

Appendix 4.3-1

# Energy Technical Memorandum



Prepared by

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Expect More. Experience Better.



## MEMORANDUM

To: City of Artesia

From: Kimley-Horn and Associates

Date: March 17, 2023

Subject: Artesia Place Project (Artesia Boulevard Corridor Specific Plan Amendment) – Energy Technical Memorandum

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### 1.0 Purpose

The purpose of this technical memorandum is to evaluate potential short- and long-term energy consumption of the Artesia Place Project (Artesia Boulevard Corridor Specific Plan [ABCSP] Amendment) (Project) and determine their level of impact on the environment.

### 2.0 Project Location and Setting

The Project site is in the City of Artesia (City), approximately 14 miles southeast of downtown Los Angeles. The Project site consists of one approximately 3.3-acre parcel (Assessor Parcel Number (APN) 7035-016-064) located at 11709 Artesia Boulevard. The Project site is generally bound by roadways, with Artesia Boulevard on the south, Alburtis Avenue on the east, and Flallon Avenue on the west.

The Project site is at the northeast portion of the 21-acre ABCSP area, which extends along Artesia Boulevard, generally between Corby Avenue on the east and Gridley Road on the west. The Project site is at the eastern extent of ABCSP's Quadrant 2, which is comprised of approximately 6.0 acres located north of Artesia Boulevard between Alburtis Avenue on the east and Roseton Avenue on the west. Two major freeways provide regional access to the Project site: Artesia Freeway (State Route 91 [SR-91]) to the north; and Interstate 605 (I-605) to the west. From SR-91, access to the Project site is provided via Pioneer Boulevard, which is east of the Project site. From I-605, access to the Project site is provided via Artesia Boulevard, which bisects the ABCSP area. Local access to the Project site is provided via Artesia Boulevard, which is a four-lane divided arterial roadway oriented east-west through the ABCSP area. Local access is also provided via Pioneer Boulevard, which is a four-lane arterial oriented north-south to the west of the Project site.

The Project site is currently vacant. California Dairies, Inc., a dairy manufacturing plant totaling approximately 27,290 gross square feet (GSF) occupied the Project site until it was demolished in 2022. All existing onsite utility connections remain capped and abandoned onsite. The Project site is generally surrounded by residential, business park, commercial, and light industrial land uses.

### 3.0 Project Description

The Project proposes the construction and operation of a mixed-use development comprised of 80 dwelling units (DU) and approximately 11,257 GSF of non-residential (commercial and office) land uses, as described below. To allow the proposed development, the Applicant proposes to amend the ABCSP. The proposed Zoning Code Text Amendment (Specific Plan Amendment) would amend the ABCSP to permit residential uses on the Project site, establish a maximum allowable development within the Project site, and amend the ABCSP's Design Standards and Guidelines (among other chapters). In addition to the Zoning Code Text Amendment, the Project seeks approval of the following entitlements: a General Plan Amendment; Design Review; Development Agreement; Vesting Tentative Tract Map No. 83834; and CEQA EIR certification.

The Project would construct a mixed-use development generally comprised of two portions – a commercial portion and a residential portion – connected by pedestrian walkways. In total, the Project proposes 80 DU and approximately 11,257 GSF of non-residential (commercial and office) land uses, including the components summarized in [Table 1: Project Development Summary](#) below:

<b>Table 1: Project Development Summary</b>					
Land Use	Residential (DU)	Non-Residential (GSF)			
		Office	Restaurant	Retail	Total
Townhomes	59				
Mixed-Use Carriage Townhomes (Commercial Ground Floor)	4		1,725	1,725	3,450
Shopkeeper Units (Commercial Condominiums with Townhomes above)	8		1,332	1,332	2,664
Commercial			1,350	1,350	2,700
Live/Work Townhomes	9	2,443			2,443
<b>Total</b>	<b>80</b>	<b>2,443</b>	<b>4,407</b>	<b>4,407</b>	<b>11,257</b>
DU = dwelling units; GSF = gross square feet					

The following proposed land uses would be developed at a density of 23.2 dwelling units per acre (DU/AC) and floor area ratio (FAR) of 1.21:

- Townhomes: 10 buildings with 59 three-story townhome units.
- Mixed-Use Carriage Townhomes: One mixed-use building with approximately 3,450 GSF of commercial uses on the ground level and 4 carriage-type townhome units above;
- Shopkeeper Units: Two buildings with 8 commercial condominiums totaling approximately 2,664 GSF on the ground level and 8 townhome units above;
- Commercial: One building with approximately 2,700 GSF of commercial uses; and
- Live/Work Townhomes: Two buildings with approximately 2,443 GSF of office uses and 9 townhome units.

The Project is designed to be a mixed-use, pedestrian-oriented, and placemaking development with various commercial opportunities. The various buildings are linked by a central pedestrian walkway through a series of landscaped courtyards. The Project site is divided into two portions: the northern portion is bisected by the central pedestrian walkway, pool, and pool building and consists of traditional paseo rowtown-inspired residential clustering around a recreation area; and the southern portion fronting Artesia Boulevard consists of the urban commercial mixed-use buildings.

#### **4.0 Project Phasing and Construction**

The anticipated construction timeline, contingent on planning, zoning, and construction documents approval, is anticipated to start September of 2023 and end August 2025 (24 month timeline).

#### **5.0 Energy Conservation**

In 1975, largely in response to the 1970's oil crisis, the California State Legislature adopted Assembly Bill (AB) 1575, which created the California Energy Commission (CEC). The CEC's statutory mission is to forecast future energy needs, license thermal power plants of 50 megawatts (MW) or larger, develop energy technologies and renewable energy resources, plan for and direct State responses to energy emergencies, and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) to require Environmental Impact Reports (EIRs) to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F, *Energy Conservation*, in the California Environmental Quality Act Guidelines (State CEQA Guidelines). State CEQA Guidelines Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy.

In addition, the California Natural Resources Agency finalized updates to the State CEQA Guidelines in December 2018. New State CEQA Guidelines Section 15126.2(b) treats "wasteful, inefficient, or unnecessary" energy consumption as a significant environmental impact. State CEQA guidelines Section 15126.4 (a)(1)(C) states "Energy conservation measures, as well as other appropriate mitigation measures, shall be discussed when relevant. Examples of energy conservation measures are provided in Appendix F". As a result, energy thresholds have been incorporated into State CEQA Guidelines Appendix G. This technical memorandum has been prepared to assess energy impacts in accordance with State CEQA Guidelines Appendix G.

## 6.0 Environmental Setting

Energy consumption is analyzed in this technical memorandum due to the potential direct and indirect environmental Project impacts. Such impacts include the depletion of nonrenewable resources and emissions of pollutants during the construction and operational phases.

### Electricity/Natural Gas Services

Southern California Edison (SCE) provides electrical services to the City and Los Angeles County (County) through State-regulated public utility contracts. Over the past 15 years, California's electricity generation has undergone a transition. Historically, California has relied heavily on oil- and gas-fired plants to generate electricity. Spurred by regulatory measures and tax incentives, California's electrical system has become more reliant on renewable energy sources (e.g., cogeneration, wind energy, solar energy, geothermal energy, biomass conversion, transformation plants, and small hydroelectric plants). Unlike petroleum production, electricity generation is not usually tied to the location of the fuel source and can be delivered great distances via the electrical grid. The generating capacity of a unit of electricity is expressed in MW. Net generation refers to the gross amount of energy produced by a unit, minus the amount of energy the unit consumes. Generation is typically measured in megawatt-hours (MWh), kilowatt-hours (kWh), or gigawatt-hours (GWh).

The Southern California Gas Company (SoCalGas) provides natural gas services to the City and County. Natural gas is a hydrocarbon fuel found in reservoirs beneath the Earth's surface and is composed primarily of methane (CH<sub>4</sub>). It is used for space and water heating, process heating and electricity generation, and as transportation fuel. Use of natural gas to generate electricity is expected to increase in coming years because it is a relatively clean alternative to other fossil fuels (e.g., oil and coal). In California and throughout the western United States, many new electrical generation plants fired by natural gas are being brought online. Thus, there is great interest in importing liquefied natural gas from other parts of the world. California's natural gas-fired electric generation increased by 7 percent in 2020, accounting for 48 percent of in-State generation.<sup>1</sup>

The City's ongoing development review process provides opportunities for privately owned utility companies to review, comment, and provide input on all development proposals. The input facilitates a detailed project review by service purveyors to assess the potential demands for utility services on a project-by-project basis. The ability of utility providers to provide services concurrently with each project is evaluated during the development review process. Utility companies are bound by contract to update energy systems to meet any additional demand.

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<sup>1</sup> California Energy Commission, *2020 Total System Electric Generation*, <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>, accessed May 17, 2022.

### Energy Consumption

Energy consumption is typically quantified using the British Thermal Unit (BTU). Total annual energy consumption in California was 6,922.8 trillion BTUs in 2020 (the most recent year for which this specific data is available).<sup>2</sup> Of California's total annual energy consumption in 2020, the breakdown by sector is 34.0 percent transportation, 24.6 percent industrial, 19.6 percent commercial, and 21.8 percent residential.<sup>3</sup> Electricity and natural gas in California are generally consumed by stationary users such as residences, commercial, and industrial uses, whereas petroleum consumption is generally accounted for by transportation-related energy use. In 2021, California's taxable gasoline sales (including aviation gasoline) accounted for 13,060,407,775 gallons of gasoline.<sup>4</sup>

The County's electricity consumption from 2010 to 2020 is shown in Table 2: Electricity Consumption in Los Angeles County 2010-2020. As indicated in Table 2, the County's electricity consumption increased steadily between 2010 and 2014 and decreased between 2015 and 2020.

<b>Table 2: Electricity Consumption in Los Angeles 2010-2020</b>	
<b>Year</b>	<b>Electricity Consumption (in millions of kilowatt hours)</b>
2010	68,244
2011	68,180
2012	69,248
2013	68,342
2014	69,924
2015	69,503
2016	69,390
2017	68,632
2018	67,887
2019	66,805
2020	65,650
Source: California Energy Commission, <i>Electricity Consumption by County</i> , <a href="http://www.ecdms.energy.ca.gov/">http://www.ecdms.energy.ca.gov/</a> , accessed June 15, 2022.	

The County's natural gas consumption from 2010 to 2020 is shown in Table 3: Natural Gas Consumption in Los Angeles County 2010-2020. The County's natural gas consumption relatively

<sup>2</sup> U.S. Energy Information Administration, *Table F33: Total energy consumption, price, and expenditure estimates, 2020*, [https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep\\_fuel/html/fuel\\_te.html&sid=CA](https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=CA), accessed June 28, 2022.

<sup>3</sup> U.S. Energy Information Administration, *California State Profile and Energy Estimates, California Energy Consumption by End-Use Sector, 2019*, <https://www.eia.gov/state/?sid=CA#tabs-2>, accessed May 17, 2022.

<sup>4</sup> California Department of Tax and Fee Administration, *January 2022 – Motor Vehicle Fuel 10 Year Reports*, <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>, accessed May 17, 2022.

decreased between 2010 and 2015 with a slight increase in 2013, increased between 2016 and 2019, and decreased in 2020.

<b>Table 3: Natural Gas Consumption in Los Angeles County 2010-2020</b>	
<b>Year</b>	<b>Natural Gas Consumption (in millions of therms)</b>
2010	3,047
2011	3,055
2012	2,985
2013	3,065
2014	2,794
2015	2,761
2016	2,878
2017	2,956
2018	2,922
2019	3,048
2020	2,937
Source: California Energy Commission, <i>Natural Gas Consumption by County</i> , <a href="http://www.ecdms.energy.ca.gov/">http://www.ecdms.energy.ca.gov/</a> , accessed June 15, 2022.	

The County's automotive fuel consumption from 2011 to 2021 is shown in Table 4: Automotive Fuel Consumption in Los Angeles County 2011-2021. As shown in Table 4, the County's on-road automotive fuel consumption remained relatively stable from 2011 to 2014, increased in 2015 and 2016, and remained relatively stable between 2016 and 2021 with a slight decrease in 2020. Heavy-duty vehicle fuel consumption increased between 2012 and 2017, decreased between 2018 and 2020, and increased in 2021.

<b>Table 4: Automotive Fuel Consumption in Los Angeles County 2011-2021</b>		
<b>Year</b>	<b>On-Road Automotive Fuel Consumption (gallons)</b>	<b>Heavy-Duty Vehicle/Diesel Fuel Consumption (Construction Equipment) (gallons)</b>
2011	3,745,485,930	434,920,563
2012	3,714,743,617	430,477,995
2013	3,720,160,331	453,247,552
2014	3,754,124,477	457,345,104
2015	3,864,098,889	462,749,587
2016	3,990,292,164	489,895,770
2017	3,961,448,725	506,904,226
2018	3,914,668,171	494,484,395
2019	3,844,847,561	492,605,543
2020	3,381,588,164	491,579,947
2021	3,816,162,983	507,214,212
Source: California Air Resources Board, EMFAC2021.		



## 7.0 Regulatory Setting

The following is a description of Federal, State, and local environmental laws and policies related to energy consumption that are relevant to the proposed Project.

### **California's Energy Efficiency Standards for Residential and Non-Residential Buildings (Title 24)**

In June 1977, the California Energy Resources Conservation and Development Commission (now the CEC) adopted energy conservation standards for new residential and nonresidential buildings, which are updated every three years (California Code of Regulations Title 24, Part 6). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. On May 9, 2018, the CEC adopted the 2019 Building Energy Efficiency Standards, which took effect on January 1, 2020.

The 2019 Standards improved upon the 2016 Standards. Under 2019 Standards, residential buildings are approximately 7 percent more energy efficient, and when the required rooftop solar is factored in for low-rise residential construction, residential buildings are approximately 53 percent more energy efficient than those built to meet 2016 Standards. The Project is subject to the 2019 Energy Code, assuming the permit applications are applied for prior to January 1, 2023. Should the Project's applications be applied for on or after January 1, 2023, the Project would be subject to the 2022 Energy Code.

On August 11, 2021, the CEC adopted the 2022 Energy Code. In December 2021, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. Among other updates like strengthened ventilation standards for gas cooking appliances, the 2022 Energy Code includes updated standards such as new electric heat pump requirements for residential uses, schools, offices, banks, libraries, retail, and grocery stores; the promotion of electric-ready requirements for new homes including the addition of circuitry for electric appliances, battery storage panels, and dedicated infrastructure to allow for the conversion from natural gas to electricity; and the expansion of solar photovoltaic and battery storage standards to additional land uses including high-rise multi-family residences, hotels and motels, tenant spaces, offices (including medical offices and clinics), retail and grocery stores, restaurants, schools, and civic uses (including theaters auditoriums, and convention centers). Newly constructed commercial buildings would also be required to have a solar photovoltaic (PV) array and an energy storage system (ESS) installed. Projects whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a Statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California



Department of Housing and Community Development. The CALGreen Code requires new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. The CALGreen Code also provides voluntary measures (CALGreen Tier 1 and Tier 2) that local governments may adopt which encourage or require additional measures in the five green building topics. The CEC adopted the 2022 CALGreen Code in December 2021, which will go into effect on January 1, 2023. The 2022 CALGreen code focuses on battery storage system controls, demand management, heat pump space and water heating, and building electrification.

### **California Public Utilities Commission Energy Efficiency Strategic Plan**

The California Public Utilities Commission (CPUC) prepared an Energy Efficiency Strategic Plan in 2011 with the goal of promoting energy efficiency and a reduction in greenhouse gases. AB 1109, adopted in 2007, also serves as a framework for lighting efficiency. Assembly Bill 1109 requires the State Energy Resources Conservation and Development Commission to adopt minimum energy efficiency standards as a means to reduce average Statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018. According to the Energy Efficiency Strategic Plan, lighting comprises approximately one-fourth of California's electricity use while non-residential sector exterior lighting (parking lot, area, walkway, and security lighting) consumption comprises 1.4 percent of California's total electricity use, much of which occurs during limited occupancy periods.

### **Renewable Portfolio Standard**

In 2002, California established its Renewable Portfolio Standard (RPS) program with the goal of increasing the annual percentage of renewable energy in the State's electricity mix by the equivalent of at least 1 percent of sales, with an aggregate total of 20 percent by 2017. The CPUC subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code Section 399.15(b)(1)). Then-Governor Schwarzenegger signed Executive Order S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the RPS by signing Executive Order S-21-09, which directs the California Air Resources Board (CARB) under its AB 32 authority to enact regulations to help the State meet its RPS goal of 33 percent renewable energy by 2020. In September 2010, the CARB adopted its Renewable Electricity Standard regulations, which require all of the State's load-serving entities to meet this target. In October 2015, then-Governor Brown signed into legislation Senate Bill (SB) 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030.

Signed in 2018, SB 100 revised SB 350's goal, revising it to achieve the 50 percent renewable resources target by December 31, 2026 and a 60 percent target by December 31, 2030. SB 100 also established

a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

## **8.0 CEQA Thresholds and Methodology**

In accordance with State CEQA Guidelines, a project's effects are evaluated to determine whether they would result in a significant adverse environmental impact. This memorandum will focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria used to determine the significance of impacts may vary depending on the nature of the project. According to State CEQA Guidelines Appendix G, the proposed Project would have a significant impact related to energy, if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation; and/or
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

The impact analysis focuses on the three energy sources that are relevant to the proposed Project: electricity, natural gas, transportation fuel for construction and operation.

## 9.0 Impacts and Mitigation Measures

**Threshold a) Would the Project result in wasteful, inefficient, or unnecessary consumption of energy resources?**

The Project's estimated construction and operational energy consumption is summarized in [Table 5: Project and Countywide Energy Consumption](#).

<b>Table 5: Project and Countywide Energy Consumption</b>			
<b>Energy Type</b>	<b>Project Annual Energy Consumption</b>	<b>Los Angeles County Annual Energy Consumption<sup>1,2</sup></b>	<b>Percentage Increase Countywide</b>
<b>Operational Electricity and Natural Gas</b>			
Electricity Consumption	945,973 kWh	65,649,878,013 kWh	0.001%
Natural Gas Consumption <sup>3</sup>	23,100 therms	2,936,687,098 therms	0.001%
<b>Automotive Fuel<sup>4</sup></b>			
<b>Project Construction<sup>5,6</sup></b>			
Diesel	114,961 gallons	618,608,022 gallons	0.019%
Gasoline	33,462 gallons	3,733,376,187 gallons	0.001%
<b>Project Operations</b>			
Diesel	1,140 gallons	618,608,022 gallons	0.0002%
Gasoline	228,527 gallons	3,733,376,187 gallons	0.006%
Notes:			
1. The Project's annual electricity and natural gas consumption is compared with Los Angeles County's total annual consumption in 2020.			
2. The Project's annual automotive fuel consumption is compared with Los Angeles County's projected fuel consumption for 2025.			
3. The residential component of the Project would utilize electric appliances, stoves, and heating systems, and would not require natural gas. However, this analysis conservatively assumes on-site residences would require natural gas based on the default assumptions modeled in the California Emissions Estimator Model (CalEEMod version 2020.4.0).			
4. Los Angeles County's annual fuel consumption is from the California Air Resources Board EMFAC2021 model.			
5. Project construction fuel consumption is based on equipment and load factors CalEEMod version 2020.4.0.			
6. The Project's estimated construction fuel consumption is based on the Project's construction equipment list timing/phasing, and hours of duration for construction equipment, as well as vendor, hauling, and construction worker trips.			
Refer to <a href="#">Appendix A: Energy Data</a> for assumptions used in this analysis.			

### Construction-Related Energy Consumption

During Project construction, little to no electrical and natural gas consumption is anticipated since construction vehicles and equipment are generally diesel-powered. During construction, the Project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during grading, paving, and building construction. Fuel energy consumed during construction would be temporary in nature and would not represent significant consumption of energy resources. Some incidental energy conservation would occur during construction through compliance with State requirements that equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with the latest U.S. Environmental Protection Agency (EPA) and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Substantial reductions in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to produce than non-recycled materials. The incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials (e.g., lumber and gas) would not substantially increase energy consumption, compared to annual local and regional consumption for construction materials. It is reasonable to assume that production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest in minimizing the cost of doing business.

As indicated in [Table 5](#), the Project's construction-related diesel and gasoline fuel consumption would be approximately 114,961 gallons and approximately 33,462 gallons, respectively, which would result in a nominal increase in fuel use in the County. Construction-related off-road automotive fuel consumption would constitute approximately 0.019 percent of the County's diesel consumption and approximately 0.001 percent of the County's gasoline consumption. As such, Project construction would have a minimal effect on the local and regional fuel energy supplies. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. A less than significant impact would occur in this regard.

### **Operational Energy Consumption**

#### **Transportation Energy Consumption**

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NTSA) is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. [Table 5](#) provides an estimate of the Project's operational annual fuel consumption by vehicles traveling to and

from the Project site. As indicated in [Table 5](#), Project operations are estimated to consume approximately 1,140 gallons of diesel fuel and approximately 228,527 gallons of gasoline fuel per year. The Project's operational on-road automotive fuel consumption (i.e., vehicle trips to and from the Project site) would constitute approximately 0.006 percent of the County's diesel consumption and approximately 0.0002 percent of the County's gasoline consumption. The Project would not result in any unusual characteristics that would result in excessive long-term operational fuel consumption. Fuel consumption associated with Project vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

#### Building Energy Consumption

Project operations would consume approximately 945,973 kWh of electricity per year and approximately 23,100 therms of natural gas per year.<sup>5</sup> The Project would be required to comply with Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy consumption. Furthermore, the electricity provider, SCE, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 50 percent of total procurement by 2030. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. The increase in reliance of such energy resources further ensures projects will not result in the waste of the finite energy resources.

As indicated in [Table 5](#), the Project's operational electrical energy consumption would constitute approximately 0.001 percent of the County's electricity consumption. As also indicated in [Table 5](#), the Project's operational natural gas energy consumption would constitute approximately 0.001 percent of the County's natural gas consumption. The Project would adhere to all federal, State, and local requirements for energy efficiency, including the Title 24 standards. As such, the Project would not result in the inefficient, wasteful, or unnecessary consumption of building electrical or natural gas energy.

#### Conclusion

As shown in [Table 5](#), the increase in electricity, natural gas, and automotive fuel consumption over existing conditions is minimal (less than one percent). For the reasons described above, the Project

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<sup>5</sup> The residential component of the Project would utilize electric appliances, stoves, and heating systems, and would not require natural gas. However, this analysis conservatively assumes on-site residences would require natural gas based on the default assumptions modeled in CalEEMod version 2020.4.0.

would not place a substantial demand on regional energy supply or require significant additional capacity, or significantly increase peak and base period electricity demand. Thus, the Project would not cause a wasteful, inefficient, and unnecessary consumption of energy during Project construction, operation, or preempt future energy development or future energy conservation.

**Threshold b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

California Code of Regulations Title 24 contains energy efficiency standards for residential and non-residential buildings based on a State mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the building envelope's energy impact such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs.

Title 24 Part 6 specifically establishes energy efficiency standards for residential and nonresidential buildings constructed in the State to reduce energy demand and consumption. The Project would comply with Title 24 Part 6 per State regulations. In accordance with Title 24 Part 6, the Project would have: (a) sensor-based lighting controls— for fixtures located near windows, the lighting would be adjusted by taking advantage of available natural light; and (b) efficient process equipment-improved technology offers significant savings through more efficient processing equipment.

Title 24 Part 11 contains voluntary and mandatory energy measures that apply to the Project under the California Green Building Standards Code. As discussed above, the Project would increase consumption of fuel, electricity, and natural gas energy resources. In accordance with Title 24 Part 11 mandatory compliance measures, the Project would require (a) 50% of its construction and demolition waste to be diverted from landfills; (b) mandatory inspections of energy systems to ensure optimal working efficiency; (c) low pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring and particle boards; and (d) a 20% reduction in indoor water use. Compliance with these mandatory measures would decrease fuel, electricity, and natural gas consumption.

The Project would not conflict with any of the federal, State, or local plans for renewable energy and energy efficiency. Because the Project would comply with Title 24 Parts 6 and 11, no conflict with existing energy standards and regulations would occur. Therefore, the Project's impacts concerning renewable energy or energy efficiency plans would be less than significant.

## 10.0 References

California Air Resources Board, EMFAC2021.

California Energy Commission, *2019 Building Energy Efficiency Standards*, [https://www.energy.ca.gov/title24/2019standards/documents/2018\\_Title\\_24\\_2019\\_Building\\_Standards\\_FAQ.pdf](https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf), accessed June 17, 2022.

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**Appendix A**

**Energy Data**

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**Construction Fuel Consumption**

On-Site Diesel <sup>1</sup>	MTCO <sub>2</sub> e	Gallons of Fuel <sup>4</sup>	Construction Year 2024 County Fuel	Percent
Demolition	0	0		
Site Preparation/Grading	492	48,502		
Building Construction	484	47,683		
Paving	20	1,952		
Architectural Coating	9	844		
Total	1,005	98,981	618,608,022	0.0160%

Off-Site Diesel <sup>1</sup>				
Demolition	0	0		
Site Preparation/Grading	70	6,868		
Building Construction	92	9,111		
Paving	0	0		
Architectural Coating	0	0		
Total	162	15,979	618,608,022	0.0026%

Off-Site Gasoline <sup>2</sup>				
Demolition	0	0		
Site Preparation/Grading	118	13,360		
Building Construction	170	19,274		
Paving	2	233		
Architectural Coating	5	596		
Total	295	33,462	3,733,376,187	0.0009%

Total Diesel Fuel		114,961	618,608,022	0.0186%
Total Gasoline Fuel		33,462	3,733,376,187	0.0009%
Total Construction Fuel	1,462	148,423		

Construction Phase <sup>3</sup>	Demolition			Site Preparation			Grading		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)
2023	0	0	0	73	11	3	113	0	6
2024	0	0	0	0	0	0	1	0	0
2025	0	0	0	0	0	0	306	59	109
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>73</b>	<b>11</b>	<b>3</b>	<b>420</b>	<b>59</b>	<b>114</b>

Construction Phase <sup>3</sup>	Building Construction			Paving			Architectural Coating		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)
2023	0	0	0	0	0	0	0	0	0
2024	306	59	109	20	0	2	0	0	0
2025	178	34	61	0	0	0	9	0	5
<b>Total</b>	<b>484</b>	<b>92</b>	<b>170</b>	<b>20</b>	<b>0</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>5</b>

**Notes:**

<sup>1</sup> Fuel used for off-road, hauling, and vendor trips assumed to be diesel.

<sup>2</sup> Fuel used for worker trips assumed to be gasoline.

<sup>3</sup> MTCO<sub>2</sub>e rates from CalEEMod (3.0 Construction Details).

<sup>4</sup> For CO<sub>2</sub>e emissions, see Chapter 13 (page 94); Conversion Ratios: Climate Registry, General Reporting Protocol, 2016.

Climate Registry Conversion Ratios:

- Gasoline: 10.15 kg CO<sub>2</sub> per gallon / 1,000 kg per metric ton

**Construction Water Energy**

Daily Soil Disturbance <sup>1</sup>	4	acres	
Days of Soil Disturbance <sup>2</sup>	130	days	
Water Concentration <sup>3</sup>	3,020	gallons/acre	
Water Energy Intensity <sup>4</sup>	11,110	kWh/MG	
Total Construction Water	1.57	million gallons	
Construction Water Energy	17,447	kWh	6.94E-07
	0.0174	GWh	

**Notes:**

<sup>1</sup> Total daily acres disturbed from offroad equipment per CalEEMod (3.0 Construction Detail) and maximum SCAQMD LST values for soil-disturbing equipment.

<sup>2</sup> Number of days of construction (site prep and grading phases) with soil-disturbing equipment per CalEEMod (3.0 Construction Detail).

<sup>3</sup> Water application rate per Air and Waste Management Association's Air Pollution Engineering Manual.

<sup>4</sup> Water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343.

Operational Fuel - ABCSPA

Vehicle Type	Annual VMT <sup>2</sup>	MPG <sup>3</sup>	Annual Fuel (Gallons)	Fuel Type	Los Angeles Gallons <sup>4</sup>	Los Angeles Percent	
Passenger Cars	4,936,184	21.6	228,527	Gas	3,733,376,187	0.0061%	0.0002%
Light/Medium Trucks	13,140	17.2	764	Diesel	618,608,022	0.0001%	
Heavy Trucks/Other	2,296	6.1	376	Diesel	618,608,022	0.0001%	
Total Trucks	283,861		1,140				
Total			229,667		4,351,984,209		

Total VMT

5220045

Fleet Mix -

Land Use	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Fast Food Restaurant w/o Drive Thru													
Strip Mall	0.540171	0.064547	0.189075	0.025155	0.126673	0.023412	0.006384	0.010926	0.000929	0.000597	0.000706	0.003335	0.008089
Apartments Low Rise	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking	0	0	0	0	0	0	0	0	0	0	0	0	0
Enclosed Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0.064547</b>	<b>0.189075</b>	<b>0.025155</b>	<b>0.126673</b>	<b>0.023412</b>	<b>0.006384</b>	<b>0.010926</b>	<b>0.000929</b>	<b>0.000597</b>	<b>0.000706</b>	<b>0.003335</b>	<b>0.008089</b>	

Notes:

<sup>1</sup> Percent of vehicle trip distribution based on fleet mix from CalEEMod (4.4 Fleet Mix).

<sup>2</sup> Total annual operational VMT based on mitigated annual VMT from CalEEMod (4.2 Trip Summary Information).

<sup>3</sup> Average fuel economy derived from Department of Transportation.

<sup>4</sup> Total annual county fuel per EMFAC 2017 model of projected operational fuel usage.

## Operational Water Energy

Mitigated Indoor	7.3	million gallons
Indoor Energy Intensity Factor <sup>1</sup>	13,021	kWh/MG
Mitigated Outdoor	4	million gallons
Outdoor Energy Intensity Factor <sup>2</sup>	11,110	kWh/MG
Operational Water Energy	137,834	kWh

Land Use <sup>3</sup>	Unmitigated (MG)		Mitigated (MG)	
	Indoor	Outdoor	Indoor	Outdoor
Fast Food Restaurant w/o Drive Thru	1	0	1	0
Strip Mall	0	0	0	0
Apartments Low Rise	5	3	5	3
Parking	0	0	0	0
Enclosed Parking Structure	0	0	0	0
General Office Building	0	0	0	0
<b>Total Operational Water</b>	<b>7</b>	<b>4</b>	<b>7</b>	<b>4</b>

### Notes:

<sup>1</sup> Indoor water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343. Factor includes supply, treatment, distribution, and wastewater.

<sup>2</sup> Outdoor water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343. Factor includes supply, treatment, and distribution.

<sup>3</sup> Operational water use values per CalEEMod (7.2 Water by Land Use).

## Electricity/Natural Gas Energy

	Mitigated Project	Los Angeles County	Percentage	
	Annual Energy	Annual Energy <sup>3</sup>	Increase	
Electricity (kWh/yr)	945,973	65,649,878,013	0.0014%	0.945973
Natural Gas (kBTU/yr)	2,309,997	293,668,709,800	0.0008%	
Natural Gas (therms/yr)	23,100	2,936,687,098	0.0008%	0.02309997

Total				
Land Use	Electricity <sup>1</sup> (kWh/yr)		Natural Gas <sup>2</sup> (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Apartments Low Rise	323,034	323,034	1,269,750	1,269,750
Parking structure	336,000	336,000	0	0
Fast food w/o Drive thru	190,961	190,961	1,015,060	1,015,060
General Office Building	30,538	30,538	25,187	25,187
Parking lot	7,840	7,840	0	0
Strip mall	57,600	57,600	7,183	7,183
<b>Total Energy</b>	<b>945,973</b>	<b>945,973</b>	<b>2,309,997</b>	<b>2,309,997</b>

### Notes:

<sup>1</sup> Electricity use per CalEEMod (5.3 Energy by Land Use).

<sup>2</sup> Natural Gas use per CalEEMod (5.2 Natural Gas by Land Use).

<sup>3</sup> County total energy values from California Energy Commission energy reports available through [ecdms.energy.ca.gov](http://ecdms.energy.ca.gov).

## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****ABCSPA****Los Angeles-South Coast County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.44	1000sqft	0.06	2,443.00	0
Enclosed Parking Structure	160.00	Space	1.44	64,000.00	0
Parking Lot	56.00	Space	0.50	22,400.00	0
Fast Food Restaurant w/o Drive Thru	4.41	1000sqft	0.10	4,407.00	0
Apartments Low Rise	80.00	Dwelling Unit	5.00	80,000.00	229
Strip Mall	4.41	1000sqft	0.10	4,407.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	9			<b>Operational Year</b>	2025
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	390.98	<b>CH4 Intensity (lb/MW hr)</b>	0.033	<b>N2O Intensity (lb/MW hr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - Enclosed Parking Structure is for the 160 spaces in the apartment garages, and the parking lot is for the 56 open guest and commercial use spaces. The reduction of lot acreage for Residential to accommodate for multi-story buildings

Construction Phase - Based on client given construction schedule

Trips and VMT - Based on closest disposal site at California Waste Services. 621 W 152nd street

Grading - Based on site preparation at start and hardscape removal

Vehicle Trips - Daily trips based on Trip Generation values from Kimley-Horn traffic group. Low rise:  $(539 - 12)/(80) = 6.59$  Fast food:  $(1985 - 62 - 140)/(4.407) = 404.580$



## ABCSPA - Los Angeles-South Coast County, Annual

### EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves - Based on rule that no woodstoves are allowed in new developments

Construction Off-road Equipment Mitigation - Tier 4 Final Construction Mitigation based on HRA results

Area Mitigation - No single family homes, so no Hearths

[illegible]

## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	230.00	415.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	20.00	67.00
tblGrading	AcresOfGrading	87.00	20.00
tblGrading	AcresOfGrading	64.50	15.00
tblGrading	MaterialExported	0.00	2,442.60
tblLandUse	LandUseSquareFeet	2,440.00	2,443.00
tblLandUse	LandUseSquareFeet	4,410.00	4,407.00
tblLandUse	LandUseSquareFeet	4,410.00	4,407.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00
tblVehicleTrips	ST_TR	8.14	6.59
tblVehicleTrips	ST_TR	696.00	404.58
tblVehicleTrips	ST_TR	2.21	14.39
tblVehicleTrips	ST_TR	42.04	54.45
tblVehicleTrips	SU_TR	6.28	6.59
tblVehicleTrips	SU_TR	500.00	404.58
tblVehicleTrips	SU_TR	0.70	14.39
tblVehicleTrips	SU_TR	20.43	54.45
tblVehicleTrips	WD_TR	7.32	6.59
tblVehicleTrips	WD_TR	346.23	404.58
tblVehicleTrips	WD_TR	9.74	14.39

ABCSPA - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	WD_TR	44.32	54.45
tblWoodstoves	NumberCatalytic	4.00	0.00
tblWoodstoves	NumberNoncatalytic	4.00	0.00

2.0 Emissions Summary

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## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1343	1.3823	1.0659	2.2600e-003	0.6793	0.0607	0.7400	0.3614	0.0559	0.4173	0.0000	200.0388	200.0388	0.0601	1.3600e-003	201.9458
2024	0.2470	2.0305	2.7329	5.5800e-003	0.1770	0.0870	0.2640	0.0467	0.0817	0.1284	0.0000	493.7370	493.7370	0.0832	0.0112	499.1529
2025	0.4495	1.0856	1.5596	3.2400e-003	0.1016	0.0430	0.1445	0.0273	0.0405	0.0678	0.0000	286.4771	286.4771	0.0449	6.4600e-003	289.5239
<b>Maximum</b>	<b>0.4495</b>	<b>2.0305</b>	<b>2.7329</b>	<b>5.5800e-003</b>	<b>0.6793</b>	<b>0.0870</b>	<b>0.7400</b>	<b>0.3614</b>	<b>0.0817</b>	<b>0.4173</b>	<b>0.0000</b>	<b>493.7370</b>	<b>493.7370</b>	<b>0.0832</b>	<b>0.0112</b>	<b>499.1529</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0292	0.1303	1.2515	2.2600e-003	0.2731	3.5900e-003	0.2767	0.1431	3.5800e-003	0.1467	0.0000	200.0385	200.0385	0.0601	1.3600e-003	201.9456
2024	0.0886	0.4665	2.9196	5.5800e-003	0.1687	7.1900e-003	0.1759	0.0450	7.1000e-003	0.0521	0.0000	493.7366	493.7366	0.0832	0.0112	499.1525
2025	0.3652	0.2686	1.6656	3.2400e-003	0.1016	4.1300e-003	0.1057	0.0273	4.0700e-003	0.0313	0.0000	286.4769	286.4769	0.0449	6.4600e-003	289.5236
<b>Maximum</b>	<b>0.3652</b>	<b>0.4665</b>	<b>2.9196</b>	<b>5.5800e-003</b>	<b>0.2731</b>	<b>7.1900e-003</b>	<b>0.2767</b>	<b>0.1431</b>	<b>7.1000e-003</b>	<b>0.1467</b>	<b>0.0000</b>	<b>493.7366</b>	<b>493.7366</b>	<b>0.0832</b>	<b>0.0112</b>	<b>499.1525</b>

## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	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	41.87	80.76	-8.92	0.00	43.28	92.18	51.39	50.53	91.72	62.49	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2023	11-30-2023	1.3177	0.1387
2	12-1-2023	2-29-2024	0.6845	0.1265
3	3-1-2024	5-31-2024	0.5396	0.1337
4	6-1-2024	8-31-2024	0.5386	0.1327
5	9-1-2024	11-30-2024	0.5346	0.1332
6	12-1-2024	2-28-2025	0.5060	0.1316
7	3-1-2025	5-31-2025	0.6222	0.2389
8	6-1-2025	8-31-2025	0.5772	0.3019
		Highest	1.3177	0.3019

## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.6269	0.0263	1.0906	5.4000e-004		0.0410	0.0410		0.0410	0.0410	3.1437	17.6826	20.8263	1.6200e-003	5.8000e-004	21.0386
Energy	0.0125	0.1099	0.0680	6.8000e-004		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	291.3697	291.3697	0.0165	3.9800e-003	292.9697
Mobile	1.0534	1.0551	9.5663	0.0195	2.1052	0.0147	2.1198	0.5617	0.0136	0.5753	0.0000	1,803.0468	1,803.0468	0.1393	0.0856	1,832.0243
Waste						0.0000	0.0000		0.0000	0.0000	19.1827	0.0000	19.1827	1.1337	0.0000	47.5242
Water						0.0000	0.0000		0.0000	0.0000	2.3195	24.4443	26.7638	0.2403	5.8800e-003	34.5221
<b>Total</b>	<b>1.6928</b>	<b>1.1912</b>	<b>10.7249</b>	<b>0.0207</b>	<b>2.1052</b>	<b>0.0643</b>	<b>2.1694</b>	<b>0.5617</b>	<b>0.0633</b>	<b>0.6249</b>	<b>24.6458</b>	<b>2,136.5433</b>	<b>2,161.1891</b>	<b>1.5314</b>	<b>0.0960</b>	<b>2,228.0789</b>

## ABCSPA - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 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	0.3918	9.5200e-003	0.8271	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3533	1.3533	1.3100e-003	0.0000	1.3859
Energy	0.0125	0.1099	0.0680	6.8000e-004		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	291.3697	291.3697	0.0165	3.9800e-003	292.9697
Mobile	1.0534	1.0551	9.5663	0.0195	2.1052	0.0147	2.1198	0.5617	0.0136	0.5753	0.0000	1,803.0468	1,803.0468	0.1393	0.0856	1,832.0243
Waste						0.0000	0.0000		0.0000	0.0000	19.1827	0.0000	19.1827	1.1337	0.0000	47.5242
Water						0.0000	0.0000		0.0000	0.0000	2.3195	24.4443	26.7638	0.2403	5.8800e-003	34.5221
<b>Total</b>	<b>1.4577</b>	<b>1.1744</b>	<b>10.4614</b>	<b>0.0202</b>	<b>2.1052</b>	<b>0.0279</b>	<b>2.1330</b>	<b>0.5617</b>	<b>0.0268</b>	<b>0.5885</b>	<b>21.5022</b>	<b>2,120.2140</b>	<b>2,141.7162</b>	<b>1.5311</b>	<b>0.0954</b>	<b>2,208.4262</b>

	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
<b>Percent Reduction</b>	<b>13.89</b>	<b>1.41</b>	<b>2.46</b>	<b>2.42</b>	<b>0.00</b>	<b>56.63</b>	<b>1.68</b>	<b>0.00</b>	<b>57.57</b>	<b>5.83</b>	<b>12.76</b>	<b>0.76</b>	<b>0.90</b>	<b>0.02</b>	<b>0.60</b>	<b>0.88</b>

## 3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2023	10/31/2023	5	43	
2	Grading	Grading	9/1/2023	1/1/2024	5	87	
3	Building Construction	Building Construction	1/1/2024	8/1/2025	5	415	



## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

4	Paving	Paving	1/1/2024	2/1/2024	5	24
5	Architectural Coating	Architectural Coating	5/1/2025	8/1/2025	5	67

**Acres of Grading (Site Preparation Phase): 15****Acres of Grading (Grading Phase): 20****Acres of Paving: 1.94**

**Residential Indoor: 162,000; Residential Outdoor: 54,000; Non-Residential Indoor: 16,886; Non-Residential Outdoor: 5,629; Striped Parking Area: 5,184 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	242.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	98.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	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

Reduce Vehicle Speed on Unpaved Roads

**3.2 Site Preparation - 2023****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					0.3964	0.0000	0.3964	0.2144	0.0000	0.2144	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0572	0.5918	0.3923	8.2000e-004		0.0272	0.0272		0.0250	0.0250	0.0000	71.9190	71.9190	0.0233	0.0000	72.5005
<b>Total</b>	<b>0.0572</b>	<b>0.5918</b>	<b>0.3923</b>	<b>8.2000e-004</b>	<b>0.3964</b>	<b>0.0272</b>	<b>0.4236</b>	<b>0.2144</b>	<b>0.0250</b>	<b>0.2394</b>	<b>0.0000</b>	<b>71.9190</b>	<b>71.9190</b>	<b>0.0233</b>	<b>0.0000</b>	<b>72.5005</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 3.2 Site Preparation - 2023

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	2.6000e-004	0.0166	4.2400e-003	7.0000e-005	2.0800e-003	1.0000e-004	2.1800e-003	5.7000e-004	1.0000e-004	6.7000e-004	0.0000	7.0576	7.0576	3.9000e-004	1.1200e-003	7.4013
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	1.2300e-003	9.7000e-004	0.0132	4.0000e-005	4.2400e-003	3.0000e-005	4.2700e-003	1.1300e-003	2.0000e-005	1.1500e-003	0.0000	3.3756	3.3756	9.0000e-005	9.0000e-005	3.4040
<b>Total</b>	<b>1.4900e-003</b>	<b>0.0176</b>	<b>0.0174</b>	<b>1.1000e-004</b>	<b>6.3200e-003</b>	<b>1.3000e-004</b>	<b>6.4500e-003</b>	<b>1.7000e-003</b>	<b>1.2000e-004</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>10.4331</b>	<b>10.4331</b>	<b>4.8000e-004</b>	<b>1.2100e-003</b>	<b>10.8053</b>

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					0.1546	0.0000	0.1546	0.0836	0.0000	0.0836	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.0434	0.4487	8.2000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	71.9189	71.9189	0.0233	0.0000	72.5004
<b>Total</b>	<b>0.0100</b>	<b>0.0434</b>	<b>0.4487</b>	<b>8.2000e-004</b>	<b>0.1546</b>	<b>1.3300e-003</b>	<b>0.1559</b>	<b>0.0836</b>	<b>1.3300e-003</b>	<b>0.0849</b>	<b>0.0000</b>	<b>71.9189</b>	<b>71.9189</b>	<b>0.0233</b>	<b>0.0000</b>	<b>72.5004</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.2 Site Preparation - 2023****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	2.6000e-004	0.0166	4.2400e-003	7.0000e-005	2.0800e-003	1.0000e-004	2.1800e-003	5.7000e-004	1.0000e-004	6.7000e-004	0.0000	7.0576	7.0576	3.9000e-004	1.1200e-003	7.4013
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	1.2300e-003	9.7000e-004	0.0132	4.0000e-005	4.2400e-003	3.0000e-005	4.2700e-003	1.1300e-003	2.0000e-005	1.1500e-003	0.0000	3.3756	3.3756	9.0000e-005	9.0000e-005	3.4040
<b>Total</b>	<b>1.4900e-003</b>	<b>0.0176</b>	<b>0.0174</b>	<b>1.1000e-004</b>	<b>6.3200e-003</b>	<b>1.3000e-004</b>	<b>6.4500e-003</b>	<b>1.7000e-003</b>	<b>1.2000e-004</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>10.4331</b>	<b>10.4331</b>	<b>4.8000e-004</b>	<b>1.2100e-003</b>	<b>10.8053</b>

**3.3 Grading - 2023****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					0.2696	0.0000	0.2696	0.1435	0.0000	0.1435	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0736	0.7712	0.6343	1.2800e-003		0.0333	0.0333		0.0307	0.0307	0.0000	112.0606	112.0606	0.0362	0.0000	112.9667
<b>Total</b>	<b>0.0736</b>	<b>0.7712</b>	<b>0.6343</b>	<b>1.2800e-003</b>	<b>0.2696</b>	<b>0.0333</b>	<b>0.3029</b>	<b>0.1435</b>	<b>0.0307</b>	<b>0.1741</b>	<b>0.0000</b>	<b>112.0606</b>	<b>112.0606</b>	<b>0.0362</b>	<b>0.0000</b>	<b>112.9667</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 3.3 Grading - 2023

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	2.0500e-003	1.6200e-003	0.0220	6.0000e-005	7.0700e-003	4.0000e-005	7.1100e-003	1.8800e-003	4.0000e-005	1.9200e-003	0.0000	5.6260	5.6260	1.5000e-004	1.5000e-004	5.6734
<b>Total</b>	<b>2.0500e-003</b>	<b>1.6200e-003</b>	<b>0.0220</b>	<b>6.0000e-005</b>	<b>7.0700e-003</b>	<b>4.0000e-005</b>	<b>7.1100e-003</b>	<b>1.8800e-003</b>	<b>4.0000e-005</b>	<b>1.9200e-003</b>	<b>0.0000</b>	<b>5.6260</b>	<b>5.6260</b>	<b>1.5000e-004</b>	<b>1.5000e-004</b>	<b>5.6734</b>

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					0.1051	0.0000	0.1051	0.0560	0.0000	0.0560	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0156	0.0677	0.7634	1.2800e-003		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	112.0605	112.0605	0.0362	0.0000	112.9666
<b>Total</b>	<b>0.0156</b>	<b>0.0677</b>	<b>0.7634</b>	<b>1.2800e-003</b>	<b>0.1051</b>	<b>2.0800e-003</b>	<b>0.1072</b>	<b>0.0560</b>	<b>2.0800e-003</b>	<b>0.0580</b>	<b>0.0000</b>	<b>112.0605</b>	<b>112.0605</b>	<b>0.0362</b>	<b>0.0000</b>	<b>112.9666</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 3.3 Grading - 2023

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	2.0500e-003	1.6200e-003	0.0220	6.0000e-005	7.0700e-003	4.0000e-005	7.1100e-003	1.8800e-003	4.0000e-005	1.9200e-003	0.0000	5.6260	5.6260	1.5000e-004	1.5000e-004	5.6734
<b>Total</b>	<b>2.0500e-003</b>	<b>1.6200e-003</b>	<b>0.0220</b>	<b>6.0000e-005</b>	<b>7.0700e-003</b>	<b>4.0000e-005</b>	<b>7.1100e-003</b>	<b>1.8800e-003</b>	<b>4.0000e-005</b>	<b>1.9200e-003</b>	<b>0.0000</b>	<b>5.6260</b>	<b>5.6260</b>	<b>1.5000e-004</b>	<b>1.5000e-004</b>	<b>5.6734</b>

## 3.3 Grading - 2024

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					0.0136	0.0000	0.0136	2.8000e-003	0.0000	2.8000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	8.5200e-003	7.3800e-003	1.0000e-005		3.6000e-004	3.6000e-004		3.3000e-004	3.3000e-004	0.0000	1.3032	1.3032	4.2000e-004	0.0000	1.3137
<b>Total</b>	<b>8.3000e-004</b>	<b>8.5200e-003</b>	<b>7.3800e-003</b>	<b>1.0000e-005</b>	<b>0.0136</b>	<b>3.6000e-004</b>	<b>0.0140</b>	<b>2.8000e-003</b>	<b>3.3000e-004</b>	<b>3.1300e-003</b>	<b>0.0000</b>	<b>1.3032</b>	<b>1.3032</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>1.3137</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.3 Grading - 2024****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	2.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0636	0.0636	0.0000	0.0000	0.0641
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0636</b>	<b>0.0636</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0641</b>

**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					5.3100e-003	0.0000	5.3100e-003	1.0900e-003	0.0000	1.0900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8000e-004	7.9000e-004	8.8800e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.3032	1.3032	4.2000e-004	0.0000	1.3137
<b>Total</b>	<b>1.8000e-004</b>	<b>7.9000e-004</b>	<b>8.8800e-003</b>	<b>1.0000e-005</b>	<b>5.3100e-003</b>	<b>2.0000e-005</b>	<b>5.3300e-003</b>	<b>1.0900e-003</b>	<b>2.0000e-005</b>	<b>1.1100e-003</b>	<b>0.0000</b>	<b>1.3032</b>	<b>1.3032</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>1.3137</b>



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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	2.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0636	0.0636	0.0000	0.0000	0.0641
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0636</b>	<b>0.0636</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0641</b>

**3.4 Building Construction - 2024****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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
<b>Total</b>	<b>0.1928</b>	<b>1.7611</b>	<b>2.1179</b>	<b>3.5300e-003</b>		<b>0.0803</b>	<b>0.0803</b>		<b>0.0756</b>	<b>0.0756</b>	<b>0.0000</b>	<b>303.7223</b>	<b>303.7223</b>	<b>0.0718</b>	<b>0.0000</b>	<b>305.5179</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.4 Building Construction - 2024****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	3.5800e-003	0.1323	0.0484	6.0000e-004	0.0206	6.4000e-004	0.0213	5.9600e-003	6.1000e-004	6.5700e-003	0.0000	58.6534	58.6534	2.0000e-003	8.4500e-003	61.2212
Worker	0.0380	0.0289	0.4067	1.1900e-003	0.1407	8.3000e-004	0.1415	0.0374	7.6000e-004	0.0381	0.0000	108.8125	108.8125	2.7000e-003	2.7100e-003	109.6873
<b>Total</b>	<b>0.0416</b>	<b>0.1611</b>	<b>0.4551</b>	<b>1.7900e-003</b>	<b>0.1613</b>	<b>1.4700e-003</b>	<b>0.1628</b>	<b>0.0433</b>	<b>1.3700e-003</b>	<b>0.0447</b>	<b>0.0000</b>	<b>167.4659</b>	<b>167.4659</b>	<b>4.7000e-003</b>	<b>0.0112</b>	<b>170.9085</b>

**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	0.0429	0.2928	2.2873	3.5300e-003		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
<b>Total</b>	<b>0.0429</b>	<b>0.2928</b>	<b>2.2873</b>	<b>3.5300e-003</b>		<b>5.3400e-003</b>	<b>5.3400e-003</b>		<b>5.3400e-003</b>	<b>5.3400e-003</b>	<b>0.0000</b>	<b>303.7220</b>	<b>303.7220</b>	<b>0.0718</b>	<b>0.0000</b>	<b>305.5175</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.4 Building Construction - 2024****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	3.5800e-003	0.1323	0.0484	6.0000e-004	0.0206	6.4000e-004	0.0213	5.9600e-003	6.1000e-004	6.5700e-003	0.0000	58.6534	58.6534	2.0000e-003	8.4500e-003	61.2212
Worker	0.0380	0.0289	0.4067	1.1900e-003	0.1407	8.3000e-004	0.1415	0.0374	7.6000e-004	0.0381	0.0000	108.8125	108.8125	2.7000e-003	2.7100e-003	109.6873
<b>Total</b>	<b>0.0416</b>	<b>0.1611</b>	<b>0.4551</b>	<b>1.7900e-003</b>	<b>0.1613</b>	<b>1.4700e-003</b>	<b>0.1628</b>	<b>0.0433</b>	<b>1.3700e-003</b>	<b>0.0447</b>	<b>0.0000</b>	<b>167.4659</b>	<b>167.4659</b>	<b>4.7000e-003</b>	<b>0.0112</b>	<b>170.9085</b>

**3.4 Building Construction - 2025****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	0.1046	0.9539	1.2305	2.0600e-003		0.0404	0.0404		0.0380	0.0380	0.0000	177.4184	177.4184	0.0417	0.0000	178.4610
<b>Total</b>	<b>0.1046</b>	<b>0.9539</b>	<b>1.2305</b>	<b>2.0600e-003</b>		<b>0.0404</b>	<b>0.0404</b>		<b>0.0380</b>	<b>0.0380</b>	<b>0.0000</b>	<b>177.4184</b>	<b>177.4184</b>	<b>0.0417</b>	<b>0.0000</b>	<b>178.4610</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.4 Building Construction - 2025****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	2.0300e-003	0.0769	0.0277	3.4000e-004	0.0121	3.7000e-004	0.0124	3.4800e-003	3.6000e-004	3.8400e-003	0.0000	33.6356	33.6356	1.1800e-003	4.8500e-003	35.1098
Worker	0.0208	0.0151	0.2210	6.7000e-004	0.0822	4.6000e-004	0.0826	0.0218	4.2000e-004	0.0222	0.0000	61.3839	61.3839	1.4200e-003	1.4800e-003	61.8597
<b>Total</b>	<b>0.0228</b>	<b>0.0920</b>	<b>0.2488</b>	<b>1.0100e-003</b>	<b>0.0942</b>	<b>8.3000e-004</b>	<b>0.0950</b>	<b>0.0253</b>	<b>7.8000e-004</b>	<b>0.0261</b>	<b>0.0000</b>	<b>95.0195</b>	<b>95.0195</b>	<b>2.6000e-003</b>	<b>6.3300e-003</b>	<b>96.9694</b>

**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	0.0251	0.1710	1.3357	2.0600e-003		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	177.4182	177.4182	0.0417	0.0000	178.4608
<b>Total</b>	<b>0.0251</b>	<b>0.1710</b>	<b>1.3357</b>	<b>2.0600e-003</b>		<b>3.1200e-003</b>	<b>3.1200e-003</b>		<b>3.1200e-003</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>177.4182</b>	<b>177.4182</b>	<b>0.0417</b>	<b>0.0000</b>	<b>178.4608</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.4 Building Construction - 2025****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	2.0300e-003	0.0769	0.0277	3.4000e-004	0.0121	3.7000e-004	0.0124	3.4800e-003	3.6000e-004	3.8400e-003	0.0000	33.6356	33.6356	1.1800e-003	4.8500e-003	35.1098
Worker	0.0208	0.0151	0.2210	6.7000e-004	0.0822	4.6000e-004	0.0826	0.0218	4.2000e-004	0.0222	0.0000	61.3839	61.3839	1.4200e-003	1.4800e-003	61.8597
<b>Total</b>	<b>0.0228</b>	<b>0.0920</b>	<b>0.2488</b>	<b>1.0100e-003</b>	<b>0.0942</b>	<b>8.3000e-004</b>	<b>0.0950</b>	<b>0.0253</b>	<b>7.8000e-004</b>	<b>0.0261</b>	<b>0.0000</b>	<b>95.0195</b>	<b>95.0195</b>	<b>2.6000e-003</b>	<b>6.3300e-003</b>	<b>96.9694</b>

**3.5 Paving - 2024****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	0.0106	0.0993	0.1467	2.3000e-004		4.7800e-003	4.7800e-003		4.4200e-003	4.4200e-003	0.0000	19.6564	19.6564	6.1800e-003	0.0000	19.8108
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0112</b>	<b>0.0993</b>	<b>0.1467</b>	<b>2.3000e-004</b>		<b>4.7800e-003</b>	<b>4.7800e-003</b>		<b>4.4200e-003</b>	<b>4.4200e-003</b>	<b>0.0000</b>	<b>19.6564</b>	<b>19.6564</b>	<b>6.1800e-003</b>	<b>0.0000</b>	<b>19.8108</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.5 Paving - 2024****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	5.7000e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9800e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5257	1.5257	4.0000e-005	4.0000e-005	1.5379
<b>Total</b>	<b>5.3000e-004</b>	<b>4.0000e-004</b>	<b>5.7000e-003</b>	<b>2.0000e-005</b>	<b>1.9700e-003</b>	<b>1.0000e-005</b>	<b>1.9800e-003</b>	<b>5.2000e-004</b>	<b>1.0000e-005</b>	<b>5.3000e-004</b>	<b>0.0000</b>	<b>1.5257</b>	<b>1.5257</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>1.5379</b>

**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	2.6300e-003	0.0114	0.1624	2.3000e-004		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	19.6564	19.6564	6.1800e-003	0.0000	19.8108
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.2900e-003</b>	<b>0.0114</b>	<b>0.1624</b>	<b>2.3000e-004</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>19.6564</b>	<b>19.6564</b>	<b>6.1800e-003</b>	<b>0.0000</b>	<b>19.8108</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.5 Paving - 2024****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.0000e-004	5.7000e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9800e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.5257	1.5257	4.0000e-005	4.0000e-005	1.5379
<b>Total</b>	<b>5.3000e-004</b>	<b>4.0000e-004</b>	<b>5.7000e-003</b>	<b>2.0000e-005</b>	<b>1.9700e-003</b>	<b>1.0000e-005</b>	<b>1.9800e-003</b>	<b>5.2000e-004</b>	<b>1.0000e-005</b>	<b>5.3000e-004</b>	<b>0.0000</b>	<b>1.5257</b>	<b>1.5257</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>1.5379</b>

**3.6 Architectural Coating - 2025****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	0.3145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7200e-003	0.0384	0.0606	1.0000e-004		1.7300e-003	1.7300e-003		1.7300e-003	1.7300e-003	0.0000	8.5534	8.5534	4.7000e-004	0.0000	8.5651
<b>Total</b>	<b>0.3202</b>	<b>0.0384</b>	<b>0.0606</b>	<b>1.0000e-004</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>		<b>1.7300e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>	<b>8.5534</b>	<b>8.5534</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>8.5651</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.6 Architectural Coating - 2025****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	1.8600e-003	1.3500e-003	0.0198	6.0000e-005	7.3400e-003	4.0000e-005	7.3800e-003	1.9500e-003	4.0000e-005	1.9900e-003	0.0000	5.4858	5.4858	1.3000e-004	1.3000e-004	5.5283
<b>Total</b>	<b>1.8600e-003</b>	<b>1.3500e-003</b>	<b>0.0198</b>	<b>6.0000e-005</b>	<b>7.3400e-003</b>	<b>4.0000e-005</b>	<b>7.3800e-003</b>	<b>1.9500e-003</b>	<b>4.0000e-005</b>	<b>1.9900e-003</b>	<b>0.0000</b>	<b>5.4858</b>	<b>5.4858</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>5.5283</b>

**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	0.3145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-003	4.3100e-003	0.0614	1.0000e-004		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	8.5534	8.5534	4.7000e-004	0.0000	8.5651
<b>Total</b>	<b>0.3155</b>	<b>4.3100e-003</b>	<b>0.0614</b>	<b>1.0000e-004</b>		<b>1.3000e-004</b>	<b>1.3000e-004</b>		<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>8.5534</b>	<b>8.5534</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>8.5651</b>



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.6 Architectural Coating - 2025****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	1.8600e-003	1.3500e-003	0.0198	6.0000e-005	7.3400e-003	4.0000e-005	7.3800e-003	1.9500e-003	4.0000e-005	1.9900e-003	0.0000	5.4858	5.4858	1.3000e-004	1.3000e-004	5.5283
<b>Total</b>	<b>1.8600e-003</b>	<b>1.3500e-003</b>	<b>0.0198</b>	<b>6.0000e-005</b>	<b>7.3400e-003</b>	<b>4.0000e-005</b>	<b>7.3800e-003</b>	<b>1.9500e-003</b>	<b>4.0000e-005</b>	<b>1.9900e-003</b>	<b>0.0000</b>	<b>5.4858</b>	<b>5.4858</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>5.5283</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0534	1.0551	9.5663	0.0195	2.1052	0.0147	2.1198	0.5617	0.0136	0.5753	0.0000	1,803.0468	1,803.0468	0.1393	0.0856	1,832.0243
Unmitigated	1.0534	1.0551	9.5663	0.0195	2.1052	0.0147	2.1198	0.5617	0.0136	0.5753	0.0000	1,803.0468	1,803.0468	0.1393	0.0856	1,832.0243

## 4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	527.20	527.20	527.20	1,801,522	1,801,522
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,784.20	1,784.20	1,784.20	3,231,260	3,231,260
General Office Building	35.11	35.11	35.11	113,111	113,111
Parking Lot	0.00	0.00	0.00		
Strip Mall	240.12	240.12	240.12	456,860	456,860
Total	2,586.63	2,586.63	2,586.63	5,602,753	5,602,753

## 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	51	37	12
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335
Enclosed Parking Structure	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335
Fast Food Restaurant w/o Drive Thru	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335
General Office Building	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335
Parking Lot	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335
Strip Mall	0.540171	0.064547	0.189075	0.126673	0.023412	0.006384	0.010926	0.008089	0.000929	0.000597	0.025155	0.000706	0.003335

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.7159	167.7159	0.0142	1.7200e-003	168.5812
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.7159	167.7159	0.0142	1.7200e-003	168.5812
NaturalGas Mitigated	0.0125	0.1099	0.0680	6.8000e-004		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	123.6537	123.6537	2.3700e-003	2.2700e-003	124.3885
NaturalGas Unmitigated	0.0125	0.1099	0.0680	6.8000e-004		8.6300e-003	8.6300e-003		8.6300e-003	8.6300e-003	0.0000	123.6537	123.6537	2.3700e-003	2.2700e-003	124.3885

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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					
Apartments Low Rise	1.26975e+006	6.8500e-003	0.0585	0.0249	3.7000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	67.7586	67.7586	1.3000e-003	1.2400e-003	68.1612
Enclosed Parking Structure	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
Fast Food Restaurant w/o Drive Thru	1.01506e+006	5.4700e-003	0.0498	0.0418	3.0000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	54.1677	54.1677	1.0400e-003	9.9000e-004	54.4896
General Office Building	25187.3	1.4000e-004	1.2300e-003	1.0400e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3441	1.3441	3.0000e-005	2.0000e-005	1.3521
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
Strip Mall	7183.41	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3833	0.3833	1.0000e-005	1.0000e-005	0.3856
<b>Total</b>		<b>0.0125</b>	<b>0.1099</b>	<b>0.0680</b>	<b>6.8000e-004</b>		<b>8.6300e-003</b>	<b>8.6300e-003</b>		<b>8.6300e-003</b>	<b>8.6300e-003</b>	<b>0.0000</b>	<b>123.6537</b>	<b>123.6537</b>	<b>2.3800e-003</b>	<b>2.2600e-003</b>	<b>124.3885</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****5.2 Energy by Land Use - NaturalGas****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					
Apartments Low Rise	1.26975e+006	6.8500e-003	0.0585	0.0249	3.7000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	67.7586	67.7586	1.3000e-003	1.2400e-003	68.1612
Enclosed Parking Structure	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
Fast Food Restaurant w/o Drive Thru	1.01506e+006	5.4700e-003	0.0498	0.0418	3.0000e-004		3.7800e-003	3.7800e-003		3.7800e-003	3.7800e-003	0.0000	54.1677	54.1677	1.0400e-003	9.9000e-004	54.4896
General Office Building	25187.3	1.4000e-004	1.2300e-003	1.0400e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3441	1.3441	3.0000e-005	2.0000e-005	1.3521
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
Strip Mall	7183.41	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3833	0.3833	1.0000e-005	1.0000e-005	0.3856
<b>Total</b>		<b>0.0125</b>	<b>0.1099</b>	<b>0.0680</b>	<b>6.8000e-004</b>		<b>8.6300e-003</b>	<b>8.6300e-003</b>		<b>8.6300e-003</b>	<b>8.6300e-003</b>	<b>0.0000</b>	<b>123.6537</b>	<b>123.6537</b>	<b>2.3800e-003</b>	<b>2.2600e-003</b>	<b>124.3885</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	323034	57.2886	4.8400e-003	5.9000e-004	57.5841
Enclosed Parking Structure	336000	59.5881	5.0300e-003	6.1000e-004	59.8955
Fast Food Restaurant w/o Drive Thru	190691	33.8182	2.8500e-003	3.5000e-004	33.9926
General Office Building	30537.5	5.4157	4.6000e-004	6.0000e-005	5.4436
Parking Lot	7840	1.3904	1.2000e-004	1.0000e-005	1.3976
Strip Mall	57599.5	10.2150	8.6000e-004	1.0000e-004	10.2677
<b>Total</b>		<b>167.7159</b>	<b>0.0142</b>	<b>1.7200e-003</b>	<b>168.5812</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	323034	57.2886	4.8400e-003	5.9000e-004	57.5841
Enclosed Parking Structure	336000	59.5881	5.0300e-003	6.1000e-004	59.8955
Fast Food Restaurant w/o Drive Thru	190691	33.8182	2.8500e-003	3.5000e-004	33.9926
General Office Building	30537.5	5.4157	4.6000e-004	6.0000e-005	5.4436
Parking Lot	7840	1.3904	1.2000e-004	1.0000e-005	1.3976
Strip Mall	57599.5	10.2150	8.6000e-004	1.0000e-004	10.2677
<b>Total</b>		<b>167.7159</b>	<b>0.0142</b>	<b>1.7200e-003</b>	<b>168.5812</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	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	0.3918	9.5200e-003	0.8271	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3533	1.3533	1.3100e-003	0.0000	1.3859
Unmitigated	0.6269	0.0263	1.0906	5.4000e-004		0.0410	0.0410		0.0410	0.0410	3.1437	17.6826	20.8263	1.6200e-003	5.8000e-004	21.0386

**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	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.2351	0.0168	0.2635	5.0000e-004		0.0364	0.0364		0.0364	0.0364	3.1437	16.3293	19.4730	3.1000e-004	5.8000e-004	19.6527
Landscaping	0.0250	9.5200e-003	0.8271	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3533	1.3533	1.3100e-003	0.0000	1.3859
<b>Total</b>	<b>0.6269</b>	<b>0.0263</b>	<b>1.0906</b>	<b>5.4000e-004</b>		<b>0.0410</b>	<b>0.0410</b>		<b>0.0410</b>	<b>0.0410</b>	<b>3.1437</b>	<b>17.6826</b>	<b>20.8263</b>	<b>1.6200e-003</b>	<b>5.8000e-004</b>	<b>21.0386</b>



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****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	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0250	9.5200e-003	0.8271	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3533	1.3533	1.3100e-003	0.0000	1.3859
<b>Total</b>	<b>0.3918</b>	<b>9.5200e-003</b>	<b>0.8271</b>	<b>4.0000e-005</b>		<b>4.5800e-003</b>	<b>4.5800e-003</b>		<b>4.5800e-003</b>	<b>4.5800e-003</b>	<b>0.0000</b>	<b>1.3533</b>	<b>1.3533</b>	<b>1.3100e-003</b>	<b>0.0000</b>	<b>1.3859</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.7638	0.2403	5.8800e-003	34.5221
Unmitigated	26.7638	0.2403	5.8800e-003	34.5221

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	5.21232 / 3.28603	20.1645	0.1714	4.2000e-003	25.7012
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	1.33858 / 0.0854415	3.6841	0.0439	1.0600e-003	5.0983
General Office Building	0.43367 / 0.265798	1.6627	0.0143	3.5000e-004	2.1233
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.32666 / 0.200211	1.2524	0.0107	2.6000e-004	1.5994
<b>Total</b>		<b>26.7638</b>	<b>0.2403</b>	<b>5.8700e-003</b>	<b>34.5221</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	5.21232 / 3.28603	20.1645	0.1714	4.2000e-003	25.7012
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	1.33858 / 0.0854415	3.6841	0.0439	1.0600e-003	5.0983
General Office Building	0.43367 / 0.265798	1.6627	0.0143	3.5000e-004	2.1233
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.32666 / 0.200211	1.2524	0.0107	2.6000e-004	1.5994
<b>Total</b>		<b>26.7638</b>	<b>0.2403</b>	<b>5.8700e-003</b>	<b>34.5221</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

## ABCSPA - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.1827	1.1337	0.0000	47.5242
Unmitigated	19.1827	1.1337	0.0000	47.5242

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	36.8	7.4701	0.4415	0.0000	18.5068
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	50.8	10.3119	0.6094	0.0000	25.5474
General Office Building	2.27	0.4608	0.0272	0.0000	1.1416
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	4.63	0.9399	0.0555	0.0000	2.3284
<b>Total</b>		<b>19.1827</b>	<b>1.1337</b>	<b>0.0000</b>	<b>47.5242</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	36.8	7.4701	0.4415	0.0000	18.5068
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	50.8	10.3119	0.6094	0.0000	25.5474
General Office Building	2.27	0.4608	0.0272	0.0000	1.1416
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	4.63	0.9399	0.0555	0.0000	2.3284
<b>Total</b>		<b>19.1827</b>	<b>1.1337</b>	<b>0.0000</b>	<b>47.5242</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Equipment Type	Number
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11.0 Vegetation

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