 153,293 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 120,605 gallons of fuel. Additionally, fuel consumption from construction vendor trips (medium and heavy duty trucks) will total approximately 47,723 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 2014 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. 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 7,379,362 annual VMT along area roadways for all passenger cars with full build-out of the Project (13). As generated by EMFAC 2014, an aggregated fuel economy of LDAs ranging from model year 1974 to model year 2017 are estimated to have a fuel efficiency of 26.27 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 280,905 gallons of fuel will be consumed from Project generated LDA trips r).

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)
7,379,362	26.27	280,905

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 3,675,703 annual VMT along area roadways for all LHD trucks with full build-out of the Project (13). As generated by EMFAC 2014, an aggregated fuel economy of LHD trucks ranging from model year 1974 to model year 2017 are estimated to have a fuel efficiency of 12.79 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 287,389 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)
3,675,703	12.79	287,389

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 2,946,569 annual VMT along area roadways for all MHD trucks with full build-out of the Project (13). As generated by EMFAC 2014, an aggregated fuel economy of MHD trucks ranging from model year 1974 to model year 2017 are estimated to have a fuel efficiency of 8.13 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 362,432 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)
2,946,569	8.13	362,432

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 2,946,569 annual VMT along area roadways for all HHD trucks with full build-out of the Project (13). As generated by EMFAC 2014, an aggregated fuel economy of HHD trucks ranging from model year 1974 to model year 2017 are estimated to have a fuel efficiency of 5.70 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 362,432 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)
10,062,717	5.7	1,765,389

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

Vehicle Type	Annual Miles Traveled	Estimated Annual Fuel Consumption (gallons)
Light Duty Autos	7,379,362	280,905
LHD Trucks	3,675,703	287,389
MHD Trucks	2,946,569	362,432
HHD Trucks	10,062,717	1,765,389
Total (All Vehicles)	24,064,351	2,696,114

As summarized on Table 4-11, the Project will result in 24,064,351 annual VMT and an estimated annual fuel consumption of 2,696,114 gallons of fuel.

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 (19). 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	2,142,900
Total Project Natural Gas Demand	2,142,900 kBTU/year

Electricity Demand	kWh/year
Parking Lot	727,232
Unrefrigerated Warehouse	3,654,390
Total Project Electricity Demand	4,381,622 kWh/year

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). In this latter regard, pursuant to the County of Riverside’s Screening Table for Greenhouse Gas Implementation Measures, several project design features will be implemented that reduce energy associated with the building envelope, indoor space efficiencies, irrigation and landscaping, potable water use, employment and trip reductions beyond existing requirements. A summary of the measures that will be incorporated into the project design are summarized at Table 4-13. As such, the Project’s energy use is not considered inefficient, wasteful, or unnecessary.

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.

TABLE 4-13: RIVERSIDE COUNTY CAP ENERGY EFFICIENCY MEASURES TO BE IMPLEMENTED

Riverside County CAP Feature	Description
E5.A.1 Insulation	Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38)
E5.A.2 Windows	Enhanced Window Insulation (15%> Title 24)
E5.B.1 Heating/Cooling Distribution System	Enhanced Duct Insulation (R-8)
E5.B.2 Space Heating/Cooling Equipment	Improved Efficiency HVAC (EER14/65% AFUE or 8 HSPF)
E5.B.4 Water Heaters	High Efficiency Water Heater (0.72 Energy Factor)
E5.B.5 Daylighting	All peripheral rooms within building have at least one window or skylight
E5.B.6 Artificial Lighting	Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)
E5.B.7 Appliances	Star Commercial Refrigerator
E5.C.1 Building Placement	North/South alignment of buildings or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting
W1.C.1 Water Efficient Landscaping	Eliminate turf and only provide drought tolerant plants
W1.D.2 Toilets	Water Efficient Toilets/Urinals (1.5gpm)
W1.D.3 Faucets	Water Efficient Faucets (1.28gpm)
T1.A.2 Car/Vanpools	Car/vanpool program with preferred parking
T1.A.3 Employee Bicycle/Pedestrian Programs	Bike lockers and secure racks
T4.A.1 Parking	Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.
T8.A.1 Commercial Vehicle Idling Restriction	All commercial vehicles are restricted to 5-minutes or less per trip on site and at loading docks
SW1.B.1 Recycling of Construction/Demolition Debris	Recycle 20% of debris

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 280,905 gallons of fuel consumption per year for LDAs. Additionally, the Project would result in an estimated 287,389 gallons of fuel consumption per year for LHD trucks. In regards to MHD trucks, the Project would result in an estimated 362,432 gallons of fuel consumption per year. For HHD trucks an estimated 1,765,389 gallons of fuel consumption per year is estimated for the year 2017. The total estimated annual fuel consumption from Project generated VMT would result in a fuel demand of 2,696,114 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 (9th Ed., 2012); and California Emissions Estimator Model (CalEEMod) v2013.2.2. 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: 2,142,900 kBTU/year of natural gas; and 4,381,622 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 Knox Business Park 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) 660-1994 ext. 217.

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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
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APPENDIX 3.1:
CALEEMOD EMISSIONS MODEL OUTPUTS

Knox Business Park
Riverside-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	1,259.05	1000sqft	47.01	1,259,050.00	0
Parking Lot	2,066.00	Space	18.59	826,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage totals 65.6 total acres for the Site. Parking spaces based on 601 Auto Stalls + 1,465 Auto Stall Equivalents for trucks (448 Trailer Stalls x 3.27 factor since trailer parking is larger than auto)

Construction Phase - Construction schedule based on a 2017 opening year

Off-road Equipment - based on on consultation with the applicant

Off-road Equipment - based on on consultation with the applicant

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Off-road Equipment - based on on consultation with the applicant

Trips and VMT -

Demolition -

Grading -

Architectural Coating - Interior/Exterior SF determined by 6,788 L.F. x 47 ft height for Building Wall = 319,036SF

Interior/Exterior SF determined by 2,509 L.F. x 14 ft height for Screen Walls = 35,126 SF

Interior/Exterior SF total = 354,162 SF (319,036 SF + 35,126 SF)

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Construction Off-road Equipment Mitigation - All Tier III Equipment and Watering 3x day

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	641,921.00	354,162.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,925,763.00	354,162.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_Nonresidential_Interior	1925763	1851240
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	1,110.00	225.00
tblConstructionPhase	NumDays	70.00	10.00
tblConstructionPhase	NumDays	110.00	65.00
tblConstructionPhase	PhaseEndDate	11/23/2017	8/10/2017
tblConstructionPhase	PhaseEndDate	6/22/2017	4/27/2017
tblConstructionPhase	PhaseStartDate	8/11/2017	4/28/2017
tblConstructionPhase	PhaseStartDate	8/12/2016	6/17/2016
tblEnergyUse	LightingElect	0.88	0.00
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.45	0.00
tblEnergyUse	T24NG	2.11	0.00
tblLandUse	LotAcreage	28.90	47.01

tblOffRoadEquipment	HorsePower	84.00	300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	1,183.51	0.00
tblTripsAndVMT	VendorTripNumber	342.00	206.00
tblVehicleTrips	ST_TR	2.59	0.00
tblVehicleTrips	SU_TR	2.59	0.00
tblVehicleTrips	WD_TR	2.59	0.00
tblWater	IndoorWaterUseRate	291,155,312.50	0.00

2.0 Emissions Summary

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	7.5400	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
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	7.5400	4.1000e-004	0.0432	0.0000	0.0000	1.6000e-004	1.6000e-004	0.0000	1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	7.5400	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
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	7.5400	4.1000e-004	0.0432	0.0000	0.0000	1.6000e-004	1.6000e-004	0.0000	1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

	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	Demolition	Demolition	1/1/2016	1/14/2016	5	10	
2	Grading	Grading	1/15/2016	4/14/2016	5	65	
3	Underground Utilities	Trenching	4/15/2016	6/16/2016	5	45	
4	Landscape	Site Preparation	6/17/2016	8/11/2016	5	40	
5	Building Construction	Building Construction	6/17/2016	4/27/2017	5	225	
6	Paving & Site Finishes	Paving	4/28/2017	8/10/2017	5	75	
7	Architectural Finishes	Architectural Coating	4/28/2017	8/10/2017	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 552.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 354,162; Non-Residential Outdoor: 354,162 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Excavators	1	8.00	162	0.38
Grading	Generator Sets	1	8.00	300	0.74
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	2	8.00	400	0.38
Grading	Rubber Tired Dozers	5	8.00	255	0.40
Grading	Scrapers	8	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Excavators	3	8.00	162	0.38
Underground Utilities	Off-Highway Trucks	2	8.00	400	0.38
Underground Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Underground Utilities	Rubber Tired Loaders	1	8.00	199	0.36
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	3	8.00	84	0.74
Building Construction	Other Construction Equipment	1	8.00	171	0.42
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	6	8.00	46	0.45
Landscape	Rubber Tired Dozers	0	8.00	255	0.40
Landscape	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving & Site Finishes	Pavers	2	8.00	125	0.42
Paving & Site Finishes	Paving Equipment	2	8.00	130	0.36
Paving & Site Finishes	Rollers	2	8.00	80	0.38
Architectural Finishes	Aerial Lifts	4	8.00	62	0.31
Architectural Finishes	Air Compressors	2	8.00	78	0.48

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
Demolition	6	15.00	0.00	11.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	20	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	16	876.00	206.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscape	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving & Site Finishes	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Finishes	6	175.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2016

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					1.2400e-003	0.0000	1.2400e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.2283	0.1752	2.0000e-004		0.0115	0.0115		0.0107	0.0107	0.0000	18.5487	18.5487	5.0400e-003	0.0000	18.6546
Total	0.0214	0.2283	0.1752	2.0000e-004	1.2400e-003	0.0115	0.0127	1.9000e-004	0.0107	0.0109	0.0000	18.5487	18.5487	5.0400e-003	0.0000	18.6546

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	9.0000e-005	1.5400e-003	1.0500e-003	0.0000	9.0000e-005	3.0000e-005	1.2000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3579	0.3579	0.0000	0.0000	0.3580
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	2.6000e-004	3.8000e-004	3.8000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6993	0.6993	3.0000e-005	0.0000	0.7000
Total	3.5000e-004	1.9200e-003	4.8500e-003	1.0000e-005	9.1000e-004	4.0000e-005	9.5000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	1.0573	1.0573	3.0000e-005	0.0000	1.0580

3.2 Demolition - 2016

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					4.8000e-004	0.0000	4.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3500e-003	0.1026	0.1259	2.0000e-004		5.1400e-003	5.1400e-003		5.1400e-003	5.1400e-003	0.0000	18.5487	18.5487	5.0400e-003	0.0000	18.6546
Total	7.3500e-003	0.1026	0.1259	2.0000e-004	4.8000e-004	5.1400e-003	5.6200e-003	7.0000e-005	5.1400e-003	5.2100e-003	0.0000	18.5487	18.5487	5.0400e-003	0.0000	18.6546

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	9.0000e-005	1.5400e-003	1.0500e-003	0.0000	9.0000e-005	3.0000e-005	1.2000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3579	0.3579	0.0000	0.0000	0.3580
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	2.6000e-004	3.8000e-004	3.8000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6993	0.6993	3.0000e-005	0.0000	0.7000
Total	3.5000e-004	1.9200e-003	4.8500e-003	1.0000e-005	9.1000e-004	4.0000e-005	9.5000e-004	2.5000e-004	2.0000e-005	2.7000e-004	0.0000	1.0573	1.0573	3.0000e-005	0.0000	1.0580

3.3 Grading - 2016

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					1.2716	0.0000	1.2716	0.5696	0.0000	0.5696	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7202	8.5939	5.4633	7.3800e-003		0.3689	0.3689		0.3403	0.3403	0.0000	701.7798	701.7798	0.1943	0.0000	705.8605
Total	0.7202	8.5939	5.4633	7.3800e-003	1.2716	0.3689	1.6405	0.5696	0.3403	0.9098	0.0000	701.7798	701.7798	0.1943	0.0000	705.8605

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	5.5900e-003	8.1600e-003	0.0823	2.0000e-004	0.0179	1.1000e-004	0.0180	4.7400e-003	1.0000e-004	4.8500e-003	0.0000	15.1518	15.1518	7.1000e-004	0.0000	15.1666
Total	5.5900e-003	8.1600e-003	0.0823	2.0000e-004	0.0179	1.1000e-004	0.0180	4.7400e-003	1.0000e-004	4.8500e-003	0.0000	15.1518	15.1518	7.1000e-004	0.0000	15.1666

3.3 Grading - 2016

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					0.4959	0.0000	0.4959	0.2221	0.0000	0.2221	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2057	2.3452	3.4124	7.3800e-003		0.0942	0.0942		0.0908	0.0908	0.0000	701.7790	701.7790	0.1943	0.0000	705.8596
Total	0.2057	2.3452	3.4124	7.3800e-003	0.4959	0.0942	0.5901	0.2221	0.0908	0.3129	0.0000	701.7790	701.7790	0.1943	0.0000	705.8596

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	5.5900e-003	8.1600e-003	0.0823	2.0000e-004	0.0179	1.1000e-004	0.0180	4.7400e-003	1.0000e-004	4.8500e-003	0.0000	15.1518	15.1518	7.1000e-004	0.0000	15.1666
Total	5.5900e-003	8.1600e-003	0.0823	2.0000e-004	0.0179	1.1000e-004	0.0180	4.7400e-003	1.0000e-004	4.8500e-003	0.0000	15.1518	15.1518	7.1000e-004	0.0000	15.1666

3.4 Underground Utilities - 2016

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	0.1076	1.2449	0.7360	1.2900e-003		0.0526	0.0526		0.0484	0.0484	0.0000	121.3116	121.3116	0.0366	0.0000	122.0800
Total	0.1076	1.2449	0.7360	1.2900e-003		0.0526	0.0526		0.0484	0.0484	0.0000	121.3116	121.3116	0.0366	0.0000	122.0800

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	1.3900e-003	2.0300e-003	0.0205	5.0000e-005	4.4500e-003	3.0000e-005	4.4800e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	3.7763	3.7763	1.8000e-004	0.0000	3.7800
Total	1.3900e-003	2.0300e-003	0.0205	5.0000e-005	4.4500e-003	3.0000e-005	4.4800e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	3.7763	3.7763	1.8000e-004	0.0000	3.7800

3.4 Underground Utilities - 2016

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	0.0672	0.8977	0.6451	1.2900e-003		0.0352	0.0352		0.0333	0.0333	0.0000	121.3114	121.3114	0.0366	0.0000	122.0799
Total	0.0672	0.8977	0.6451	1.2900e-003		0.0352	0.0352		0.0333	0.0333	0.0000	121.3114	121.3114	0.0366	0.0000	122.0799

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	1.3900e-003	2.0300e-003	0.0205	5.0000e-005	4.4500e-003	3.0000e-005	4.4800e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	3.7763	3.7763	1.8000e-004	0.0000	3.7800
Total	1.3900e-003	2.0300e-003	0.0205	5.0000e-005	4.4500e-003	3.0000e-005	4.4800e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	3.7763	3.7763	1.8000e-004	0.0000	3.7800

3.5 Landscape - 2016

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8100e-003	0.0651	0.0483	6.0000e-005		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	5.8727	5.8727	1.7700e-003	0.0000	5.9099
Total	6.8100e-003	0.0651	0.0483	6.0000e-005	0.0000	5.0100e-003	5.0100e-003	0.0000	4.6100e-003	4.6100e-003	0.0000	5.8727	5.8727	1.7700e-003	0.0000	5.9099

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	2.1000e-004	3.0000e-004	3.0400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5595	0.5595	3.0000e-005	0.0000	0.5600
Total	2.1000e-004	3.0000e-004	3.0400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5595	0.5595	3.0000e-005	0.0000	0.5600

3.5 Landscape - 2016

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	6.8100e-003	0.0651	0.0483	6.0000e-005		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	5.8727	5.8727	1.7700e-003	0.0000	5.9099
Total	6.8100e-003	0.0651	0.0483	6.0000e-005	0.0000	5.0100e-003	5.0100e-003	0.0000	4.6100e-003	4.6100e-003	0.0000	5.8727	5.8727	1.7700e-003	0.0000	5.9099

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	2.1000e-004	3.0000e-004	3.0400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5595	0.5595	3.0000e-005	0.0000	0.5600
Total	2.1000e-004	3.0000e-004	3.0400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5595	0.5595	3.0000e-005	0.0000	0.5600

3.6 Building Construction - 2016

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	0.5746	3.8697	2.8361	4.1800e-003		0.2624	0.2624		0.2519	0.2519	0.0000	359.8863	359.8863	0.0788	0.0000	361.5401
Total	0.5746	3.8697	2.8361	4.1800e-003		0.2624	0.2624		0.2519	0.2519	0.0000	359.8863	359.8863	0.0788	0.0000	361.5401

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	0.1191	1.2738	1.4908	3.0500e-003	0.0901	0.0237	0.1139	0.0258	0.0218	0.0476	0.0000	277.3508	277.3508	1.8400e-003	0.0000	277.3893
Worker	0.2123	0.3103	3.1280	7.6700e-003	0.6788	4.3200e-003	0.6831	0.1803	3.9700e-003	0.1842	0.0000	575.8414	575.8414	0.0268	0.0000	576.4045
Total	0.3314	1.5840	4.6188	0.0107	0.7689	0.0281	0.7970	0.2060	0.0258	0.2318	0.0000	853.1922	853.1922	0.0287	0.0000	853.7938

3.6 Building Construction - 2016

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	0.5746	3.8697	2.8361	4.1800e-003		0.2624	0.2624		0.2519	0.2519	0.0000	359.8859	359.8859	0.0788	0.0000	361.5397
Total	0.5746	3.8697	2.8361	4.1800e-003		0.2624	0.2624		0.2519	0.2519	0.0000	359.8859	359.8859	0.0788	0.0000	361.5397

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	0.1191	1.2738	1.4908	3.0500e-003	0.0901	0.0237	0.1139	0.0258	0.0218	0.0476	0.0000	277.3508	277.3508	1.8400e-003	0.0000	277.3893
Worker	0.2123	0.3103	3.1280	7.6700e-003	0.6788	4.3200e-003	0.6831	0.1803	3.9700e-003	0.1842	0.0000	575.8414	575.8414	0.0268	0.0000	576.4045
Total	0.3314	1.5840	4.6188	0.0107	0.7689	0.0281	0.7970	0.2060	0.0258	0.2318	0.0000	853.1922	853.1922	0.0287	0.0000	853.7938

3.6 Building Construction - 2017

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	0.3095	2.1535	1.6573	2.4900e-003		0.1414	0.1414		0.1357	0.1357	0.0000	212.8632	212.8632	0.0449	0.0000	213.8060
Total	0.3095	2.1535	1.6573	2.4900e-003		0.1414	0.1414		0.1357	0.1357	0.0000	212.8632	212.8632	0.0449	0.0000	213.8060

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	0.0640	0.6879	0.8384	1.8100e-003	0.0537	0.0127	0.0664	0.0154	0.0117	0.0270	0.0000	162.4384	162.4384	1.0600e-003	0.0000	162.4606
Worker	0.1128	0.1657	1.6679	4.5700e-003	0.4044	2.5000e-003	0.4069	0.1074	2.3100e-003	0.1097	0.0000	329.4411	329.4411	0.0147	0.0000	329.7488
Total	0.1767	0.8536	2.5063	6.3800e-003	0.4581	0.0152	0.4732	0.1227	0.0140	0.1367	0.0000	491.8795	491.8795	0.0157	0.0000	492.2093

3.6 Building Construction - 2017

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	0.3095	2.1535	1.6573	2.4900e-003		0.1414	0.1414		0.1357	0.1357	0.0000	212.8629	212.8629	0.0449	0.0000	213.8058
Total	0.3095	2.1535	1.6573	2.4900e-003		0.1414	0.1414		0.1357	0.1357	0.0000	212.8629	212.8629	0.0449	0.0000	213.8058

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	0.0640	0.6879	0.8384	1.8100e-003	0.0537	0.0127	0.0664	0.0154	0.0117	0.0270	0.0000	162.4384	162.4384	1.0600e-003	0.0000	162.4606
Worker	0.1128	0.1657	1.6679	4.5700e-003	0.4044	2.5000e-003	0.4069	0.1074	2.3100e-003	0.1097	0.0000	329.4411	329.4411	0.0147	0.0000	329.7488
Total	0.1767	0.8536	2.5063	6.3800e-003	0.4581	0.0152	0.4732	0.1227	0.0140	0.1367	0.0000	491.8795	491.8795	0.0157	0.0000	492.2093

3.7 Paving & Site Finishes - 2017

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	0.0715	0.7611	0.5523	8.4000e-004		0.0427	0.0427		0.0393	0.0393	0.0000	77.6003	77.6003	0.0238	0.0000	78.0996
Paving	0.0244					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0959	0.7611	0.5523	8.4000e-004		0.0427	0.0427		0.0393	0.0393	0.0000	77.6003	77.6003	0.0238	0.0000	78.0996

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	1.7200e-003	2.5300e-003	0.0255	7.0000e-005	6.1800e-003	4.0000e-005	6.2200e-003	1.6400e-003	4.0000e-005	1.6800e-003	0.0000	5.0367	5.0367	2.2000e-004	0.0000	5.0414
Total	1.7200e-003	2.5300e-003	0.0255	7.0000e-005	6.1800e-003	4.0000e-005	6.2200e-003	1.6400e-003	4.0000e-005	1.6800e-003	0.0000	5.0367	5.0367	2.2000e-004	0.0000	5.0414

3.7 Paving & Site Finishes - 2017

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	0.0715	0.7611	0.5523	8.4000e-004		0.0427	0.0427		0.0393	0.0393	0.0000	77.6002	77.6002	0.0238	0.0000	78.0995
Paving	0.0244					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0959	0.7611	0.5523	8.4000e-004		0.0427	0.0427		0.0393	0.0393	0.0000	77.6002	77.6002	0.0238	0.0000	78.0995

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	1.7200e-003	2.5300e-003	0.0255	7.0000e-005	6.1800e-003	4.0000e-005	6.2200e-003	1.6400e-003	4.0000e-005	1.6800e-003	0.0000	5.0367	5.0367	2.2000e-004	0.0000	5.0414
Total	1.7200e-003	2.5300e-003	0.0255	7.0000e-005	6.1800e-003	4.0000e-005	6.2200e-003	1.6400e-003	4.0000e-005	1.6800e-003	0.0000	5.0367	5.0367	2.2000e-004	0.0000	5.0414

3.8 Architectural Finishes - 2017

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	1.6415					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0405	0.3387	0.3487	5.5000e-004		0.0216	0.0216		0.0212	0.0212	0.0000	48.5201	48.5201	9.7400e-003	0.0000	48.7246
Total	1.6820	0.3387	0.3487	5.5000e-004		0.0216	0.0216		0.0212	0.0212	0.0000	48.5201	48.5201	9.7400e-003	0.0000	48.7246

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	0.0201	0.0296	0.2975	8.1000e-004	0.0721	4.5000e-004	0.0726	0.0192	4.1000e-004	0.0196	0.0000	58.7616	58.7616	2.6100e-003	0.0000	58.8165
Total	0.0201	0.0296	0.2975	8.1000e-004	0.0721	4.5000e-004	0.0726	0.0192	4.1000e-004	0.0196	0.0000	58.7616	58.7616	2.6100e-003	0.0000	58.8165

3.8 Architectural Finishes - 2017

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	1.6415					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0405	0.3387	0.3487	5.5000e-004		0.0216	0.0216		0.0212	0.0212	0.0000	48.5200	48.5200	9.7400e-003	0.0000	48.7246
Total	1.6820	0.3387	0.3487	5.5000e-004		0.0216	0.0216		0.0212	0.0212	0.0000	48.5200	48.5200	9.7400e-003	0.0000	48.7246

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	0.0201	0.0296	0.2975	8.1000e-004	0.0721	4.5000e-004	0.0726	0.0192	4.1000e-004	0.0196	0.0000	58.7616	58.7616	2.6100e-003	0.0000	58.8165
Total	0.0201	0.0296	0.2975	8.1000e-004	0.0721	4.5000e-004	0.0726	0.0192	4.1000e-004	0.0196	0.0000	58.7616	58.7616	2.6100e-003	0.0000	58.8165

4.0 Operational Detail - Mobile

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	0.0000	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
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Parking Lot	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
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.460962	0.069557	0.176974	0.170659	0.045477	0.007383	0.012841	0.043558	0.000954	0.001056	0.006454	0.000884	0.003242

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

	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	7.5400	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Unmitigated	7.5400	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	7.5399	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	7.5399	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

7.0 Water Detail

7.1 Mitigation Measures Water

	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

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

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

8.2 Waste by Land Use

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 Pail	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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10.0 Vegetation

Knox Business Park - Trucks Only
Riverside-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	1,259.05	1000sqft	47.01	1,259,050.00	0
Parking Lot	2,066.00	Space	18.59	826,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	515.47	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for 2017: CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Lot acreage totals 65.6 total acres for the Site. Parking spaces based on 601 Auto Stalls + 1,465 Auto Stall Equivalents for trucks (448 Trailer Stalls x 3.27 factor since trailer parking is larger than auto).

Construction Phase -

Off-road Equipment - Construction modeled separately.

Vehicle Trips - Passenger Car Only Trip Rate based on Traffic Study.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Trucks Only.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Trucks Only.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Trucks Only.

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 21.8% and 16.8% respectively, to reflect 2013 Title 24 requirements. Source: Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC 2013)

Water And Wastewater - Water usage based on 0.75 AFY per acre which is based on EMWD data for similar projects.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Operational Off-Road Equipment - based on CARB Cargo Handling Equipment Yard Truck Emission Testing Report. hours per day based on the Port of Long Beach Air Emissions Inventory (July 2013)

Table Name	Column Name	Default Value	New Value
tblEnergyUse	T24E	0.45	0.35
tblEnergyUse	T24NG	2.11	1.76
tblLandUse	LotAcreage	28.90	47.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperHorsePower	97.00	200.00

tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	5.00
tblProjectCharacteristics	CO2IntensityFactor	630.89	515.47
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.04	0.60
tblVehicleEF	HHD	0.04	0.60
tblVehicleEF	HHD	0.04	0.60
tblVehicleEF	LDA	0.46	0.00
tblVehicleEF	LDA	0.46	0.00
tblVehicleEF	LDA	0.46	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LHD1	0.05	0.22
tblVehicleEF	LHD1	0.05	0.22
tblVehicleEF	LHD1	0.05	0.22
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MDV	0.17	0.00

tblVehicleEF	MDV	0.17	0.00
tblVehicleEF	MDV	0.17	0.00
tblVehicleEF	MH	3.2420e-003	0.00
tblVehicleEF	MH	3.2420e-003	0.00
tblVehicleEF	MH	3.2420e-003	0.00
tblVehicleEF	MHD	0.01	0.18
tblVehicleEF	MHD	0.01	0.18
tblVehicleEF	MHD	0.01	0.18
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleTrips	CNW_TL	6.90	61.00
tblVehicleTrips	CNW_TTP	41.00	100.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	ST_TR	2.59	0.64
tblVehicleTrips	SU_TR	2.59	0.64
tblVehicleTrips	WD_TR	2.59	0.64
tblWater	IndoorWaterUseRate	291,155,312.50	16,031,890.31

2.0 Emissions Summary

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	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Energy	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003	0.0000	1,149.8996	1,149.8996	0.0602	0.0142	1,155.5633
Mobile	3.4023	77.0367	33.3104	0.2279	7.1321	1.4218	8.5539	1.9833	1.3080	3.2912	0.0000	20,487.2285	20,487.2285	0.1364	0.0000	20,490.0932
Offroad	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130
Waste						0.0000	0.0000		0.0000	0.0000	240.2418	0.0000	240.2418	14.1979	0.0000	538.3974
Water						0.0000	0.0000		0.0000	0.0000	5.0862	48.8088	53.8950	0.5252	0.0129	68.9230
Total	12.7117	80.3870	34.7927	0.2321	7.1321	1.5776	8.7097	1.9833	1.4520	3.4353	245.3280	22,019.0893	22,264.4174	15.0220	0.0271	22,588.2772

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	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Energy	0.0116	0.1050	0.0882	6.3000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	1,138.8354	1,138.8354	0.0598	0.0140	1,144.4384
Mobile	3.4023	77.0367	33.3104	0.2279	7.1321	1.4218	8.5539	1.9833	1.3080	3.2912	0.0000	20,487.2285	20,487.2285	0.1364	0.0000	20,490.0932
Offroad	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130
Waste						0.0000	0.0000		0.0000	0.0000	240.2418	0.0000	240.2418	14.1979	0.0000	538.3974
Water						0.0000	0.0000		0.0000	0.0000	4.0689	39.0471	43.1160	0.4200	0.0103	55.1319
Total	12.7111	80.3815	34.7881	0.2321	7.1321	1.5771	8.7093	1.9833	1.4516	3.4348	244.3108	21,998.2634	22,242.5741	14.9165	0.0243	22,563.3613

	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	2.13	4.04	3.88	1.56	0.00	9.36	1.70	0.00	9.36	3.96	0.41	1.61	1.59	1.38	10.19	1.59

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	4/7/2016	5	70	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	162	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	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
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	0.0000	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

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

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					
Unmitigated	3.4023	77.0367	33.3104	0.2279	7.1321	1.4218	8.5539	1.9833	1.3080	3.2912	0.0000	20,487.2285	20,487.2285	0.1364	0.0000	20,490.0932
Mitigated	3.4023	77.0367	33.3104	0.2279	7.1321	1.4218	8.5539	1.9833	1.3080	3.2912	0.0000	20,487.2285	20,487.2285	0.1364	0.0000	20,490.0932

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	805.79	805.79	805.79	16,684,989	16,684,989
Total	805.79	805.79	805.79	16,684,989	16,684,989

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	61.00	0.00	0.00	100.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.000000	0.000000	0.000000	0.000000	0.220300	0.000000	0.176600	0.603100	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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					
NaturalGas Unmitigated	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003	0.0000	120.2660	120.2660	2.3100e-003	2.2000e-003	120.9979
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,024.4819	1,024.4819	0.0576	0.0119	1,029.3890
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,029.6336	1,029.6336	0.0579	0.0120	1,034.5654
NaturalGas Mitigated	0.0116	0.1050	0.0882	6.3000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	114.3535	114.3535	2.1900e-003	2.1000e-003	115.0494

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 Pail	2.2537e+006	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003	0.0000	120.2660	120.2660	2.3100e-003	2.2000e-003	120.9979
Total		0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003	0.0000	120.2660	120.2660	2.3100e-003	2.2000e-003	120.9979

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					
Unrefrigerated Warehouse-No Pail	2.1429e+006	0.0116	0.1050	0.0882	6.3000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	114.3535	114.3535	2.1900e-003	2.1000e-003	115.0494
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
Total		0.0116	0.1050	0.0882	6.3000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	114.3535	114.3535	2.1900e-003	2.1000e-003	115.0494

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	727232	170.0365	9.5700e-003	1.9800e-003	170.8509
Unrefrigerated Warehouse-No Rail	3.67643e+006	859.5971	0.0484	0.0100	863.7145
Total		1,029.6336	0.0579	0.0120	1,034.5654

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	727232	170.0365	9.5700e-003	1.9800e-003	170.8509
Unrefrigerated Warehouse-No Rail	3.65439e+006	854.4455	0.0481	9.9500e-003	858.5381
Total		1,024.4819	0.0576	0.0119	1,029.3890

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Cleaning Supplies

	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					
Unmitigated	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Mitigated	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	1.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	1.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	53.8950	0.5252	0.0129	68.9230
Mitigated	43.1160	0.4200	0.0103	55.1319

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	16.0319 / 0	53.8950	0.5252	0.0129	68.9230
Total		53.8950	0.5252	0.0129	68.9230

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 Pail	12.8255 / 0	43.1160	0.4200	0.0103	55.1319
Total		43.1160	0.4200	0.0103	55.1319

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	240.2418	14.1979	0.0000	538.3974
Unmitigated	240.2418	14.1979	0.0000	538.3974

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	1183.51	240.2418	14.1979	0.0000	538.3974
Total		240.2418	14.1979	0.0000	538.3974

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	1183.51	240.2418	14.1979	0.0000	538.3974
Total		240.2418	14.1979	0.0000	538.3974

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	5	4.00	365	89	0.20	CNG
Tractors/Loaders/Backhoes	5	4.00	365	200	0.37	Diesel

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0962	0.8333	0.5699	7.0000e-004		0.0688	0.0688		0.0633	0.0633	0.0000	64.6743	64.6743	0.0198	0.0000	65.0905
Tractors/Loaders/Backhoes	0.1734	2.4061	0.7763	2.8900e-003		0.0785	0.0785		0.0722	0.0722	0.0000	268.3956	268.3956	0.0822	0.0000	270.1226
Total	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130

10.0 Vegetation

Knox Business Park - Passenger Cars Only
Riverside-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	1,259.05	1000sqft	47.01	1,259,050.00	0
Parking Lot	2,066.00	Space	18.59	826,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	515.47	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for 2017: CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Lot acreage totals 65.6 total acres for the Site. Parking spaces based on 601 Auto Stalls + 1,465 Auto Stall Equivalents for trucks (448 Trailer Stalls x 3.27 factor since trailer parking is larger than auto).

Construction Phase -

Off-road Equipment - Construction modeled separately.

Vehicle Trips - Passenger Car Only Trip Rate based on Traffic Study.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Passenger Cars Only.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Passenger Cars Only.

Vehicle Emission Factors - TR was based on the Knox Business Park TIA. TR for Passenger Cars Only.

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 21.8% and 16.8% respectively, to reflect 2013 Title 24 requirements. Source: Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC 2013)

Water And Wastewater - Water usage based on 0.75 AFY per acre which is based on EMWD data for similar projects.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Operational Off-Road Equipment - based on CARB Cargo Handling Equipment Yard Truck Emission Testing Report. hours per day based on the Port of Long Beach Air Emissions Inventory (July 2013)

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	28.90	47.01
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperHorsePower	97.00	200.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	5.00
tblProjectCharacteristics	CO2IntensityFactor	630.89	515.47

tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	HHD	0.04	0.00
tblVehicleEF	LDA	0.46	1.00
tblVehicleEF	LDA	0.46	1.00
tblVehicleEF	LDA	0.46	1.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT1	0.07	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LDT2	0.18	0.00
tblVehicleEF	LHD1	0.05	0.00
tblVehicleEF	LHD1	0.05	0.00
tblVehicleEF	LHD1	0.05	0.00
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	LHD2	7.3830e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MCY	6.4540e-003	0.00
tblVehicleEF	MDV	0.17	0.00
tblVehicleEF	MDV	0.17	0.00
tblVehicleEF	MDV	0.17	0.00
tblVehicleEF	MH	3.2420e-003	0.00
tblVehicleEF	MH	3.2420e-003	0.00
tblVehicleEF	MH	3.2420e-003	0.00

tblVehicleEF	MHD	0.01	0.00
tblVehicleEF	MHD	0.01	0.00
tblVehicleEF	MHD	0.01	0.00
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	OBUS	9.5400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	SBUS	8.8400e-004	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleEF	UBUS	1.0560e-003	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	ST_TR	2.59	1.04
tblVehicleTrips	SU_TR	2.59	1.04
tblVehicleTrips	WD_TR	2.59	1.04

2.0 Emissions Summary

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	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Energy	0.0145	0.1321	0.1109	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	1,202.8536	1,202.8536	0.0623	0.0150	1,208.8014
Mobile	0.4519	0.6967	7.6528	0.0273	2.7563	0.0132	2.7695	0.7316	0.0121	0.7437	0.0000	1,921.5980	1,921.5980	0.0711	0.0000	1,923.0918
Offroad	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130
Waste						0.0000	0.0000		0.0000	0.0000	240.2418	0.0000	240.2418	14.1979	0.0000	538.3974
Water						0.0000	0.0000		0.0000	0.0000	92.3702	886.4172	978.7874	9.5372	0.2343	1,251.7113
Total	9.7638	4.0685	9.1532	0.0317	2.7563	0.1706	2.9269	0.7316	0.1578	0.8894	332.6120	4,344.0213	4,676.6332	23.9708	0.2493	5,257.3022

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	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Energy	0.0138	0.1256	0.1055	7.5000e-004		9.5400e-003	9.5400e-003		9.5400e-003	9.5400e-003	0.0000	1,189.1417	1,189.1417	0.0618	0.0148	1,195.0146
Mobile	0.4505	0.6903	7.5853	0.0271	2.7288	0.0131	2.7418	0.7243	0.0120	0.7363	0.0000	1,902.6652	1,902.6652	0.0705	0.0000	1,904.1447
Offroad	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130
Waste						0.0000	0.0000		0.0000	0.0000	240.2418	0.0000	240.2418	14.1979	0.0000	538.3974
Water						0.0000	0.0000		0.0000	0.0000	73.8961	709.1338	783.0299	7.6284	0.1872	1,001.2512
Total	9.7616	4.0556	9.0802	0.0314	2.7288	0.1700	2.8988	0.7243	0.1572	0.8815	314.1380	4,134.0931	4,448.2310	22.0608	0.2019	4,974.1083

	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	2.78	79.94	15.50	12.30	1.00	86.67	5.99	1.00	86.23	16.12	5.55	12.50	12.01	8.39	18.99	11.76

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	4/7/2016	5	70	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	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
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	0.1501	1.5980	1.2261	1.4000e-003		0.0802	0.0802		0.0748	0.0748	0.0000	129.8408	129.8408	0.0353	0.0000	130.5823
Total	0.1501	1.5980	1.2261	1.4000e-003		0.0802	0.0802		0.0748	0.0748	0.0000	129.8408	129.8408	0.0353	0.0000	130.5823

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	1.8000e-003	2.6400e-003	0.0266	7.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	4.8952	4.8952	2.3000e-004	0.0000	4.9000
Total	1.8000e-003	2.6400e-003	0.0266	7.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	4.8952	4.8952	2.3000e-004	0.0000	4.9000

3.2 Demolition - 2016

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	0.1501	1.5980	1.2261	1.4000e-003		0.0802	0.0802		0.0748	0.0748	0.0000	129.8406	129.8406	0.0353	0.0000	130.5821
Total	0.1501	1.5980	1.2261	1.4000e-003		0.0802	0.0802		0.0748	0.0748	0.0000	129.8406	129.8406	0.0353	0.0000	130.5821

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	1.8000e-003	2.6400e-003	0.0266	7.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	4.8952	4.8952	2.3000e-004	0.0000	4.9000
Total	1.8000e-003	2.6400e-003	0.0266	7.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	4.8952	4.8952	2.3000e-004	0.0000	4.9000

4.0 Operational Detail - Mobile

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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					
NaturalGas Unmitigated	0.0145	0.1321	0.1109	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	143.7817	143.7817	2.7600e-003	2.6400e-003	144.6567
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,052.4483	1,052.4483	0.0592	0.0123	1,057.4893
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,059.0719	1,059.0719	0.0596	0.0123	1,064.1446
NaturalGas Mitigated	0.0138	0.1256	0.1055	7.5000e-004		9.5400e-003	9.5400e-003		9.5400e-003	9.5400e-003	0.0000	136.6934	136.6934	2.6200e-003	2.5100e-003	137.5253

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 Pail	2.69437e+006	0.0145	0.1321	0.1109	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	143.7817	143.7817	2.7600e-003	2.6400e-003	144.6567
Total		0.0145	0.1321	0.1109	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	143.7817	143.7817	2.7600e-003	2.6400e-003	144.6567

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					
Unrefrigerated Warehouse-No Pail	2.56154e+006	0.0138	0.1256	0.1055	7.5000e-004		9.5400e-003	9.5400e-003		9.5400e-003	9.5400e-003	0.0000	136.6934	136.6934	2.6200e-003	2.5100e-003	137.5253
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
Total		0.0138	0.1256	0.1055	7.5000e-004		9.5400e-003	9.5400e-003		9.5400e-003	9.5400e-003	0.0000	136.6934	136.6934	2.6200e-003	2.5100e-003	137.5253

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	727232	170.0365	9.5700e-003	1.9800e-003	170.8509
Unrefrigerated Warehouse-No Rail	3.80233e+006	889.0354	0.0500	0.0104	893.2937
Total		1,059.0719	0.0596	0.0123	1,064.1446

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	727232	170.0365	9.5700e-003	1.9800e-003	170.8509
Unrefrigerated Warehouse-No Rail	3.774e+006	882.4118	0.0496	0.0103	886.6384
Total		1,052.4483	0.0592	0.0123	1,057.4893

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Cleaning Supplies

	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					
Unmitigated	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Mitigated	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	1.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

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	1.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.5358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1700e-003	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873
Total	9.0276	4.1000e-004	0.0432	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0825	0.0825	2.3000e-004	0.0000	0.0873

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	978.7874	9.5372	0.2343	1,251.7113
Mitigated	783.0299	7.6284	0.1872	1,001.2512

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	291.155 / 0	978.7874	9.5372	0.2343	1,251.7113
Total		978.7874	9.5372	0.2343	1,251.7113

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 Pail	232.924 / 0	783.0299	7.6284	0.1872	1,001.2512
Total		783.0299	7.6284	0.1872	1,001.2512

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	240.2418	14.1979	0.0000	538.3974
Unmitigated	240.2418	14.1979	0.0000	538.3974

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	1183.51	240.2418	14.1979	0.0000	538.3974
Total		240.2418	14.1979	0.0000	538.3974

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	1183.51	240.2418	14.1979	0.0000	538.3974
Total		240.2418	14.1979	0.0000	538.3974

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	5	4.00	365	89	0.20	CNG
Tractors/Loaders/Backhoes	5	4.00	365	200	0.37	Diesel

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0962	0.8333	0.5699	7.0000e-004		0.0688	0.0688		0.0633	0.0633	0.0000	64.6743	64.6743	0.0198	0.0000	65.0905
Tractors/Loaders/Backhoes	0.1734	2.4061	0.7763	2.8900e-003		0.0785	0.0785		0.0722	0.0722	0.0000	268.3956	268.3956	0.0822	0.0000	270.1226
Total	0.2697	3.2394	1.3462	3.5900e-003		0.1473	0.1473		0.1355	0.1355	0.0000	333.0699	333.0699	0.1021	0.0000	335.2130

10.0 Vegetation

APPENDIX 3.2:
EMFAC 2014 MODEL OUTPUTS

calendar_year	season_month	sub_area	vehicle_class	pollutant	gallons
2017	Annual	Alpine (GBV)	LDA	Fuel	3573.237
2017	Annual	Inyo (GBV)	LDA	Fuel	32353.65
2017	Annual	Mono (GBV)	LDA	Fuel	16827.81
2017	Annual	Lake (LC)	LDA	Fuel	27761.1
2017	Annual	El Dorado (LT)	LDA	Fuel	7985.472
2017	Annual	Placer (LT)	LDA	Fuel	6462.614
2017	Annual	Amador (MC)	LDA	Fuel	21549.98
2017	Annual	Calaveras (MC)	LDA	Fuel	19806.3
2017	Annual	El Dorado (MC)	LDA	Fuel	70022.51
2017	Annual	Mariposa (MC)	LDA	Fuel	9374.114
2017	Annual	Nevada (MC)	LDA	Fuel	45309.93
2017	Annual	Placer (MC)	LDA	Fuel	44004.08
2017	Annual	Plumas (MC)	LDA	Fuel	12821.02
2017	Annual	Sierra (MC)	LDA	Fuel	5579.982
2017	Annual	Tuolumne (MC)	LDA	Fuel	18873.83
2017	Annual	Monterey (NCC)	LDA	Fuel	202805.2
2017	Annual	San Benito (NCC)	LDA	Fuel	31800.11
2017	Annual	Santa Cruz (NCC)	LDA	Fuel	85584.45
2017	Annual	Del Norte (NC)	LDA	Fuel	12275.25
2017	Annual	Humboldt (NC)	LDA	Fuel	54185.66
2017	Annual	Mendocino (NC)	LDA	Fuel	50070.88
2017	Annual	Sonoma (NC)	LDA	Fuel	39762.17
2017	Annual	Trinity (NC)	LDA	Fuel	11373.96
2017	Annual	Lassen (NEP)	LDA	Fuel	19901.1
2017	Annual	Modoc (NEP)	LDA	Fuel	8072.46
2017	Annual	Siskiyou (NEP)	LDA	Fuel	56870.69
2017	Annual	Butte (SV)	LDA	Fuel	68485.61
2017	Annual	Colusa (SV)	LDA	Fuel	38701.42
2017	Annual	Glenn (SV)	LDA	Fuel	30363.96
2017	Annual	Placer (SV)	LDA	Fuel	104341.3
2017	Annual	Sacramento (SV)	LDA	Fuel	725015.1
2017	Annual	Shasta (SV)	LDA	Fuel	104805.2
2017	Annual	Solano (SV)	LDA	Fuel	120108.5
2017	Annual	Sutter (SV)	LDA	Fuel	41303.11
2017	Annual	Tehama (SV)	LDA	Fuel	60361.19
2017	Annual	Yolo (SV)	LDA	Fuel	115320.9
2017	Annual	Yuba (SV)	LDA	Fuel	35005.85
2017	Annual	San Diego (SD)	LDA	Fuel	1727469
2017	Annual	Alameda (SF)	LDA	Fuel	850154
2017	Annual	Contra Costa (SF)	LDA	Fuel	500246.1
2017	Annual	Marin (SF)	LDA	Fuel	165201
2017	Annual	Napa (SF)	LDA	Fuel	59540.75
2017	Annual	San Francisco (SF)	LDA	Fuel	231566.2
2017	Annual	San Mateo (SF)	LDA	Fuel	333370.8
2017	Annual	Santa Clara (SF)	LDA	Fuel	984788.2
2017	Annual	Solano (SF)	LDA	Fuel	209093.5

2017 Annual	Sonoma (SF)	LDA	Fuel	143393.1
2017 Annual	Fresno (SJV)	LDA	Fuel	283934.9
2017 Annual	Kern (SJV)	LDA	Fuel	438689
2017 Annual	Kings (SJV)	LDA	Fuel	77140.38
2017 Annual	Madera (SJV)	LDA	Fuel	97790.57
2017 Annual	Merced (SJV)	LDA	Fuel	151651.7
2017 Annual	San Joaquin (SJV)	LDA	Fuel	426507
2017 Annual	Stanislaus (SJV)	LDA	Fuel	189773.6
2017 Annual	Tulare (SJV)	LDA	Fuel	161694.3
2017 Annual	San Luis Obispo (SCC)	LDA	Fuel	157883.2
2017 Annual	Santa Barbara (SCC)	LDA	Fuel	198518
2017 Annual	Ventura (SCC)	LDA	Fuel	384838.5
2017 Annual	Los Angeles (SC)	LDA	Fuel	5028796
2017 Annual	Orange (SC)	LDA	Fuel	1603746
2017 Annual	Riverside (SC)	LDA	Fuel	770470.6
2017 Annual	San Bernardino (SC)	LDA	Fuel	748773.3
2017 Annual	Imperial (SS)	LDA	Fuel	105495.5
2017 Annual	Riverside (SS)	LDA	Fuel	187198.4
2017 Annual	Kern (MD)	LDA	Fuel	83975.33
2017 Annual	Riverside (MD/MDAQMD)	LDA	Fuel	26423.27
2017 Annual	Riverside (MD/SCAQMD)	LDA	Fuel	26461.38
2017 Annual	Los Angeles (MD)	LDA	Fuel	135870
2017 Annual	San Bernardino (MD)	LDA	Fuel	493845
			Total	19343118
			MPG	26.26641
2017 Annual	Alpine (GBV)	LHDT1	Fuel	575.3503
2017 Annual	Inyo (GBV)	LHDT1	Fuel	5658.471
2017 Annual	Mono (GBV)	LHDT1	Fuel	3131.677
2017 Annual	Lake (LC)	LHDT1	Fuel	7094.742
2017 Annual	El Dorado (LT)	LHDT1	Fuel	2304.428
2017 Annual	Placer (LT)	LHDT1	Fuel	1887.382
2017 Annual	Amador (MC)	LHDT1	Fuel	6589.969
2017 Annual	Calaveras (MC)	LHDT1	Fuel	5825.078
2017 Annual	El Dorado (MC)	LHDT1	Fuel	13163.78
2017 Annual	Mariposa (MC)	LHDT1	Fuel	2707.762
2017 Annual	Nevada (MC)	LHDT1	Fuel	12902.07
2017 Annual	Placer (MC)	LHDT1	Fuel	6066.077
2017 Annual	Plumas (MC)	LHDT1	Fuel	4149.034
2017 Annual	Sierra (MC)	LHDT1	Fuel	1044.612
2017 Annual	Tuolumne (MC)	LHDT1	Fuel	6476.001
2017 Annual	Monterey (NCC)	LHDT1	Fuel	24968.07
2017 Annual	San Benito (NCC)	LHDT1	Fuel	5006.185
2017 Annual	Santa Cruz (NCC)	LHDT1	Fuel	10793.62
2017 Annual	Del Norte (NC)	LHDT1	Fuel	3030.895
2017 Annual	Humboldt (NC)	LHDT1	Fuel	15595.28
2017 Annual	Mendocino (NC)	LHDT1	Fuel	13280.02

2017 Annual	Sonoma (NC)	LHDT1	Fuel	6487.906
2017 Annual	Trinity (NC)	LHDT1	Fuel	2893.058
2017 Annual	Lassen (NEP)	LHDT1	Fuel	6610.742
2017 Annual	Modoc (NEP)	LHDT1	Fuel	2449.151
2017 Annual	Siskiyou (NEP)	LHDT1	Fuel	11211.32
2017 Annual	Butte (SV)	LHDT1	Fuel	14788.74
2017 Annual	Colusa (SV)	LHDT1	Fuel	5980.587
2017 Annual	Glenn (SV)	LHDT1	Fuel	5320.156
2017 Annual	Placer (SV)	LHDT1	Fuel	15788.62
2017 Annual	Sacramento (SV)	LHDT1	Fuel	80892.55
2017 Annual	Shasta (SV)	LHDT1	Fuel	22531.48
2017 Annual	Solano (SV)	LHDT1	Fuel	12411.13
2017 Annual	Sutter (SV)	LHDT1	Fuel	8640.107
2017 Annual	Tehama (SV)	LHDT1	Fuel	10975.93
2017 Annual	Yolo (SV)	LHDT1	Fuel	17524.63
2017 Annual	Yuba (SV)	LHDT1	Fuel	5728.333
2017 Annual	San Diego (SD)	LHDT1	Fuel	133243.9
2017 Annual	Alameda (SF)	LHDT1	Fuel	69448.04
2017 Annual	Contra Costa (SF)	LHDT1	Fuel	42710.79
2017 Annual	Marin (SF)	LHDT1	Fuel	13404.45
2017 Annual	Napa (SF)	LHDT1	Fuel	8203.022
2017 Annual	San Francisco (SF)	LHDT1	Fuel	14488.49
2017 Annual	San Mateo (SF)	LHDT1	Fuel	28590.74
2017 Annual	Santa Clara (SF)	LHDT1	Fuel	69063.42
2017 Annual	Solano (SF)	LHDT1	Fuel	18688.48
2017 Annual	Sonoma (SF)	LHDT1	Fuel	21166.9
2017 Annual	Fresno (SJV)	LHDT1	Fuel	31888.02
2017 Annual	Kern (SJV)	LHDT1	Fuel	52148.06
2017 Annual	Kings (SJV)	LHDT1	Fuel	10096.72
2017 Annual	Madera (SJV)	LHDT1	Fuel	13248.19
2017 Annual	Merced (SJV)	LHDT1	Fuel	18400.65
2017 Annual	San Joaquin (SJV)	LHDT1	Fuel	45041.54
2017 Annual	Stanislaus (SJV)	LHDT1	Fuel	28252.68
2017 Annual	Tulare (SJV)	LHDT1	Fuel	23127.08
2017 Annual	San Luis Obispo (SCC)	LHDT1	Fuel	26221.84
2017 Annual	Santa Barbara (SCC)	LHDT1	Fuel	26913.84
2017 Annual	Ventura (SCC)	LHDT1	Fuel	35804.39
2017 Annual	Los Angeles (SC)	LHDT1	Fuel	316877.6
2017 Annual	Orange (SC)	LHDT1	Fuel	111955.9
2017 Annual	Riverside (SC)	LHDT1	Fuel	63222.44
2017 Annual	San Bernardino (SC)	LHDT1	Fuel	57400.24
2017 Annual	Imperial (SS)	LHDT1	Fuel	9920.081
2017 Annual	Riverside (SS)	LHDT1	Fuel	14834.31
2017 Annual	Kern (MD)	LHDT1	Fuel	12899.55
2017 Annual	Riverside (MD/MDAQMD)	LHDT1	Fuel	3032.728
2017 Annual	Riverside (MD/SCAQMD)	LHDT1	Fuel	2234.553
2017 Annual	Los Angeles (MD)	LHDT1	Fuel	9456.951

2017 Annual	San Bernardino (MD)	LHDT1	Fuel	47306.91
			Total	1761777
			MPG	12.7911
2017 Annual	Alpine (GBV)	MHDT	Fuel	138.9491
2017 Annual	Inyo (GBV)	MHDT	Fuel	1968.78
2017 Annual	Mono (GBV)	MHDT	Fuel	997.095
2017 Annual	Lake (LC)	MHDT	Fuel	3300.037
2017 Annual	El Dorado (LT)	MHDT	Fuel	1126.285
2017 Annual	Placer (LT)	MHDT	Fuel	1063.014
2017 Annual	Amador (MC)	MHDT	Fuel	3715.434
2017 Annual	Calaveras (MC)	MHDT	Fuel	2685.161
2017 Annual	El Dorado (MC)	MHDT	Fuel	6515.305
2017 Annual	Mariposa (MC)	MHDT	Fuel	811.1719
2017 Annual	Nevada (MC)	MHDT	Fuel	5062.529
2017 Annual	Placer (MC)	MHDT	Fuel	1967.074
2017 Annual	Plumas (MC)	MHDT	Fuel	1371.15
2017 Annual	Sierra (MC)	MHDT	Fuel	254.6496
2017 Annual	Tuolumne (MC)	MHDT	Fuel	2417.552
2017 Annual	Monterey (NCC)	MHDT	Fuel	22895.71
2017 Annual	San Benito (NCC)	MHDT	Fuel	3110.356
2017 Annual	Santa Cruz (NCC)	MHDT	Fuel	11156.19
2017 Annual	Del Norte (NC)	MHDT	Fuel	733.5319
2017 Annual	Humboldt (NC)	MHDT	Fuel	6269.149
2017 Annual	Mendocino (NC)	MHDT	Fuel	6514.541
2017 Annual	Sonoma (NC)	MHDT	Fuel	3909.119
2017 Annual	Trinity (NC)	MHDT	Fuel	643.9826
2017 Annual	Lassen (NEP)	MHDT	Fuel	1547.873
2017 Annual	Modoc (NEP)	MHDT	Fuel	763.7506
2017 Annual	Siskiyou (NEP)	MHDT	Fuel	3394.059
2017 Annual	Butte (SV)	MHDT	Fuel	9177.15
2017 Annual	Colusa (SV)	MHDT	Fuel	2593.354
2017 Annual	Glenn (SV)	MHDT	Fuel	2314.005
2017 Annual	Placer (SV)	MHDT	Fuel	22784.8
2017 Annual	Sacramento (SV)	MHDT	Fuel	85083.89
2017 Annual	Shasta (SV)	MHDT	Fuel	10122.15
2017 Annual	Solano (SV)	MHDT	Fuel	5062.365
2017 Annual	Sutter (SV)	MHDT	Fuel	8660.609
2017 Annual	Tehama (SV)	MHDT	Fuel	3539.308
2017 Annual	Yolo (SV)	MHDT	Fuel	35561.24
2017 Annual	Yuba (SV)	MHDT	Fuel	2035.113
2017 Annual	San Diego (SD)	MHDT	Fuel	146956.4
2017 Annual	Alameda (SF)	MHDT	Fuel	109289.3
2017 Annual	Contra Costa (SF)	MHDT	Fuel	33147.93
2017 Annual	Marin (SF)	MHDT	Fuel	10137.53
2017 Annual	Napa (SF)	MHDT	Fuel	7676.685
2017 Annual	San Francisco (SF)	MHDT	Fuel	29805.98

2017 Annual	San Mateo (SF)	MHDT	Fuel	43594.17
2017 Annual	Santa Clara (SF)	MHDT	Fuel	71051.3
2017 Annual	Solano (SF)	MHDT	Fuel	14621.82
2017 Annual	Sonoma (SF)	MHDT	Fuel	26441.06
2017 Annual	Fresno (SJV)	MHDT	Fuel	64400.96
2017 Annual	Kern (SJV)	MHDT	Fuel	72790.24
2017 Annual	Kings (SJV)	MHDT	Fuel	7212.464
2017 Annual	Madera (SJV)	MHDT	Fuel	9624.41
2017 Annual	Merced (SJV)	MHDT	Fuel	17156.46
2017 Annual	San Joaquin (SJV)	MHDT	Fuel	42201.92
2017 Annual	Stanislaus (SJV)	MHDT	Fuel	34369.21
2017 Annual	Tulare (SJV)	MHDT	Fuel	24917.32
2017 Annual	San Luis Obispo (SCC)	MHDT	Fuel	14501.63
2017 Annual	Santa Barbara (SCC)	MHDT	Fuel	23688.59
2017 Annual	Ventura (SCC)	MHDT	Fuel	40135.69
2017 Annual	Los Angeles (SC)	MHDT	Fuel	502618
2017 Annual	Orange (SC)	MHDT	Fuel	218652.7
2017 Annual	Riverside (SC)	MHDT	Fuel	71567.3
2017 Annual	San Bernardino (SC)	MHDT	Fuel	93659.73
2017 Annual	Imperial (SS)	MHDT	Fuel	12166.98
2017 Annual	Riverside (SS)	MHDT	Fuel	24758.75
2017 Annual	Kern (MD)	MHDT	Fuel	7251.271
2017 Annual	Riverside (MD/MDAQMD)	MHDT	Fuel	1190.012
2017 Annual	Riverside (MD/SCAQMD)	MHDT	Fuel	590.8023
2017 Annual	Los Angeles (MD)	MHDT	Fuel	11885.01
2017 Annual	San Bernardino (MD)	MHDT	Fuel	24528.82
			Total	2093857
			MPG	8.133431
2017 Annual	Alpine (GBV)	HHDT	Fuel	2055.485
2017 Annual	Inyo (GBV)	HHDT	Fuel	12415.64
2017 Annual	Mono (GBV)	HHDT	Fuel	8885.331
2017 Annual	Lake (LC)	HHDT	Fuel	5102.593
2017 Annual	El Dorado (LT)	HHDT	Fuel	2652.707
2017 Annual	Placer (LT)	HHDT	Fuel	1116.172
2017 Annual	Amador (MC)	HHDT	Fuel	3382.553
2017 Annual	Calaveras (MC)	HHDT	Fuel	5135.929
2017 Annual	El Dorado (MC)	HHDT	Fuel	4551.386
2017 Annual	Mariposa (MC)	HHDT	Fuel	638.7443
2017 Annual	Nevada (MC)	HHDT	Fuel	32879.15
2017 Annual	Placer (MC)	HHDT	Fuel	39531.32
2017 Annual	Plumas (MC)	HHDT	Fuel	3177.995
2017 Annual	Sierra (MC)	HHDT	Fuel	463.3492
2017 Annual	Tuolumne (MC)	HHDT	Fuel	2552.903
2017 Annual	Monterey (NCC)	HHDT	Fuel	44395.23
2017 Annual	San Benito (NCC)	HHDT	Fuel	47312.81
2017 Annual	Santa Cruz (NCC)	HHDT	Fuel	8844.636

2017 Annual	Del Norte (NC)	HHDT	Fuel	978.1152
2017 Annual	Humboldt (NC)	HHDT	Fuel	25169.62
2017 Annual	Mendocino (NC)	HHDT	Fuel	33420.17
2017 Annual	Sonoma (NC)	HHDT	Fuel	8849.38
2017 Annual	Trinity (NC)	HHDT	Fuel	9716.312
2017 Annual	Lassen (NEP)	HHDT	Fuel	1895.075
2017 Annual	Modoc (NEP)	HHDT	Fuel	1162.66
2017 Annual	Siskiyou (NEP)	HHDT	Fuel	56747.36
2017 Annual	Butte (SV)	HHDT	Fuel	50730.41
2017 Annual	Colusa (SV)	HHDT	Fuel	22227.87
2017 Annual	Glenn (SV)	HHDT	Fuel	18024.28
2017 Annual	Placer (SV)	HHDT	Fuel	27697.63
2017 Annual	Sacramento (SV)	HHDT	Fuel	136180.3
2017 Annual	Shasta (SV)	HHDT	Fuel	85873.41
2017 Annual	Solano (SV)	HHDT	Fuel	61273.16
2017 Annual	Sutter (SV)	HHDT	Fuel	47461.47
2017 Annual	Tehama (SV)	HHDT	Fuel	59617.79
2017 Annual	Yolo (SV)	HHDT	Fuel	43434.6
2017 Annual	Yuba (SV)	HHDT	Fuel	4670.043
2017 Annual	San Diego (SD)	HHDT	Fuel	316393.9
2017 Annual	Alameda (SF)	HHDT	Fuel	296199.3
2017 Annual	Contra Costa (SF)	HHDT	Fuel	96048.96
2017 Annual	Marin (SF)	HHDT	Fuel	14218.41
2017 Annual	Napa (SF)	HHDT	Fuel	19096.62
2017 Annual	San Francisco (SF)	HHDT	Fuel	17929.13
2017 Annual	San Mateo (SF)	HHDT	Fuel	23253.41
2017 Annual	Santa Clara (SF)	HHDT	Fuel	159572.8
2017 Annual	Solano (SF)	HHDT	Fuel	45151.15
2017 Annual	Sonoma (SF)	HHDT	Fuel	31230.06
2017 Annual	Fresno (SJV)	HHDT	Fuel	343016.4
2017 Annual	Kern (SJV)	HHDT	Fuel	588222.9
2017 Annual	Kings (SJV)	HHDT	Fuel	119201.7
2017 Annual	Madera (SJV)	HHDT	Fuel	85864.07
2017 Annual	Merced (SJV)	HHDT	Fuel	216739
2017 Annual	San Joaquin (SJV)	HHDT	Fuel	193715.2
2017 Annual	Stanislaus (SJV)	HHDT	Fuel	143337.3
2017 Annual	Tulare (SJV)	HHDT	Fuel	122397.1
2017 Annual	San Luis Obispo (SCC)	HHDT	Fuel	29188.04
2017 Annual	Santa Barbara (SCC)	HHDT	Fuel	35602.01
2017 Annual	Ventura (SCC)	HHDT	Fuel	56054.03
2017 Annual	Los Angeles (SC)	HHDT	Fuel	1116437
2017 Annual	Orange (SC)	HHDT	Fuel	214738.5
2017 Annual	Riverside (SC)	HHDT	Fuel	280685.1
2017 Annual	San Bernardino (SC)	HHDT	Fuel	280584.6
2017 Annual	Imperial (SS)	HHDT	Fuel	107641.2
2017 Annual	Riverside (SS)	HHDT	Fuel	171335.2
2017 Annual	Kern (MD)	HHDT	Fuel	118132.9

2017 Annual	Riverside (MD/MDAQMD)	HHDT	Fuel	50625.93
2017 Annual	Riverside (MD/SCAQMD)	HHDT	Fuel	53004.99
2017 Annual	Los Angeles (MD)	HHDT	Fuel	34636.7
2017 Annual	San Bernardino (MD)	HHDT	Fuel	322075.9
			Total	6622553
			MPG	5.699996

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APPENDIX 3.3:
SCREENING TABLES FOR GHG IMPLEMENTATION MEASURES

Pages 13-21, Table 2: Screening Table for GHG Implementation Measures for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Implementation Measure IM E5: Energy Efficiency for Commercial/Public Development			
E5.A Building Envelope			
E5.A.1 Insulation	<p><i>Baseline standard(walls R-13; roof/attic R-30)</i> <i>Modestly Enhanced Insulation (walls R-13, roof/attic R-38)</i> Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) <i>Greatly Enhanced Insulation (spray foam insulated walls R-15 or higher, roof/attic R-38 or higher)</i> <i>Title 24 standard (required)</i> <i>Modestly Enhanced Insulation (5% > Title 24)</i> <i>Enhanced Insulation (15%> Title 24)</i> <i>Greatly Enhanced Insulation (20%> Title 24)</i></p>	<p>0 points 15 points 18 points 20 points 4 points 8 points 12 points</p>	18
E5.A.2 Windows	<p>Title 24<i>Baseline standard (required)</i> <i>Modestly Enhanced Window Insulation (5% > Title 24)</i> Enhanced Window Insulation (15%> Title 24) <i>Greatly Enhanced Window Insulation (20%> Title 24)</i></p>	<p>0 points 4-7 points 8 points 12 points</p>	8
E5.A.3 Cool Roofs	<p><i>Modest Cool Roof (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance)</i> <i>Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance)</i> <i>Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)</i> <i>Title 24 standard (required)</i> <i>Modestly Enhanced Insulation (5% > Title 24)</i> <i>Enhanced Insulation (15%> Title 24)</i> <i>Greatly Enhanced Insulation (20%> Title 24)</i></p>	<p>12 points 14 points 16 points 0 points 4 points 8 points 12 points</p>	
E5.A.4 Air Infiltration	<p>Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. <i>Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent)</i> <i>Blower Door HERS Verified Envelope Leakage or equivalent</i> <i>Title 24 standard (required)</i> <i>Modest Building Envelope Leakage (5% > Title 24)</i> <i>Reduced Building Envelope Leakage (15%> Title 24)</i> <i>Minimum Building Envelope Leakage (20% > Title 24)</i></p>	<p>12 points 10 points 0 points 4 points 8 points 12 points</p>	
E5.A.5 Thermal Storage of Building	<p>Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. <i>Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)Thermal storage designed to reduce heating/cooling by 5°F within the building</i> <i>Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials)Thermal storage to reduce heating/cooling by 10°F within the building</i> <i>Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.</i></p>	<p>6-4 points 12-6 points</p>	
E5.B Indoor Space Efficiencies			
E5.B.1 Heating/Cooling Distribution System	<p><i>Minimum Duct Insulation (R-4.2 required)</i> <i>Modest Duct insulation (R-6)</i> Enhanced Duct Insulation (R-8) <i>Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)Title 24 standard (required)</i> <i>Modest Distribution Losses (5% > Title 24)</i> <i>Reduced Distribution Losses (15%> Title 24)</i> <i>Greatly Reduced Distribution Losses (15%> Title 24)</i></p>	<p>0 points 4-8 points 8-10 points 124 points</p>	10

**It should be noted that E5.A.1, E5.A.2, E5.B.1, and E5.B.2 apply to the conditioned (office) space only.

Feature	Description	Assigned Point Values	Project Points
E5.B.2 Space Heating/ Cooling Equipment	<i>Baseline HVAC Efficiency (EER 13/60% AFUE or 7.7 HSPF)</i> Improved Efficiency HVAC (EER 14/65% AFUE or 8 HSPF) <i>High Efficiency HVAC (EER 15/72% AFUE or 8.5 HSPF)</i> <i>Very High Efficiency HVAC (EER 16/80% AFUE or 9 HSPF)</i> Title 24 standard (required) <i>Efficiency HVAC (5% > Title 24)</i> <i>High Efficiency HVAC (15% > Title 24)</i> <i>Very High Efficiency HVAC (20% > Title 24)</i>	0 points 7 points 8 points 12 points 0 points 4 points 8 points 12 points	7
E5.B.3 Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
E5.B.4 Water Heaters	<i>2008 Minimum Efficiency (0.57 Energy Factor)</i> Title 24 standard (required) <i>Improved Efficiency Water Heater (0.675 Energy Factor)</i> <i>Efficiency Water Heater (Energy Star conventional that is 5% > Title 24)</i> High Efficiency Water Heater (0.72 Energy Factor) <i>High Efficiency Water Heater (Conventional water heater that is 15% > Title 24)</i> <i>Very High Efficiency Water Heater (0.92 Energy Factor)</i> <i>High Efficiency Water Heater (Conventional water heater that is 20% > Title 24)</i> <i>Solar Pre-heat System (0.2 Net Solar Fraction)</i> <i>Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)</i> <i>Solar Water Heating System</i>	0 points 14 points 4 points 16 points 8 points 19 points 12 points 4 points 8 points 14 points	16
E5.B.5 Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. All peripheral rooms within building have at least one window or skylight All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day All rooms daylighted to at least 1,000 00 lumens	1 point 5 points 7 points	1
E5.B.6 Artificial Lighting	Title 24 Baseline standard (required) <i>Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt)</i> <i>High Efficiency Lights (50% of in-unit fixtures are high efficacy)</i> Very High Efficiency Lights (100% of in-unit fixtures are high efficacy) Efficient Lights (5% > Title 24) High Efficiency Lights (LED, etc. 15% > Title 24) Very High Efficiency Lights (LED, etc. 20% > Title 24)	0 points 4 points 9 6 points 12 8 points 14 points	14
E5.B.7 Appliances	Star Commercial Refrigerator (new) <i>Energy Star Commercial Dish Washer (new)</i> <i>Energy Star Commercial Cloths Washing</i> Title 24 standard (required) <i>Efficient Appliances (5% > Title 24)</i> <i>High Efficiency Energy Star Appliances (15% > Title 24)</i> <i>Very High Efficiency Appliances (20% > Title 24)</i>	4 points 4 points 4 points 0 points 4 points 8 points 12 points	4
E5.C Miscellaneous Commercial Building Efficiencies			
E5.C.1 Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	64 points	6
Shading	<i>At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.</i>	6 Points	
E5.C.2 Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	

**It should be noted that E5.A.1, E5.A.2, E5.B.1, and E5.B.2 apply to the conditioned (office) space only.
 County of Riverside General Plan Amendment No. 960
 August 2015

Feature	Description	Assigned Point Values	Project Points
E5.C.3 Existing Commercial building Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing commercial buildings within the unincorporated County is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Riverside County Planning Department. The decision to allow applicants to participate in this program will be evaluated based upon, but not limited to the following: Will the energy efficiency retrofit project benefit low income or disadvantaged communities? Does the energy efficiency retrofit project provide co-benefits important to the County? Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	
Implementation Measure IM E6: New Commercial/Industrial Renewable Energy			
E6.A.1 Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power ³ provided augments: Solar Ready Roofs (sturdy roof and electric hookups) 10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project 70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	2 points 8 points 14 points 20 points 26 points 32 points 38 points 44 points 50 points 56 points 62 points	
E6.A.2 Wind turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power ⁴ provided augments: 10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project 70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project	8 points 14 points 20 points 26 points 32 points 38 points 44 points 50 points 56 points 62 points	
E6.A.3 Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case by case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
E6.A.4 Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	

³ *Ibid.*

⁴ *Ibid.*

Feature	Description	Assigned Point Values	Project Points
Implementation Measure IM W1: Water Use Reduction Initiative			
W1.C Irrigation and Landscaping			
W1.C.1 Water Efficient Landscaping	Limit conventional turf to < 20% of each lot (required) Eliminate conventional turf from landscaping Eliminate turf and only provide drought tolerant plants <i>Only California Native landscape that requires no or only supplemental irrigation</i> Xeroscaping that requires no irrigation	0 points 3 points 4 points 6-8 points	4
W1.C.2 Water Efficient irrigation systems	Low precipitation spray heads < .75"/hr or drip irrigation Weather based irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use) Drip irrigation Smart irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)	1 point 5 points 4 point 6 points	
W1.C.3 Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
W1.D Potable Water			
W1.D.1 Showers	Water Efficient Showerheads (2.0 gpm) Title 24 standard (required) EPA High Efficiency Showerheads (15% > Title 24)	0 points 3 points	
W1.D.2 Toilets	Water Efficient Toilets/Urinals (1.5gpm) <i>Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)</i> Title 24 standard (required) EPA High Efficiency Toilets/Urinals (15% > Title 24) Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	3 points 4 points 0 points 3 points 3 points	3
W1.D.3 Faucets	Water Efficient faucets (1.28gpm) Title 24 standard (required) EPA High Efficiency faucets (15% > Title 24)	3 points 0 points 3 points	3
W1.D.4 Commercial Dishwashers	Water Efficient dishwashers (20% water savings) Title 24 standard (required) EPA High Efficiency dishwashers (20% water savings)	0 points 4 points	
W1.D.5 Commercial Laundry Washers	Water Efficient laundry (15% water savings) High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings) Title 24 standard (required) EPA High Efficiency laundry (15% water savings) EPA High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings)	3 points 6 points 0 points 3 points 6 points	
W1.D.6 Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Implementation Measure IM W2: Increase Reclaimed Water Use			
W2.A.1 Recycled Water	Graywater (purple pipe) irrigation system on site	5 points	
Implementation Measure IM T1: Employment Based Trip and VMT Reduction Policy			
T1.A.1 Alternative Scheduling	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks. Provide flexibility in scheduling such that at least 30% of employees participate in 9/80 work week, 4-day/40-hour work week, or telecommuting 1.5 days/week.	5 points	

Feature	Description	Assigned Point Values	Project Points
T1.A.2 Car/Vanpools	Car/vanpool program Car/vanpool program with preferred parking Car/vanpool with guaranteed ride home program Subsidized employee incentive car/vanpool program Combination of all the above	1 point 2 points 3 points 5 points 6 points	2
T1.A.3 Employee Bicycle/ Pedestrian Programs	Complete sidewalk to residential within ½ mile Complete bike path to residential within 3 miles Bike lockers and secure racks Showers and changing facilities Subsidized employee walk/bike program Note: combine all applicable points for total value	1 point 1 point 1 point 2 points 3 points	
T1.A.4 Shuttle/Transit Programs	Local transit within ¼ mile Light rail transit within ½ mile Shuttle service to light rail transit station Guaranteed ride home program Subsidized Transit passes Note: combine all applicable points for total value	1 point 3 points 5 points 1 points 2 points	
T1.A.5 CTR	Employer based Commute Trip Reduction (CTR). CTRs apply to commercial, offices, or industrial projects that include a reduction of vehicle trip or VMT goal using a variety of employee commutes trip reduction methods. The point value will be determined based upon a TIA that demonstrates the trip/VMT reductions. Suggested point ranges: Incentive based CTR Programs (1-8 points) Mandatory CTR programs (5-20 points)	TBD	
T1.A.6 Other Trip Reduction Measures	Point values for other trip or VMT reduction measures not listed above may be calculated based on a TIA and/or other traffic data supporting the trip and/or VMT reductions.	TBD	
Implementation Measure IM T3: Mixed Use Development			
T3.B.1 Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled	TBD	
T3.B.2 Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Implementation Measure IM T4: Preferential Parking			
T4.A.1 Parking	Provide reserved preferential parking spaces for car-share, carpool, and ultra-low or zero emission vehicles. Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.	1 point 1 point	1
Implementation Measure IM T5: Signal Synchronization and Intelligent Traffic Systems			
T5.B.1 Signal improvements	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. Synchronize signals along arterials used by project. Connect signals along arterials to existing ITS.	1 point/signal 3 points/ signal	
Implementation Measure IM T6: Bicycle and Pedestrian Infrastructure			
T6.B.1 Sidewalks	Provide sidewalks on one side of the street (required) Provide sidewalks on both sides of the street Provide pedestrian linkage between commercial and residential land uses within 1 mile	0 points 1 point 3 points	

Feature	Description	Assigned Point Values	Project Points
T6.B.2 Bicycle paths	Provide bicycle paths within project boundaries Provide bicycle path linkages between commercial and other land uses Provide bicycle path linkages between commercial and transit	TBD 2 points 5 points	
Implementation Measure IM T7: Electric Vehicle Use			
T7.B.1 Electric Vehicle Recharging	Provide circuit and capacity in garages/parking areas for installation of electric vehicle charging stations. Install electric vehicle charging stations in garages/parking areas	2 points/area 8 pts/station	
Implementation Measure IM T8: Anti-Idling Enforcement			
T8.A.1 Commercial Vehicle Idling Restriction	All commercial vehicles are restricted to 5-minutes or less per trip on site and at loading docks.	2 points Required of all Commercial	2
Implementation Measure IM T9: Increase Public Transit			
T9.B.1 Public Transit	The point value of a projects ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. Increased transit accessibility (1-15 points)	TBD	
Implementation Measure IM L2: Prohibit Gas-Powered Landscaping Equipment			
L2.B.1 Landscaping Equipment	Electric lawn equipment including lawn mowers, leaf blowers and vacuums, shredders, trimmers, and chain saws are available. When electric landscape equipment is used in place of conventional gas-powered equipment, direct GHG emissions from natural gas combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment. Project provides electrical outlets on the exterior of all buildings so that electric landscaping equipment is compatible with all built facilities.	2 points	
Implementation Measure IM SW1: 80 Percent Solid Waste Diversion Program			
SW1.B.1 Recycling	County initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The following recycling features will help the County fulfill this goal: Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up Provide commercial/industrial recycling programs that fulfills an on-site goal of 80% diversion of solid waste	2 points 5 points	
Implementation Measure IM SW2: Construction and Demolition Debris Diversion Program			
SW2.B.1 Recycling of Construction/ Demolition Debris	Recycle 2% of debris (required) Recycle 5% of debris Recycle 8 % of debris Recycle 10% of debris Recycle 12% of debris Recycle 15% of debris Recycle 20% of debris	0 points 1 point 2 points 3 points 4 points 5 points 6 points	6
Implementation Measure IM O1: Other GHG Reduction Feature Implementation			
<i>O1.A1 Other GHG Emissions Reduction Features</i>	<i>This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods and protocols.</i>	<i>TBD</i>	
Total Points Earned by Commercial/Industrial Project:			105

Page 22, Below “References”

Association of Environmental Professionals (AEP) White Paper: Alternative Approaches to Analyzing Greenhouse Gases and Global Climate Change Impacts in CEQA Documents, June 2007.