



APPENDIX E

ENERGY TECHNICAL MEMORANDUM

MEMORANDUM

To: City of Fontana
CC: CRP/WP Alta Fontana Venture, L.L.C.

From: Danielle Regimbal, Michael Baker International
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Date: April 21, 2022

Subject: Alta Fontana Mixed Use Project – Energy Analysis Technical Memorandum

PURPOSE

The purpose of this technical memorandum is to evaluate potential short-term construction and long-term operational energy consumption impacts that would result from implementation of the proposed Alta Fontana Mixed Use Project (project), located in the City of Fontana (City), California.

PROJECT LOCATION

The project site is located at 14817 Foothill Boulevard and is bound by Foothill Boulevard to the north, Live Oak Avenue to the east, single-family residences to the south, and a shopping plaza and multi-family residences to the west. Regional access to the site is available via Interstate 15 (I-15) at the Foothill Boulevard exit, approximately three miles west of the project site. Local access to the site is provided via Foothill Boulevard and Live Oak Avenue.

The project site comprises two parcels (Assessor's Parcel Numbers [APN] 0230-071-03 and 0230-071-04).

EXISTING SITE CONDITIONS

The project site is approximately 8.8 acres (9.5 gross acres with road improvements and sidewalks) and currently consist of undeveloped vacant land. Grasses and weeds cover much of the project site. No existing structures are present on-site; however, an area in the northeastern portion of the project site contains a slab foundation of a former structure. The project site topography is generally flat with a slight regional slope to the southwest. The project site is located in the northern portion of the Upper Santa Ana Valley, which is a broad downwarped (i.e., downward and depressed) area encompassing approximately 50 miles, at an elevation of approximately 1,240 to 1,245 feet, an approximate elevation difference of 5 feet. Overhead electrical lines are present at the north-central portion of the site.

The project site is designated Multi-Family High Residential (R-MFH) by the City of Fontana *General Plan Land Use Map*.¹ The project site is zoned Multi-Family High Density Residential (R5) by the City of Fontana *Zoning District Map*.²

PROJECT DESCRIPTION

The proposed project includes construction of a mixed-use residential apartment complex with 340 multi-family units, 1,500 square feet of commercial space, and four live-work units. The mixed-use residential apartment complex would consist of two four-story buildings. The 340 multi-family apartment units would be either 1, 2, or 3 bedrooms, ranging in size from 726 square feet to 1,388 square feet. The four live-work units would each be approximately 1,492 square feet. Additionally, the project would include the construction of 529 surface parking spaces, including 9 commercial parking spaces, located in the western, central, and southern portions of the project site.

The project would also include approximately 5,600-square-foot indoor amenity space, comprised of an 1,800-square-foot lobby/leasing office, a 1,375-square-foot fitness center, a 1,700-square-foot clubroom, and a 720-square-foot business center in the northern building. The northern building would have two landscaped courtyards, with one containing a pool and spa, and the southern building would have three landscaped courtyards. The courtyards would contain a barbecue facility equipped with a grill and picnic benches and children's tot lot with play equipment.

Construction of the proposed project is anticipated to begin in December 2022 and would take approximately 26 months to complete, concluding in January 2025. Construction activities would occur from 7:00 a.m. to 6:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday, except for purposes of emergencies. The construction period would include demolition, excavation, grading, trenching, installation of utilities, building construction, architectural coating, paving activities, and installation of landscaping and hardscape elements.

ENERGY CONSERVATION

In 1975, largely in response to the oil crisis of the 1970s, the California State Legislature adopted Assembly Bill 1575 (AB 1575), which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts 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 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 California Natural Resources Agency created Appendix F, *Energy Conservation*, in the State's *California Environmental Quality Act Guidelines* (CEQA Guidelines). 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 December 2018, the California Natural Resources Agency finalized updates to the CEQA Guidelines. New CEQA Guidelines Section 15126.2(b) treats “wasteful, inefficient, or unnecessary” energy

¹ City of Fontana, *General Plan Land Use Map*, March 3, 2021.

² City of Fontana, *Zoning District Map*, March 3, 2021.

consumption as a significant environmental impact. As a result, energy thresholds have been incorporated into Appendix G, *Environmental Checklist Form*, of the CEQA Guidelines. This technical memorandum has been prepared to assess the project's energy impacts in accordance with Appendix G of the CEQA Guidelines.

EXISTING SETTING

Electricity/Natural Gas Services

Southern California Edison (SCE) provides electrical services to the City. Over the past 15 years, electricity generation in California 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, including cogeneration, wind energy, solar energy, geothermal energy, biomass conversion, transformation plants, and small hydroelectric plants. Unlike petroleum production, electricity generation is usually not 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 megawatts (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 kilowatt-hours (kWh), megawatt-hours (MWh), or gigawatt-hours (GWh).

The Southern California Gas Company (SoCalGas) provides natural gas services to the City. Natural gas is a hydrocarbon fuel found in reservoirs beneath the Earth's surface and is composed primarily of methane (CH₄). 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 as it is a relatively clean alternative to other fossil fuels like 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. Nearly 45 percent of natural gas burned in California is used for electricity generation.³ While the supply of natural gas in the United States and production has increased greatly, California produces little and imports 90 percent of its natural gas.⁴

Electricity and natural gas services are available to locations where land uses could be developed. The City's ongoing development review process includes an opportunity for publicly- and privately-owned utility providers, including SCE and SoCalGas, to review and comment on all development proposals. The input facilitates a detailed review of all projects 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 for each project is evaluated during the development review process. Utility providers are bound by contract to update energy systems to meet any additional demand.

Energy Usage

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy usage in California was 7,802.3 trillion BTUs in 2019 (the most recent year for which this specific data is available), which

³ California Energy Commission, *Supply and Demand of Natural Gas in California*, <https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california>, December 29, 2021.

⁴ Ibid.

equates to an average of 198 million BTUs per capita.⁵ Of California’s total energy usage, the breakdown by sector is 39.3 percent transportation, 23.2 percent industrial, 18.9 percent commercial, and 18.7 percent residential.⁶ Electricity and natural gas in California are generally consumed by stationary users such as residences, commercial uses, and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use. In 2020, taxable gasoline sales (including aviation gasoline) in California accounted for 14,008,219,800 gallons of gasoline.⁷ The electricity consumption attributable to San Bernardino County (the County) from 2011 to 2020 is shown in Table 1, *Electricity Consumption in San Bernardino County 2011-2020*. As indicated in Table 1, electricity consumption in the County steadily increased from 2011 to 2020.

Table 1
Electricity Consumption in San Bernardino County 2011-2020

Year	Electricity Consumption (in millions of kilowatt hours)
2011	13,730
2012	14,348
2013	14,374
2014	14,731
2015	14,731
2016	14,946
2017	15,282
2018	15,376
2019	15,316
2020	15,969

Source: California Energy Commission, *Electricity Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed December 29, 2021.

The natural gas consumption attributable to the County from 2011 to 2020 is shown in Table 2, *Natural Gas Consumption in San Bernardino County 2011-2020*. Natural gas consumption in the County dropped in 2014 and 2015 but has steadily increased since then.

⁵ U.S. Energy Information Administration, *Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2018*, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=CA, accessed by December 29, 2021.

⁶ Ibid.

⁷ California Department of Tax and Fee Administration, *Net Taxable Gasoline Gallons (Including Aviation Gasoline)*, <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>, accessed December 29, 2021.

Table 2
Natural Gas Consumption in San Bernardino County 2011-2020

Year	Natural Gas Consumption (in millions of therms)
2011	503.91
2012	485.68
2013	502.66
2014	452.66
2015	469.63
2016	494.45
2017	493.07
2018	500.06
2019	547.27
2020	527.24

Source: California Energy Commission, *Natural Gas Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed December 29, 2021.

Automotive fuel consumption in the County from 2011 to 2020 with the projection of 2021 is shown in Table 3, *Automotive Fuel Consumption in San Bernardino County 2011-2021*. As shown in Table 3, on-road automotive fuel consumption in the County has risen from 2011 to 2016 and has steadily dropped since 2017. Heavy-duty vehicle fuel consumption steadily increased from 2011 to 2021.

Table 3
Automotive Fuel Consumption in San Bernardino County 2011-2021

Year	On-Road Automotive Fuel Consumption (gallons)	Heavy-Duty Vehicle/Diesel Fuel Consumption (Construction Equipment) (gallons)
2011	966,626,072	182,208,363
2012	958,384,115	181,152,949
2013	961,604,643	190,262,486
2014	976,226,347	195,888,495
2015	1,011,523,234	197,223,020
2016	1,046,227,304	210,181,781
2017	1,027,824,927	212,595,627
2018	1,008,930,484	215,879,515
2019	988,074,005	218,163,692
2020	970,868,222	219,579,730
2021 (projected)	954,663,081	220,859,813

Source: California Air Resources Board, *EMFAC2017 v1.0.2.*, <https://www.arb.ca.gov/emfac/2017/>, accessed December 29, 2021.

REGULATORY SETTING

State

Senate Bill 100. Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible

renewable energy resources so that the total kilowatt-hours (kWh) of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045. The bill requires the California Public Utilities Commission (CPUC), CEC, State board, and all other State agencies to incorporate that policy into all relevant planning. In addition, SB 100 requires the CPUC, CEC, and State board to utilize programs authorized under existing statutes to achieve that policy and, as part of a public process, issue a joint report to the Legislature by January 1, 2021, and every four years thereafter, that includes specified information relating to the implementation of the policy.

California Building Energy Efficiency Standards (Title 24). The 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as “Title 24,” became effective on January 1, 2020. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Residential buildings constructed using the 2019 Title 24 standards will use about 53 percent less energy (mainly due to solar photovoltaic panels and lighting upgrades) when compared to those constructed under the 2016 Title 24 standards, and nonresidential buildings constructed under the 2019 Title 24 standards will use about 30 percent less energy (mainly due to lighting upgrades) when compared to those constructed under the 2016 Title 24 standards.⁸ The standards require developers to use better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

California Green Building Standards. California Green Building Standards (CALGreen) is the first-in-the-nation mandatory green buildings standards code. The California Building Standards Commission developed the green building standards in an effort to meet the goals of California’s landmark initiative Assembly Bill (AB) 32, which established a comprehensive program of cost-effective reductions of greenhouse gases (GHGs) to 1990 levels by 2020. CALGreen was developed to (1) reduce GHGs from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the environmental directives of the administration. The 2019 CALGreen standards went into effect on January 1, 2020. CALGreen requires that new buildings employ water efficiency and conservation, increase building system efficiencies (e.g., lighting, heating/ventilation and air conditioning [HVAC], and plumbing fixtures), divert construction waste from landfills, and incorporate electric vehicles charging infrastructure. There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials.⁹

California Public Utilities Commission Energy Efficiency Strategic Plan. The CPUC prepared an Energy Efficiency Strategic Plan (Strategic Plan) in September 2008 with the goal of promoting energy efficiency and a reduction in GHG emissions. In January 2011, a lighting chapter was adopted and added to the Strategic Plan. The Strategic Plan is California’s single roadmap to achieving maximum energy savings in the State between 2009 and 2020, and beyond 2020. The Strategic Plan contains the practical strategies and actions to attain significant statewide energy savings as a result of a year-long collaboration by energy experts, utilities, businesses, consumer groups, and governmental organizations in California, throughout the West, nationally and internationally. The plan includes the following four “big bold” strategies:

⁸ California Energy Commission, *2019 Building Energy Efficiency Standards*, dated March 2018.

⁹ U.S. Green Building Council, *Green Building Costs and Savings*, <https://www.usgbc.org/articles/green-building-costs-and-savings>, accessed December 29, 2021.

1. All new residential construction in California will be zero net energy by 2020.
2. All new commercial construction in California will be zero net energy by 2030.
3. Heating, ventilation and air condition (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate.
4. All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

California Energy Commission Integrated Energy Policy Report. In 2002, the California State legislature adopted SB 1389, which requires the CEC to develop an Integrated Energy Policy Report (IEPR) every two years. SB 1389 requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices, and use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy, and protect public health and safety.

The CEC adopted the 2021 Integrated Energy Policy Report (2021 IEPR) Volume I, Volume II, and Volume IV on February 1, 2022.¹⁰ The 2021 IEPR provides information and policy recommendations on advancing a clean, reliable, and affordable energy system for all Californian.¹¹ Volume I of the 2021 IEPR addresses actions needed to reduce the greenhouse gas emissions related to the buildings in which California live and work, with an emphasis on energy efficiency; Volume II examines actions needed to increase the reliability and resiliency of California's energy system; and Volume IV reports on California's energy demand outlook, including a forecast to 2035 and long-term energy demand scenarios of 2050. The 2021 IEPR builds on the goals and work in response to AB 758 (Energy: energy audit), SB 350 (Clean Energy and Pollution Reduction Act), AB 3232 (Zero-emissions buildings and sources of heat energy), and the 2019 IEPR to further a comprehensive approach toward decarbonizing buildings in a cost-effective and equitable manner. For the 2021 IEPR, the CEC extends the forecast timeframe to 15 years to coincide with several State goals that are planned for 2035 and improves methodologies to better quantify and predict the likelihood, severity, and duration of future extreme heat events.

Federal Energy Policy and Conservation Act of 1975. This Act (a) directs the Commission and the Justice Department to participate in developing, implementing, monitoring, and reporting on voluntary agreements and plans established by oil companies to deal with emergency international oil shortages and provides them a role in any Department of Energy (DOE) advisory committees on international allocation of oil products, under a limited antitrust exemption established by the Act; and (b) requires the Commission to issue regulations providing that certain household appliances must bear labels showing the products' "energy efficiency ratings". The Act also added FTC-related provisions to the Motor Vehicle Information and Cost Savings Act regarding fuel economy and recycled oil. 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,

¹⁰ California Energy Commissions, *2021 Integrated Energy Policy Report*, <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report>, accessed February 24, 2022.

¹¹ California Energy Commissions, *Final 2021 Integrated Energy Policy Report Volume I Building Decarbonization - (Clean Version)*, February 1, 2022.

compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States.

Local

City of Fontana

General Plan Update 2015-2035

A General Plan is a guiding document that provides residents, elected officials, business owners, and other stakeholders with direction on how to meet the needs of a growing city and provides a greater quality of life for its current and future residents. The City of Fontana adopted the *General Plan Update 2015-2035* (General Plan Update) on November 13, 2018. Chapter 10, Infrastructure and Green Systems, and Chapter 12, Sustainability and Resilience, of the General Plan Update identify goals and policies to pursue sustainability and resilience by making resource-efficient choices to conserve water, energy, and materials, improve air quality, and adjust to changing conditions. The following goals and policies focus on renewable energy and energy efficiency and are applicable to the proposed project:

Chapter 10 Infrastructure and Green Systems

Goal 10.7: Fontana is an energy-efficient community.

Policy 10.7.1: Promote renewable energy and distributed energy systems in new development and retrofits of existing development to work towards the highest levels of low-carbon energy-efficiency.

Chapter 12 Sustainability and Resilience

Goal 12.3: Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses.

Policy 12.3.1: Promote renewable energy programs for government, Fontana businesses, and Fontana residences.

Goal 12.5: Green Building techniques are used in new development and retrofits.

Policy 12.5.1: Promote green building through guidelines, awards and nonfinancial incentives.

Goal 12.6: Fontana is a leader [in] energy-efficient development and retrofits.

Policy 12.6.1: Promote energy-efficient development in Fontana.

Policy 12.6.2: Meet or exceed state goals for energy-efficient new construction.

CALIFORNIA ENVIRONMENTAL QUALITY ACT THRESHOLDS

In accordance with the CEQA Guidelines, project impacts are evaluated to determine whether significant adverse environmental impacts would occur. This analysis will focus on the project's potential impacts

and provide mitigation measures, if required, to reduce or avoid any potentially significant impacts that are identified. According to Appendix G of the CEQA Guidelines, 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 (refer to Impact Statement EN-1); and/or
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency (refer to Impact Statement EN-2).

Appendix F of the CEQA Guidelines is an advisory document that assists environmental document preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. The analysis in Impact Statement EN-1 relies upon Appendix F of the CEQA Guidelines, which includes the following criteria to determine whether this threshold of significance is met:

- **Criterion 1:** The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- **Criterion 2:** The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- **Criterion 3:** The effects of the project on peak and base period demands for electricity and other forms of energy.
- **Criterion 4:** The degree to which the project complies with existing energy standards.
- **Criterion 5:** The effects of the project on energy resources.
- **Criterion 6:** The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Quantification of the project's energy usage is presented and addresses **Criterion 1**. The discussion on construction-related energy use focuses on **Criteria 2, 4, and 5**. The discussion on operational energy use is divided into transportation energy demand and building energy demand. The transportation energy demand analysis discusses **Criteria 2, 4, and 6**, and the building energy demand analysis discusses **Criteria 2, 3, 4, and 5**.

IMPACT ANALYSIS

EN-1 **WOULD THE PROJECT RESULT IN POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES, DURING PROJECT CONSTRUCTION OR OPERATION?**

This analysis focuses on three sources of energy that are relevant to the proposed project: electricity,

natural gas, and transportation fuel for vehicle trips and off-road equipment associated with project construction and operations. The analysis of operational electricity is based on the California Emissions Estimator Model version 2020.4.0 (CalEEMod) modeling results for the project. The project’s estimated electricity consumption is based primarily on CalEEMod’s default settings for the County, and consumption factors provided by SCE and the SoCalGas, who are the electricity and natural gas providers for the City and the project site. The results of the CalEEMod and energy consumption modeling are included in Appendix A, Energy Data. The amount of operational fuel consumption was estimated using the California Air Resources Board (CARB) Emissions Factor 2017 (EMFAC2017) computer program which provides projections for typical daily fuel (i.e., diesel and gasoline) usage in the County, and the project’s annual vehicle miles traveled (VMT) outputs from CalEEMod. The 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.

The project’s estimated energy consumption is summarized in Table 4, Project and Countywide Energy Consumption. As shown in Table 4, the project’s energy usage would constitute an approximate 0.0091 percent increase over the County’s typical annual electricity consumption and an approximate 0.0094 percent increase over the County’s typical annual natural gas consumption. The project’s construction and operational vehicle fuel consumption would increase the County’s consumption by 0.0817 percent and 0.0353 percent, respectively (**Criterion 1**).

**Table 4
Project and Countywide Energy Consumption**

Energy Type	Project Annual Energy Consumption ¹	San Bernardino County Annual Energy Consumption ²	Percentage Increase Countywide ²
Electricity Consumption	1,455 MWh	15,968,516 MWh	0.0091%
Natural Gas Consumption	49,508 therms	527,236,428 therms	0.0094%
Fuel Consumption			
• Construction Fuel Consumption ³	177,196 gallons	219,824,796 gallons	0.0806%
• Operational Automotive Fuel Consumption ³	313,489 gallons	878,326,877 gallons	0.0357%
Notes:			
1. As modeled in CalEEMod version 2020.4.0.			
2. The project increases in electricity and natural gas consumption are compared to the total consumption in San Bernardino County in 2020. The project increases in automotive fuel consumption are compared with the projected Countywide diesel fuel consumption in 2022 (start of construction), and gasoline fuel consumption in 2025 (operational year). Countywide fuel consumption is projected from the California Air Resources Board EMFAC2017 model. San Bernardino County electricity consumption data source: California Energy Commission, <i>Electricity Consumption by County</i> , http://www.ecdms.energy.ca.gov/elecbycounty.aspx , accessed December 29, 2021. San Bernardino County natural gas consumption data source: California Energy Commission, <i>Gas Consumption by County</i> , http://www.ecdms.energy.ca.gov/gasbycounty.aspx , accessed December 29, 2021.			
3. Project fuel consumption calculated based on CalEEMod results. Countywide fuel consumption is projected from the California Air Resources Board EMFAC2017 model.			
Refer to <u>Appendix A</u> for assumptions used in this analysis.			

Construction-Related Energy

Project construction 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, building construction, and architectural coatings. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with State requirements that heavy-duty diesel 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 (**Criterion 4**).

The project-related 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 demand for energy compared to overall local and regional demand for construction materials. As indicated in Table 4, the project's fuel consumption from construction would be approximately 177,196 gallons, which would increase fuel use in the County by 0.0806 percent. As such, construction would have a nominal effect on the local and regional energy supplies (**Criterion 2**). 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 (**Criterion 5**). Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. As such, the impact would be less than significant.

Operational Energy Consumption

Transportation Energy Demand

Table 4 provides an estimate of the daily fuel consumed by vehicles traveling to and from the project site. Based on the *Alta Fontana Apartments Traffic Study Scoping Assessment* (Traffic Scoping Assessment), prepared by Fehr & Peers (dated January 13, 2022), the proposed project would generate 1,644 daily trips. As indicated in Table 4, project operational daily trips are estimated to consume approximately 313,489 gallons of fuel per year, which would increase the County's automotive fuel consumption by 0.0357 percent. The project does not propose any unusual features that would result in excessive long-term operational fuel consumption (**Criterion 2**).

The key drivers of transportation-related fuel consumption are job locations/commuting distance and many personal choices on when and where to drive for various purposes. Those factors are outside of the scope of the design of the proposed project. However, the project would provide electric vehicle charging stations and bicycle parking in compliance with CALGreen Code, and the closest bus stop is within 100 feet of the project site. Inclusion of electrical vehicle charging stations would encourage and support the use of electric vehicles, and the availability of other alternative transportation methods would reduce the petroleum fuel consumption associated with operation of the project (**Criterion 4** and **Criterion 6**).

Therefore, fuel consumption associated with project-related vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. The impact would be less than significant.

Building Energy Demand

The CEC developed 2020 to 2035 forecasts for energy consumption and peak demand in support of the 2021 IEPR for each of the major electricity and natural gas planning areas and the State based on the economic and demographic growth projections.¹² CEC forecasts that the statewide annual average growth rates of energy demand between 2021 and 2030 would be 1.3 percent to 2.3 percent for electricity and less than 0.1 percent to 0.8 percent increase for natural gas.¹³ As shown in [Table 4](#), operational energy consumption of the project would represent approximately 0.0091 percent increase in electricity consumption and 0.0094 percent increase in natural gas consumption over the current Countywide usage, which would be significantly below CEC's forecasts and the current Countywide usage. Therefore, the project would be consistent with the CEC's energy consumption forecasts. As such, the project would not require additional energy capacity or supplies (**Criterion 2**). Additionally, the project would consume energy during the same time periods as other mixed-use projects. As a result, the project would not result in unique or more intensive peak or base period electricity demand (**Criterion 3**).

The proposed project would be required to comply with 2019 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 2019 Title 24 standards significantly reduces energy usage (53 percent compared to the 2016 Title 24 standards). The Title 24 Building Energy Efficiency Standards are updated every three years and become more stringent between each update. The project would also incorporate sustainable building design features, such as reserving area on the roof for future solar panels and installing energy efficient appliances (**Criterion 4**).

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 60 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 that new development projects will not result in the waste of the finite energy resources (**Criterion 5**).

Therefore, the project would not cause wasteful, inefficient, and unnecessary consumption of building energy during project operation, or preempt future energy development or future energy conservation. The impact would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

¹² California Energy Commission, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*, February 2022. Annual average growth rates of electricity demand and natural gas per capita demand are shown in Figure 10 and Figure 14, respectively

¹³ Ibid.

EN-2 WOULD THE PROJECT CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY?

The City currently does not have a plan pertaining to renewable energy or energy efficiency. The project would be required to comply with the latest Title 24 and CALGreen standards pertaining to building energy efficiency. Compliance with 2019 Title 24 standards and 2019 CALGreen Code would ensure the project incorporates energy-efficient windows, insulation, lighting, and ventilation systems, which are consistent with the Energy Efficiency Strategic Plan strategies and the IEPR building energy efficiency recommendations. The project would also install high efficiency lighting, energy efficient appliances, water-efficient fixtures, and provide electric vehicle charging stations and bicycle parking spaces. The project would also comply with the City’s General Plan, refer to Table 5, General Plan Consistency Analysis. Additionally, per the RPS, the project would utilize electricity provided by SCE that is composed of 43 percent renewable energy as of 2020 and would achieve at least 60 percent renewable energy by 2030.¹⁴ Therefore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and impacts would be less than significant.

**Table 5
General Plan Consistency Analysis**

Goal/Policy	Project Consistency
Chapter 10 Infrastructure and Green Systems	
Goal 10.7: Fontana is an energy-efficient community. Policy 10.7.1: Promote renewable energy and distributed energy systems in new development and retrofits of existing development to work towards the highest levels of low-carbon energy-efficiency.	Consistent. The project would comply with the latest Title 24 and CALGreen Energy Efficiency standards. In addition, the project would be designed to accommodate rooftop solar panels. As such, the project would be consistent with General Plan Goal 10.7.
Chapter 12 Sustainability and Resilience	
Goal 12.3: Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses. <ul style="list-style-type: none"> • Policy 12.3.1: Promote renewable energy programs for government, Fontana businesses, and Fontana residences. 	Consistent. As discussed above, the project would be designed to accommodate rooftop solar panels. As such, the project would be consistent with General Plan Goal 12.3.
Goal 12.5: Green building techniques are used in new development and retrofits. <ul style="list-style-type: none"> • Policy 12.5.1: Promote green building through guidelines, awards, and nonfinancial incentives. 	Consistent. The project would meet the 2019 Title 24 Building Energy Efficiency Standards. Additionally, the project would meet the applicable requirements of the CALGreen Code, incorporating energy-efficient windows, insulation, lighting, and ventilation systems. As such, the project would be consistent with General Plan Goal 12.5.
Goal 12.6: Fontana is a leader [in] energy-efficient development and retrofits. <ul style="list-style-type: none"> • Policy 12.6.1: Promote energy-efficient development in Fontana. • Policy 12.6.2: Meet or exceed state goals for energy-efficient new construction. 	Consistent. As discussed above, the project would meet the 2019 Title 24 Building Energy Efficiency Standards and applicable requirements of the CALGreen Code. The project would also install high efficiency lighting, energy efficient appliances, water-efficient fixtures. As such, the project would be consistent with General Plan Goal 12.6.
Source: 1. City of Fontana, <i>General Plan Update 2015-2035, Chapter 10 Infrastructure and Green</i> , November 13, 2018, https://www.fontana.org/DocumentCenter/View/26749/Chapter-10---Infrastructure-and-Green-Systems , accessed December 28, 2021. 2. City of Fontana, <i>General Plan Update 2015-2035, Chapter 12 Sustainability and Resilience</i> , November 13, 2018, https://www.fontana.org/DocumentCenter/View/26751/Chapter-12---Sustainability-and-Resilience , accessed December 28, 2021.	

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

¹⁴ Southern California Edison, *2020 Edison International Sustainability Report*, March 2021.

REFERENCES

Software/Websites

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4. California Energy Commission, *Electricity Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed December 29, 2021.
5. California Energy Commission, *Natural Gas Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed December 29, 2021.
6. California Energy Commission, *Supply and Demand of Natural Gas in California*, <https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california>, December 29, 2021.
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8. California Department of Tax and Fee Administration, *Net Taxable Gasoline Gallons (Including Aviation Gasoline)*, <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>, accessed December 29, 2021.
9. California Energy Commission, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*, February 2022.
10. U.S. Energy Information Administration, *Table F33: Total Energy Consumption, Price, and Expenditure Estimates*, 2019, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=CA, accessed by December 29, 2021.
11. U.S. Green Building Council, *Green Building Costs and Savings*, <https://www.usgbc.org/articles/green-building-costs-and-savings>, accessed December 29, 2021.
12. California Air Resources Board, *EMFAC2017 v1.0.2.*, <https://www.arb.ca.gov/emfac/2017/>, accessed December 29, 2021.

Appendix A
Energy Data

**Alta Fontana Mixed Use Project
Energy Calculations**

Land Use	Natural Gas Use		Electricity Use	
	(kBTU/yr)	(Therms)	(kWh/yr)	(MWh/yr)
Apartments Mid Rise	4,947,470	49,475	1,362,240	1,362
City Park	0	0	0	0
Parking Lot	0	0	74,200	74
Strip Mall	3,300	33	18,210	18
Totals	4,950,770	49,508	1,454,650	1,455

1 kBTU = 0.01 therms

Energy Type	Project Annual Energy Consumption	San Bernardino County Annual Energy Consumption (2020)	Percentage Increase Countywide
Electricity (MWh)	1,455	15,968,516	0.0091%
Natural Gas (Therms)	49,508	527,236,428	0.0094%

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Alta Fontana Mixed Use Project Energy Calculations

Vehicle Type	Percent of Vehicle Trips ¹	Daily Trips ²	Annual Vehicle Miles Traveled	Average Fuel Economy (miles per gallon) ³	Total Annual Fuel Consumption (gallons) ⁴
Passenger Cars	0.54	893	2,983,054	22	135,593
Light/Medium Trucks	0.40	652	2,176,783	17.3	125,826
Heavy Trucks/Other	0.06	100	333,248	6.4	52,070
TOTAL⁶	1.00	1,644	5,492,794	--	313,489
Notes:					
1. Percent of Vehicle Trip distribution based on trip characteristics within the CalEEMod model.					
2. Daily Trips taken from ITE manual.					
3. Average fuel economy derived from the Department of Transportation.					
4. Total Daily Fuel Consumption calculated by dividing the daily VMT by the average fuel economy (i.e., VMT/Average Fuel Economy).					
5. Values may be slightly off due to rounding.					
Source: Refer to CalEEMod outputs for assumptions used in this analysis.					

County On-Road
2025
878,326,877
0.0357%

**Alta Fontana Mixed Use Project
Energy Calculations**

WORKER TRIPS						
Phase	Phase Length (# days)	# Worker Trips	Worker Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Grading	33	15	14.7	7277		292.20
Building Construction	528	383	14.7	2972693		119371.63
Architectural Coating	44	77	14.7	49804	24.90284233	1999.92
Paving	22	15	14.7	4851		194.80
						121858.54
VENDOR TRIPS						
Phase	Phase Length (# days)	# Vendor Trips	Vendor Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day)	Total Fuel Consumption
Grading	33	0	6.9	0		0.00
Building Construction	528	90	6.9	621		74.43
Architectural Coating	44	0	6.9	0	8.343886151	0.00
Paving	22	0	6.9	0		0.00
						74.43
HAULING TRIPS						
Phase	Phase Length (# days)	# Hauling Trips	Hauling Trip Length	Total VMT	Fuel Consumption Factor (Miles/Gallon/Day) ¹	Total Fuel Consumption
Grading	33	0	10	0		0.00
Building Construction	528	3184	10	31840		3815.97
Architectural Coating	44	0	10	0	8.343886151	0.00
Paving	22	0	10	0		0.00
						3815.97
TOTAL OFF-SITE MOBILE GALLONS CONSUMED DURING CONSTRUCTION						125,748.93

**Alta Fontana Mixed Use Project
Energy Calculations**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallons per hour)	Duration (total hours/day)	# days	Total Fuel Consumption (gallons)
Grading	Excavators	1	8	158	0.38	2.4016	8	33	634.02
Grading	Rubber Tired Dozers	1	8	247	0.40	3.952	8	33	1043.33
Grading	Graders	1	8	187	0.41	3.0668	8	33	809.64
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37	1.4356	24	33	1137.00
Paving	Pavers	2	8	187	0.41	3.0668	16	22	1079.51
Paving	Paving Equipment	2	8	247	0.4	3.952	16	22	1391.10
Paving	Rollers	2	8	97	0.37	1.4356	16	22	505.33
Building Construction	Cranes	1	7	231	0.29	2.6796	7	528	9903.80
Building Construction	Generator Sets	1	8	84	0.74	2.4864	8	528	10502.55
Building Construction	Welders	1	8	46	0.45	0.828	8	528	3497.47
Building Construction	Forklifts	3	8	89	0.20	0.712	24	435	7433.28
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	1.4356	21	435	13114.21
Architectural Coating	Air Compressors	1	6	78	0.48	1.4976	6	44	395.37
Total:									51,447
Off-Site Mobile Construction Total:									125,749
TOTAL:									177,196
Notes:									
Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor									
Where:									
Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.									
Source: Refer to CalEEMod outputs for assumptions used in this analysis.									

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Alta Fontana Mixed Use
San Bernardino-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	530.00	Space	3.00	212,000.00	0
City Park	2.52	Acre	1.77	109,771.20	0
Apartments Mid Rise	344.00	Dwelling Unit	4.00	344,000.00	984
Strip Mall	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	32
Climate Zone	10			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total Lot Acreage is 8.8 Acre.

Construction Phase - Per Construction Questionnaire

Trips and VMT - Per Construction Questionnaire

Grading -

Architectural Coating - Per SCAQMD Rule 1113

Vehicle Trips - Per Traffic Study

Road Dust -

Area Coating - Per SCAQMD Rule 1113

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use Change -

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403

Area Mitigation - SCAQMD Rule 445 prohibits the installation of any open or enclosed permanent wood-burning furnaces in new constructions. Thus, only natural gas hearth would occur.

Energy Mitigation -

Water Mitigation -

Waste Mitigation - Per AB 341

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	230.00	528.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	2,600.00
tblGrading	MaterialImported	0.00	22,870.00
tblLandUse	LotAcreage	4.77	3.00
tblLandUse	LotAcreage	2.52	1.77
tblLandUse	LotAcreage	9.05	4.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblVehicleTrips	ST_TR	4.91	4.54
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	42.04	54.67
tblVehicleTrips	SU_TR	4.09	4.54
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	20.43	54.67
tblVehicleTrips	WD_TR	5.44	4.54
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	44.32	54.67

2.0 Emissions Summary

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2022	0.0611	0.5479	0.5482	1.5500e-003	0.1486	0.0208	0.1694	0.0556	0.0194	0.0750	0.0000	143.1897	143.1897	0.0183	8.9300e-003	146.3078
2023	0.4018	2.5666	4.0044	0.0105	0.6773	0.1014	0.7786	0.1881	0.0953	0.2834	0.0000	962.2484	962.2484	0.0935	0.0442	977.7540
2024	1.7194	2.3102	3.8371	9.9700e-003	0.6067	0.0874	0.6941	0.1628	0.0822	0.2449	0.0000	913.5093	913.5093	0.0897	0.0387	927.2715
Maximum	1.7194	2.5666	4.0044	0.0105	0.6773	0.1014	0.7786	0.1881	0.0953	0.2834	0.0000	962.2484	962.2484	0.0935	0.0442	977.7540

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					
2022	0.0611	0.5479	0.5482	1.5500e-003	0.0950	0.0208	0.1158	0.0313	0.0194	0.0507	0.0000	143.1896	143.1896	0.0183	8.9300e-003	146.3077
2023	0.4018	2.5666	4.0044	0.0105	0.6445	0.1014	0.7459	0.1753	0.0953	0.2706	0.0000	962.2480	962.2480	0.0935	0.0442	977.7537
2024	1.7194	2.3102	3.8371	9.9700e-003	0.6067	0.0874	0.6941	0.1628	0.0822	0.2449	0.0000	913.5089	913.5089	0.0897	0.0387	927.2711
Maximum	1.7194	2.5666	4.0044	0.0105	0.6445	0.1014	0.7459	0.1753	0.0953	0.2706	0.0000	962.2480	962.2480	0.0935	0.0442	977.7537

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.00	0.00	0.00	0.00	6.03	0.00	5.26	9.11	0.00	6.14	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	12-1-2022	2-28-2023	1.2242	1.2242
2	3-1-2023	5-31-2023	0.7122	0.7122
3	6-1-2023	8-31-2023	0.7104	0.7104
4	9-1-2023	11-30-2023	0.7062	0.7062
5	12-1-2023	2-29-2024	0.6818	0.6818
6	3-1-2024	5-31-2024	0.6720	0.6720
7	6-1-2024	8-31-2024	2.0233	2.0233
8	9-1-2024	9-30-2024	0.3359	0.3359
		Highest	2.0233	2.0233

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	3.0273	0.1301	5.7378	5.7700e-003		0.3482	0.3482		0.3482	0.3482	36.5394	76.0242	112.5636	0.1146	2.4800e-003	116.1664
Energy	0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	522.1681	522.1681	0.0268	7.4800e-003	525.0689
Mobile	0.8080	1.2713	8.4173	0.0191	2.0710	0.0153	2.0863	0.5532	0.0143	0.5675	0.0000	1,813.6671	1,813.6671	0.1003	0.0892	1,842.7580
Waste						0.0000	0.0000		0.0000	0.0000	32.4867	0.0000	32.4867	1.9199	0.0000	80.4844
Water						0.0000	0.0000		0.0000	0.0000	7.1459	85.9034	93.0493	0.7412	0.0182	117.0055
Total	3.8620	1.6295	14.2522	0.0264	2.0710	0.3819	2.4529	0.5532	0.3809	0.9341	76.1719	2,497.7628	2,573.9347	2.9028	0.1174	2,681.4831

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	1.9081	0.1051	3.5783	6.0000e-004		0.0249	0.0249		0.0249	0.0249	0.0000	80.1546	80.1546	7.0100e-003	1.3600e-003	80.7360
Energy	0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	522.1681	522.1681	0.0268	7.4800e-003	525.0689
Mobile	0.8080	1.2713	8.4173	0.0191	2.0710	0.0153	2.0863	0.5532	0.0143	0.5675	0.0000	1,813.6671	1,813.6671	0.1003	0.0892	1,842.7580
Waste						0.0000	0.0000		0.0000	0.0000	16.2433	0.0000	16.2433	0.9600	0.0000	40.2422
Water						0.0000	0.0000		0.0000	0.0000	5.7167	73.4335	79.1502	0.5934	0.0146	98.3395
Total	2.7428	1.6045	12.0928	0.0212	2.0710	0.0586	2.1296	0.5532	0.0576	0.6108	21.9600	2,489.4232	2,511.3833	1.6875	0.1127	2,587.1445

	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	28.98	1.54	15.15	19.61	0.00	84.65	13.18	0.00	84.87	34.61	71.17	0.33	2.43	41.87	4.01	3.52

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	12/1/2022	1/16/2023	5	33	
2	Building Construction	Building Construction	12/1/2022	12/9/2024	5	528	
3	Architectural Coating	Architectural Coating	7/1/2024	8/29/2024	5	44	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	9/1/2024	10/1/2024	5	22
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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 33

Acres of Paving: 3

Residential Indoor: 696,600; Residential Outdoor: 232,200; Non-Residential Indoor: 166,830; Non-Residential Outdoor: 55,610; Striped Parking Area: 12,720 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

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
Grading	6	15.00	0.00	3,184.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	383.00	90.00	0.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT

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Architectural Coating	1	77.00	0.00	0.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2022

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					0.0852	0.0000	0.0852	0.0385	0.0000	0.0385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.2294	0.1680	3.3000e-004		0.0104	0.0104		9.5200e-003	9.5200e-003	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8920
Total	0.0214	0.2294	0.1680	3.3000e-004	0.0852	0.0104	0.0955	0.0385	9.5200e-003	0.0480	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8920

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

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	2.6600e-003	0.0882	0.0287	3.3000e-004	9.1500e-003	7.7000e-004	9.9200e-003	2.5100e-003	7.4000e-004	3.2500e-003	0.0000	32.5571	32.5571	1.3600e-003	5.1600e-003	34.1281
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	3.2800e-003	0.0887	0.0346	3.5000e-004	0.0110	7.8000e-004	0.0117	2.9900e-003	7.5000e-004	3.7400e-003	0.0000	34.0083	34.0083	1.4000e-003	5.2000e-003	35.5928

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					0.0316	0.0000	0.0316	0.0143	0.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.2294	0.1680	3.3000e-004		0.0104	0.0104		9.5200e-003	9.5200e-003	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8919
Total	0.0214	0.2294	0.1680	3.3000e-004	0.0316	0.0104	0.0419	0.0143	9.5200e-003	0.0238	0.0000	28.6602	28.6602	9.2700e-003	0.0000	28.8919

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3.2 Grading - 2022

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	2.6600e-003	0.0882	0.0287	3.3000e-004	9.1500e-003	7.7000e-004	9.9200e-003	2.5100e-003	7.4000e-004	3.2500e-003	0.0000	32.5571	32.5571	1.3600e-003	5.1600e-003	34.1281
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.9000e-004	5.8500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4512	1.4512	4.0000e-005	4.0000e-005	1.4647
Total	3.2800e-003	0.0887	0.0346	3.5000e-004	0.0110	7.8000e-004	0.0117	2.9900e-003	7.5000e-004	3.7400e-003	0.0000	34.0083	34.0083	1.4000e-003	5.2000e-003	35.5928

3.2 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					0.0521	0.0000	0.0521	0.0203	0.0000	0.0203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4100e-003	0.0987	0.0811	1.6000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	14.3333	14.3333	4.6400e-003	0.0000	14.4492
Total	9.4100e-003	0.0987	0.0811	1.6000e-004	0.0521	4.2600e-003	0.0563	0.0203	3.9200e-003	0.0242	0.0000	14.3333	14.3333	4.6400e-003	0.0000	14.4492

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3.2 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	9.6000e-004	0.0365	0.0141	1.6000e-004	4.5800e-003	3.1000e-004	4.8900e-003	1.2600e-003	3.0000e-004	1.5500e-003	0.0000	15.5703	15.5703	6.5000e-004	2.4700e-003	16.3217
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	2.9000e-004	2.1000e-004	2.6800e-003	1.0000e-005	9.0000e-004	0.0000	9.1000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.7065	0.7065	2.0000e-005	2.0000e-005	0.7127
Total	1.2500e-003	0.0367	0.0167	1.7000e-004	5.4800e-003	3.1000e-004	5.8000e-003	1.5000e-003	3.0000e-004	1.7900e-003	0.0000	16.2768	16.2768	6.7000e-004	2.4900e-003	17.0344

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					0.0193	0.0000	0.0193	7.5300e-003	0.0000	7.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4100e-003	0.0987	0.0811	1.6000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	14.3333	14.3333	4.6400e-003	0.0000	14.4492
Total	9.4100e-003	0.0987	0.0811	1.6000e-004	0.0193	4.2600e-003	0.0236	7.5300e-003	3.9200e-003	0.0115	0.0000	14.3333	14.3333	4.6400e-003	0.0000	14.4492

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3.2 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	9.6000e-004	0.0365	0.0141	1.6000e-004	4.5800e-003	3.1000e-004	4.8900e-003	1.2600e-003	3.0000e-004	1.5500e-003	0.0000	15.5703	15.5703	6.5000e-004	2.4700e-003	16.3217
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	2.9000e-004	2.1000e-004	2.6800e-003	1.0000e-005	9.0000e-004	0.0000	9.1000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.7065	0.7065	2.0000e-005	2.0000e-005	0.7127
Total	1.2500e-003	0.0367	0.0167	1.7000e-004	5.4800e-003	3.1000e-004	5.8000e-003	1.5000e-003	3.0000e-004	1.7900e-003	0.0000	16.2768	16.2768	6.7000e-004	2.4900e-003	17.0344

3.3 Building Construction - 2022

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	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424
Total	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424

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3.3 Building Construction - 2022

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	1.6900e-003	0.0456	0.0162	1.8000e-004	6.2400e-003	5.2000e-004	6.7600e-003	1.8000e-003	4.9000e-004	2.3000e-003	0.0000	17.9768	17.9768	4.8000e-004	2.6600e-003	18.7823
Worker	0.0159	0.0125	0.1495	4.0000e-004	0.0462	2.5000e-004	0.0464	0.0123	2.3000e-004	0.0125	0.0000	37.0546	37.0546	1.0600e-003	1.0600e-003	37.3983
Total	0.0176	0.0581	0.1657	5.8000e-004	0.0524	7.7000e-004	0.0532	0.0141	7.2000e-004	0.0148	0.0000	55.0314	55.0314	1.5400e-003	3.7200e-003	56.1806

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	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424
Total	0.0188	0.1718	0.1800	3.0000e-004		8.9000e-003	8.9000e-003		8.3700e-003	8.3700e-003	0.0000	25.4898	25.4898	6.1100e-003	0.0000	25.6424

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3.3 Building Construction - 2022

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	1.6900e-003	0.0456	0.0162	1.8000e-004	6.2400e-003	5.2000e-004	6.7600e-003	1.8000e-003	4.9000e-004	2.3000e-003	0.0000	17.9768	17.9768	4.8000e-004	2.6600e-003	18.7823
Worker	0.0159	0.0125	0.1495	4.0000e-004	0.0462	2.5000e-004	0.0464	0.0123	2.3000e-004	0.0125	0.0000	37.0546	37.0546	1.0600e-003	1.0600e-003	37.3983
Total	0.0176	0.0581	0.1657	5.8000e-004	0.0524	7.7000e-004	0.0532	0.0141	7.2000e-004	0.0148	0.0000	55.0314	55.0314	1.5400e-003	3.7200e-003	56.1806

3.3 Building Construction - 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					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383

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3.3 Building Construction - 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	0.0132	0.4317	0.1748	2.1000e-003	0.0738	3.0900e-003	0.0769	0.0213	2.9600e-003	0.0243	0.0000	203.9111	203.9111	5.3100e-003	0.0301	213.0239
Worker	0.1735	0.1295	1.6201	4.5900e-003	0.5459	2.7500e-003	0.5487	0.1450	2.5300e-003	0.1475	0.0000	426.3810	426.3810	0.0112	0.0116	430.1082
Total	0.1867	0.5612	1.7948	6.6900e-003	0.6197	5.8400e-003	0.6256	0.1663	5.4900e-003	0.1718	0.0000	630.2921	630.2921	0.0165	0.0417	643.1321

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380

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3.3 Building Construction - 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	0.0132	0.4317	0.1748	2.1000e-003	0.0738	3.0900e-003	0.0769	0.0213	2.9600e-003	0.0243	0.0000	203.9111	203.9111	5.3100e-003	0.0301	213.0239
Worker	0.1735	0.1295	1.6201	4.5900e-003	0.5459	2.7500e-003	0.5487	0.1450	2.5300e-003	0.1475	0.0000	426.3810	426.3810	0.0112	0.0116	430.1082
Total	0.1867	0.5612	1.7948	6.6900e-003	0.6197	5.8400e-003	0.6256	0.1663	5.4900e-003	0.1718	0.0000	630.2921	630.2921	0.0165	0.0417	643.1321

3.3 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	0.1810	1.6536	1.9885	3.3200e-003		0.0754	0.0754		0.0710	0.0710	0.0000	285.1744	285.1744	0.0674	0.0000	286.8603
Total	0.1810	1.6536	1.9885	3.3200e-003		0.0754	0.0754		0.0710	0.0710	0.0000	285.1744	285.1744	0.0674	0.0000	286.8603

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3.3 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	0.0122	0.4121	0.1626	1.9600e-003	0.0698	2.8800e-003	0.0727	0.0202	2.7500e-003	0.0229	0.0000	190.2751	190.2751	4.8700e-003	0.0281	198.7747
Worker	0.1527	0.1087	1.4288	4.2200e-003	0.5165	2.5000e-003	0.5190	0.1372	2.3000e-003	0.1395	0.0000	394.8327	394.8327	9.6000e-003	0.0101	398.0947
Total	0.1649	0.5208	1.5915	6.1800e-003	0.5864	5.3800e-003	0.5917	0.1573	5.0500e-003	0.1624	0.0000	585.1078	585.1078	0.0145	0.0383	596.8694

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	0.1810	1.6536	1.9885	3.3100e-003		0.0754	0.0754		0.0710	0.0710	0.0000	285.1741	285.1741	0.0674	0.0000	286.8600
Total	0.1810	1.6536	1.9885	3.3100e-003		0.0754	0.0754		0.0710	0.0710	0.0000	285.1741	285.1741	0.0674	0.0000	286.8600

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3.3 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	0.0122	0.4121	0.1626	1.9600e-003	0.0698	2.8800e-003	0.0727	0.0202	2.7500e-003	0.0229	0.0000	190.2751	190.2751	4.8700e-003	0.0281	198.7747
Worker	0.1527	0.1087	1.4288	4.2200e-003	0.5165	2.5000e-003	0.5190	0.1372	2.3000e-003	0.1395	0.0000	394.8327	394.8327	9.6000e-003	0.0101	398.0947
Total	0.1649	0.5208	1.5915	6.1800e-003	0.5864	5.3800e-003	0.5917	0.1573	5.0500e-003	0.1624	0.0000	585.1078	585.1078	0.0145	0.0383	596.8694

3.4 Architectural Coating - 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					
Archit. Coating	1.3487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0268	0.0398	7.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251
Total	1.3527	0.0268	0.0398	7.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Architectural Coating - 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	5.4900e-003	3.9100e-003	0.0514	1.5000e-004	0.0186	9.0000e-005	0.0187	4.9300e-003	8.0000e-005	5.0200e-003	0.0000	14.1979	14.1979	3.5000e-004	3.6000e-004	14.3152
Total	5.4900e-003	3.9100e-003	0.0514	1.5000e-004	0.0186	9.0000e-005	0.0187	4.9300e-003	8.0000e-005	5.0200e-003	0.0000	14.1979	14.1979	3.5000e-004	3.6000e-004	14.3152

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0268	0.0398	7.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251
Total	1.3527	0.0268	0.0398	7.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	5.6172	5.6172	3.2000e-004	0.0000	5.6251

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Architectural Coating - 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	5.4900e-003	3.9100e-003	0.0514	1.5000e-004	0.0186	9.0000e-005	0.0187	4.9300e-003	8.0000e-005	5.0200e-003	0.0000	14.1979	14.1979	3.5000e-004	3.6000e-004	14.3152
Total	5.4900e-003	3.9100e-003	0.0514	1.5000e-004	0.0186	9.0000e-005	0.0187	4.9300e-003	8.0000e-005	5.0200e-003	0.0000	14.1979	14.1979	3.5000e-004	3.6000e-004	14.3152

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	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	3.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	3.8000e-004	5.0000e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3829	1.3829	3.0000e-005	4.0000e-005	1.3943
Total	5.3000e-004	3.8000e-004	5.0000e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3829	1.3829	3.0000e-005	4.0000e-005	1.3943

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	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	3.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	3.8000e-004	5.0000e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3829	1.3829	3.0000e-005	4.0000e-005	1.3943
Total	5.3000e-004	3.8000e-004	5.0000e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.3829	1.3829	3.0000e-005	4.0000e-005	1.3943

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.8080	1.2713	8.4173	0.0191	2.0710	0.0153	2.0863	0.5532	0.0143	0.5675	0.0000	1,813.667 1	1,813.667 1	0.1003	0.0892	1,842.758 0
Unmitigated	0.8080	1.2713	8.4173	0.0191	2.0710	0.0153	2.0863	0.5532	0.0143	0.5675	0.0000	1,813.667 1	1,813.667 1	0.1003	0.0892	1,842.758 0

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,561.76	1,561.76	1561.76	5,336,771	5,336,771
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	82.01	82.01	82.01	156,022	156,022
Total	1,643.77	1,643.77	1,643.77	5,492,794	5,492,794

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
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

4.4 Fleet Mix

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.543085	0.056300	0.173085	0.134258	0.025645	0.007009	0.011926	0.017481	0.000552	0.000248	0.024848	0.000956	0.004606
City Park	0.543085	0.056300	0.173085	0.134258	0.025645	0.007009	0.011926	0.017481	0.000552	0.000248	0.024848	0.000956	0.004606
Parking Lot	0.543085	0.056300	0.173085	0.134258	0.025645	0.007009	0.011926	0.017481	0.000552	0.000248	0.024848	0.000956	0.004606
Strip Mall	0.543085	0.056300	0.173085	0.134258	0.025645	0.007009	0.011926	0.017481	0.000552	0.000248	0.024848	0.000956	0.004606

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	257.9763	257.9763	0.0218	2.6400e-003	259.3072
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	257.9763	257.9763	0.0218	2.6400e-003	259.3072
NaturalGas Mitigated	0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.1918	264.1918	5.0600e-003	4.8400e-003	265.7617
NaturalGas Unmitigated	0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.1918	264.1918	5.0600e-003	4.8400e-003	265.7617

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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 Mid Rise	4.94747e+006	0.0267	0.2280	0.0970	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.0157	264.0157	5.0600e-003	4.8400e-003	265.5846
City Park	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
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	3300	2.0000e-005	1.6000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1761	0.1761	0.0000	0.0000	0.1772
Total		0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.1918	264.1918	5.0600e-003	4.8400e-003	265.7617

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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 Mid Rise	4.94747e+006	0.0267	0.2280	0.0970	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.0157	264.0157	5.0600e-003	4.8400e-003	265.5846
City Park	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
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	3300	2.0000e-005	1.6000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1761	0.1761	0.0000	0.0000	0.1772
Total		0.0267	0.2281	0.0972	1.4600e-003		0.0184	0.0184		0.0184	0.0184	0.0000	264.1918	264.1918	5.0600e-003	4.8400e-003	265.7617

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.36224e+006	241.5878	0.0204	2.4700e-003	242.8341
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	74200	13.1590	1.1100e-003	1.3000e-004	13.2269
Strip Mall	18210	3.2295	2.7000e-004	3.0000e-005	3.2461
Total		257.9763	0.0218	2.6300e-003	259.3072

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.36224e+006	241.5878	0.0204	2.4700e-003	242.8341
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	74200	13.1590	1.1100e-003	1.3000e-004	13.2269
Strip Mall	18210	3.2295	2.7000e-004	3.0000e-005	3.2461
Total		257.9763	0.0218	2.6300e-003	259.3072

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
- Use only Natural Gas Hearths

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	1.9081	0.1051	3.5783	6.0000e-004		0.0249	0.0249		0.0249	0.0249	0.0000	80.1546	80.1546	7.0100e-003	1.3600e-003	80.7360
Unmitigated	3.0273	0.1301	5.7378	5.7700e-003		0.3482	0.3482		0.3482	0.3482	36.5394	76.0242	112.5636	0.1146	2.4800e-003	116.1664

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	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.1268	0.0892	2.1868	5.5800e-003		0.3285	0.3285		0.3285	0.3285	36.5394	70.2161	106.7555	0.1090	2.4800e-003	110.2187
Landscaping	0.1070	0.0409	3.5510	1.9000e-004		0.0197	0.0197		0.0197	0.0197	0.0000	5.8081	5.8081	5.5800e-003	0.0000	5.9477
Total	3.0273	0.1301	5.7378	5.7700e-003		0.3482	0.3482		0.3482	0.3482	36.5394	76.0242	112.5636	0.1146	2.4800e-003	116.1664

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.1349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.5100e-003	0.0642	0.0273	4.1000e-004		5.1900e-003	5.1900e-003		5.1900e-003	5.1900e-003	0.0000	74.3465	74.3465	1.4200e-003	1.3600e-003	74.7883
Landscaping	0.1070	0.0409	3.5510	1.9000e-004		0.0197	0.0197		0.0197	0.0197	0.0000	5.8081	5.8081	5.5800e-003	0.0000	5.9477
Total	1.9081	0.1051	3.5783	6.0000e-004		0.0249	0.0249		0.0249	0.0249	0.0000	80.1546	80.1546	7.0000e-003	1.3600e-003	80.7360

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System
- Use Water Efficient Landscaping

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	79.1502	0.5934	0.0146	98.3395
Unmitigated	93.0493	0.7412	0.0182	117.0055

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	22.413 / 14.1299	86.7074	0.7371	0.0181	110.5151
City Park	0 / 3.00253	5.9159	5.0000e-004	6.0000e-005	5.9464
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.111109 / 0.0680989	0.4260	3.6500e-003	9.0000e-005	0.5440
Total		93.0493	0.7412	0.0182	117.0055

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	17.9304 / 13.268	73.2357	0.5900	0.0145	92.3018
City Park	0 / 2.81938	5.5551	4.7000e-004	6.0000e-005	5.5837
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.088887 / 0.0639449	0.3595	2.9200e-003	7.0000e-005	0.4540
Total		79.1502	0.5934	0.0146	98.3395

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Alta Fontana Mixed Use - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.2433	0.9600	0.0000	40.2422
Unmitigated	32.4867	1.9199	0.0000	80.4844

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	158.24	32.1213	1.8983	0.0000	79.5791
City Park	0.22	0.0447	2.6400e-003	0.0000	0.1106
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.58	0.3207	0.0190	0.0000	0.7946
Total		32.4867	1.9199	0.0000	80.4844

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	79.12	16.0606	0.9492	0.0000	39.7896
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.79	0.1604	9.4800e-003	0.0000	0.3973
Total		16.2433	0.9600	0.0000	40.2422

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

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number
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11.0 Vegetation
