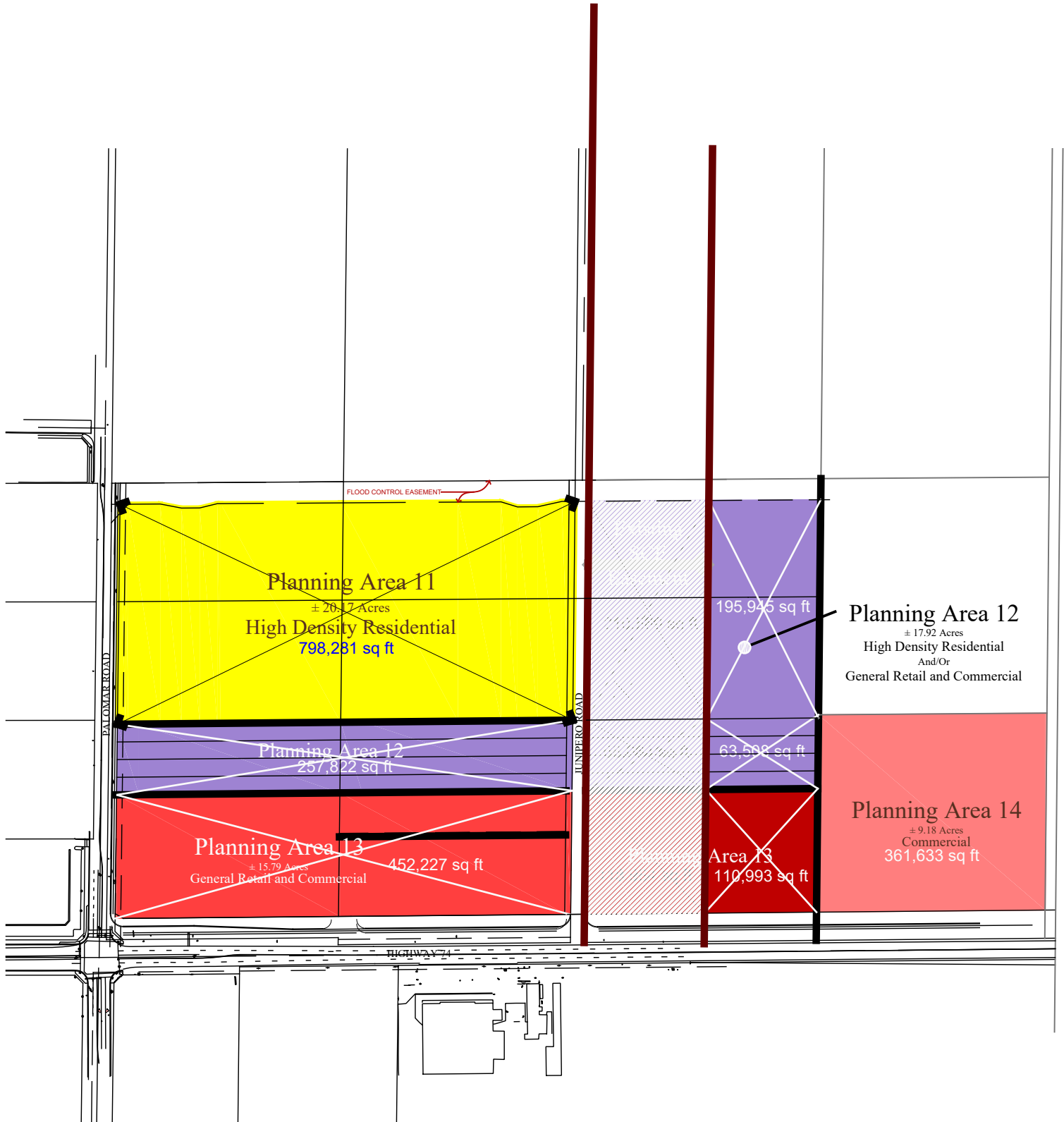


PALOMAR CROSSING ENERGY CONSERVATION ANALYSIS City of Menifee California



PALOMAR CROSSING ENERGY CONSERVATION ANALYSIS City of Menifee, California

Prepared for:

OPTIMUS BUILDING CORPORATION
41391 Kalmia Street, Suite 200
Murrieta, CA 92562

Prepared by:

RK ENGINEERING GROUP, INC.
4000 Westerly Place, Suite 280
Newport Beach, CA 92660

**Bryan Estrada, AICP, PTP
Darshan Shivaiah, MS**

September 25, 2019

Table of Contents

Section	Page
1.0 Introduction	1-1
1.1 Purpose of Report and Study Objectives	1-1
1.2 Site Location	1-1
1.3 Project Description	1-2
1.4 Utility Providers	1-2
1.5 Summary of CEQA Impacts	1-3
1.6 Recommended Mitigation Measures	1-3
1.7 Recommended Project Design Features	1-4
2.0 Energy Setting	2-1
2.1 Background Information	2-1
2.2 U.S Energy Statistics	2-2
2.3 California Energy Statistics	2-3
2.4 Southern California Edison	2-5
2.5 Southern California Gas Company	2-6
3.0 Regulatory Setting	3-1
3.1 Federal Regulations	3-1
3.2 State of California Regulations	3-3
4.0 Project Energy Consumption	4-1
4.1 Energy Consumption Methodology	4-1
4.2 Electricity Consumption	4-1
4.3 Natural Gas Consumption	4-2
4.4 Petroleum Consumption	4-3
4.4.1 Construction	4-3
4.4.2 Operation	4-6
5.0 Energy Impacts	5-1
5.1 Energy Impact Criteria	5-1
5.2 Energy Impact – 1	5-1
5.3 Energy Impact – 2	5-2
6.0 References	6-1

List of Attachments

Tables

Land Use Summary	1
Utility Providers.....	2
CEQA Energy Impact Criteria	3
Btu Conversion Factors	4
U.S. Primary Energy Consumption (Year 2017)	5
U.S. Electricity Generation, by Source (Year 2017)	6
California Energy Consumption by Source (Year 2016)	7
California Electric Generation in Gigawatt Hours (Year 2017).....	8
Southern California Edison Electricity Generation (Year 2017).....	9
Southern California Gas Company Natural Gas Consumption, by Sector (Year 2017)..	10
U.S. Energy Policy Legislative Acts	11
California Energy Policy Legislative Acts and Regulations.....	12
Project Electricity Consumption	13
Project Natural Gas Consumption.....	14
Construction Off-Road Equipment Energy Consumption.....	15
Construction On-Road Trips Energy Consumption	16
Operational Trips Energy Consumption – Annual.....	17
Total Project Energy Consumption – Annual	18

Appendices

CalEEMod Annual Emissions Report	A
EMFAC2014 Vehicle Consumption Data	B

1.0 Introduction

1.1 Purpose of Report and Study Objectives

The purpose of this energy conservation analysis is to review the energy implications of the proposed Palomar Crossing (project) and provide recommendations to reduce wasteful, inefficient and unnecessary consumption of energy during construction and operation. This analysis has been prepared within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.).

CEQA Guidelines, Appendix F, Energy Conservation, describes the framework within which energy conservation should be analyzed. The goal of conserving energy implies the wise and efficient use of energy through decreasing overall per capita energy consumption, decreasing reliance on fossil fuels (such as coal, natural gas and oil), and increasing reliance on renewable energy sources. This analysis considers energy impacts to include:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction and operation.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.

1.2 Site Location

The project site is located the northeast corner of Highway 74 and Palomar Road in the City of Menifee, County of Riverside, as indicated in Exhibit A. The project site is approximately 43 acres in size and is currently vacant. The project site is located within the Menifee North Specific Plan area and the land use designation for the site include Commercial Retail (CR) 0.20-0.35 FAR, Commercial Office (CO) 0.25-1.0 FAR, and Public Utility Corridor (PUC).

The project location map is provided in Exhibit A.

1.3 Project Description

The project will consist of amending three (3) planning areas within the Menifee North Specific Plan. The specific plan amendment would change the allowable development on the project site from business park and general commercial land uses to high density residential and general commercial land uses.

The total potential development of the project would consist of constructing and operating 637 high-density residential apartment dwelling units and 246,312 square feet of general retail and commercial (shopping center) uses.

The proposed project site is split into three planning areas (PAs), PA 11, PA 12, and PA 13. PA 11 would allow up to 484 high density residential apartment dwelling units. PA 12 would allow up to 153 high density residential apartment dwelling units and approximately 77,347 square feet of general retail and commercial uses. PA 13 would allow approximately 168,965 square feet of general retail and commercial uses.

An illuminated parking lot would include a total of 574,727 square feet of parking areas and approximately fifteen percent of each PA would be landscaped.

Construction of the project is estimated to begin in approximately one year with the project expected to be operational in 2023. Therefore, construction has been modeled as beginning in early 2019 and being completed by 2023. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating.

The site plan used in this analysis is illustrated in Exhibit B. The proposed project land uses are shown in Table 1.

Table 1
Land Use Summary

Land Use	Quantity	Metric ¹
High Density Residential (Apartment)	637	DU
General Retail and Commercial (Shopping Center)	246.312	TSF
Commercial Parking Area	574.727	TSF
Landscaping (PA11, PA 12, & PA13)	6.5	AC

¹ DU = Dwelling Unit

TSF = Square Feet

AC = Acre

1.4 Utility Providers

The project will be served by the following utility providers, as shown in Table 2.

Table 2
Utility Providers

Utility	Provider
Electricity	Southern California Edison
Natural Gas	Southern California Gas Company
Water	Eastern Municipal Water District
Sewer	Eastern Municipal Water District

1.5 Summary of CEQA Impacts

Table 3 provides a summary of the project's impact to Energy resources, per the impact criteria described in CEQA Guidelines, Appendix G.

Table 3
CEQA Energy Impact Criteria

Energy Impact Criteria	Potentially Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		X		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

1.6 Recommended Mitigation Measures

The following recommended mitigation measures are provided to reduce the project's impact on energy resources and help ensure the project does not result wasteful, inefficient, or unnecessary consumption of energy.

- MM-1.** Participate in the latest CALGreen Tier 1 voluntary measures for new residential and non-residential structures to minimize the building's impact on the environment and promote a more sustainable design. Residential and non-residential voluntary measures, as described in the Title 24, Part 11, Appendix A4 of the California Building Standards Code, provide measures for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The City of Menifee Building Official should be responsible for verifying that all applicable Tier 1 voluntary measures are implemented.
- MM-2.** Install that high-efficiency lighting (such as LEDs) be installed that is at least 30% more efficient than standard lighting.
- MM-3.** Install ENERGY STAR-compliant appliances wherever appliances are needed on-site.
- MM-4.** Provide on-site and internal bicycle and pedestrian pathways that allow for direct and convenient non-motorized access between the residential and commercial planning areas within the project site.
- MM-5.** Provide secure on-site bicycle storage or cages for the residential uses.
- MM-6.** Provide convenient/highly visible on-site bicycle parking racks for the commercial uses.
- MM-7.** Provide an enhanced bus stop along SR-74, adjacent to the site, with a bus shelter, benches and bus turnout.

1.7 Recommended Project Design Features

The following recommended project design features include standard rules and requirements, best practices and recognized design features for reducing energy demand. Design features are assumed to be part of the conditions of approval for the project.

The following project energy design features are recommended:

Construction Design Features:

- DF-1.** All construction equipment shall be maintained in proper tune.
- DF-2.** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- DF-3.** Carpooling shall be encouraged for construction workers
- DF-4.** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

Operational Design Features:

- DF-5.** The project shall comply with current California Title 24 mandatory standards for residential and non-residential uses.

2.0 Energy Setting

2.1 Background Information

There are many different types and sources of energy produced and consumed in the United States. The U.S. Energy Information Administration (EIA) categorizes energy by primary and secondary sources, renewable and nonrenewable sources, and by the different types of fossil fuels.¹

Primary energy is captured directly from natural resources and includes fossil fuels, nuclear energy, and renewable sources of energy. Electricity is a secondary energy source that results from the transformation of primary energy sources.

A renewable energy source includes solar energy from the sun, geothermal energy from heat inside the earth, wind energy, biomass from plants, and hydropower from flowing water. Nonrenewable energy sources include petroleum products, hydrocarbon gas liquids, natural gas, coal, and nuclear energy.

Fossil fuels are non-renewable resources formed by organic matter over millions of years and include oil, coal and natural gas.

The U.S. EIA defines the five energy consuming sectors within the U.S. as follows:

- **Industrial Sector:** Includes facilities and equipment used for manufacturing, agriculture, mining, and construction.
- **Transportation Sector:** Includes vehicles that transport people or goods, such as cars, trucks, buses, motorcycles, trains, aircraft, boats, barges, and ships.
- **Residential Sector:** Includes homes and apartments.
- **Commercial Sector:** Includes offices, malls, stores, schools, hospitals, hotels, warehouses, restaurants, and places of worship and public assembly.
- **Electric Power Sector:** Consumes primary energy to generate most of the electricity the other four sectors consume.

Energy sources are measured in different physical units: liquid fuels are measured in barrels or gallons, natural gas in cubic feet, coal in short tons, and electricity in kilowatts and kilowatt-hours. In the United States, British thermal units (Btu), a measure of heat energy, is commonly used for comparing different types of energy to each other.

¹ U.S. Energy Information Administration (EIA). https://www.eia.gov/energyexplained/?page=us_energy_home#tab1

Table 4
Btu Conversion Factors¹

Energy source/fuel	Btu Conversion Factor ²
Electricity	1 kilowatthour = 3,412 Btu
Natural gas	1 cubic foot = 1,037 Btu 1 therm = 100,000 Btu
Motor gasoline	1 gallon = 120,429 Btu ³
Diesel fuel	1 gallon = 137,381 Btu
Heating oil	1 gallon = 138,500 Btu
Propane	1 gallon = 91,333 Btu
Wood	1 cord = 20,000,000 Btu ⁴

¹ Source: https://www.eia.gov/energyexplained/index.php?page=about_btu.

² Weighted averages for energy sources/fuels by end-use sectors, 2015. Conversion are approximate.

³ Gasoline sold at retail in the United States, with about 10% ethanol content by volume.

⁴ A cord of wood is a volume unit and does not take wood density or moisture content into account. Wood heat content varies significantly with moisture content.

2.2 U.S. Energy Statistics

U.S. energy production and consumption data provide context for the project within the broader domestic energy setting. Calendar year 2017 is the most current data published by the U.S. EIA.

Table 5 shows the total U.S. primary energy consumption for Year 2017.

Table 5
U.S. Primary Energy Consumption (Year 2017)¹

Primary Energy Source	Energy Consumption	
	Btu (in Quadrillions)	Percentage
Total Fossil Fuel Consumption	78.04	79.9%
Petroleum (Excluding Biofuels)	36.17	37.0%
Natural Gas (Excluding Supplemental Gaseous Fuels)	28.03	28.7%
Coal	13.84	14.2%
Total Renewable Energy Consumption	11.17	11.4%
Biomass Energy	5.08	5.2%
Hydroelectric Power	2.77	2.8%
Wind Energy	2.34	2.4%
Solar Energy	0.77	0.8%
Geothermal Energy	0.21	0.2%
Nuclear Electric Power	8.42	8.6%
Total Primary Energy Consumption	97.63	100%

¹ U.S EIA website. <https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T01.03#/?f=A>

Fossil fuels are the main source of energy produced and consumed in the U.S., and in year 2017, the U.S. produced almost 90 percent of the total energy it consumed domestically; with crude oil imports primarily making up the difference.² Also notable in year 2017, is that renewable energy production, mainly attributed to wind and solar, reached new record highs.²

Electricity is produced from many different energy sources and technologies. In 2017, the generation of electric power consumed approximately 38.1 percent of all energy domestically.³

Table 6 shows the amount of electricity generated by primary energy sources in the U.S. for year 2017.

Table 6
U.S. Electricity Generation, by Source (Year 2017)¹

Energy Source	Electricity Generation	
	Thousand Megawatt-hours	Percentage
Natural Gas	1,308,884	32.3%
Coal	1,205,835	29.7%
Petroleum	21,390	0.5%
Nuclear	804,950	19.8%
Hydroelectric (Conventional, less pumped storage)	293,838	7.2%
Solar (Utility-scale and small-scale generation)	77,276	1.9%
Renewable Sources (Excluding hydro and solar)	332,991	8.2%
Other	13,094	0.3%
Total Electricity Generation (2017)	4,058,258	100%

¹ U.S. EIA website. <https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T07.02A#/?f=A>

2.3 California Energy Statistics

California produced about 2,431 trillion Btu of total energy in year 2016 and consumed over 7,830 trillion Btu, making it the second highest consumer of energy in the country, behind only Texas. However, due in part to its mild climate and energy efficiency programs, California ranks 48th in per capita energy consumption.⁴ Overall, California is a net importer of energy, and consumes more energy than it produces. Energy is imported into California in various forms including natural gas, crude oil and electricity.

² U.S. Energy Information Administration (EIA). https://www.eia.gov/energyexplained/index.php?page=us_energy_home

³ U.S. Energy Information Administration (EIA). https://www.eia.gov/energyexplained/?page=us_energy_home#tab1

⁴ U.S. Energy Information Administration (EIA). <https://www.eia.gov/state/?sid=CA#tabs-1>

Natural Gas is primarily imported via pipelines from Canada, the Rocky Mountains, New Mexico and Texas. Natural gas is the primary source of electricity generated in California.⁵

Crude oil is primarily imported from Alaska, Mexico, Canada, South America and the Middle East. Crude oil is refined at one of the seventeen (17) in-state oil refineries that meet California's strict clean fuel regulations. Refined petroleum products, including gasoline, are also imported from numerous other domestic and foreign sources that are equipped to meet California's fuel standards.⁵

Electricity is imported via transmission lines from the Northwest (Alberta, British Columbia, Idaho, Montana, Oregon, South Dakota, Washington, and Wyoming) and Southwest (Arizona, Baja California, Colorado, Mexico, Nevada, New Mexico, Texas, and Utah) regions of the U.S.⁵

Table 7 shows the State of California's energy consumption estimates for year 2016.

Table 7
California Energy Consumption by Source (Year 2016)¹

Primary Energy Source	Energy Consumption	
	Btu (in Trillions)	Percentage
Total Fossil Fuel Consumption	5,756.7	73.5%
Coal	32.1	0.4%
Natural Gas	2,248.4	28.7%
Motor Gasoline excl. Ethanol	1,714.4	21.9%
Distillate Fuel Oil	560.4	7.2%
Jet Fuel	672.6	8.6%
Hydrocarbon Gas Liquids (HGL)	57.7	0.7%
Residual Fuel	145.8	1.9%
Other Petroleum	325.3	4.2%
Total Renewable Energy Consumption	1,046.7	13.4%
Hydroelectric Power	267.2	3.4%
Biomass	279.8	3.6%
Solar	267.1	3.4%
Wind	124.7	1.6%
Geothermal	107.9	1.4%
Nuclear Electric Power	197.8	2.5%
Net Electricity Imports and Interstate Flow	829.0	10.6%
Total	7,830.2	100.0%

¹ U.S CIA website. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/sum_btu_totcb.html&sid=CA

⁵ California Energy Commission. <https://www.energy.ca.gov/almanac/>

Table 8 shows the sources and fuel types for California's system-wide generation of electricity for year 2017.

Table 8
California Electric Generation in Gigawatt Hours (Year 2017)¹

Fuel Type	California In-State Generation (GWh) ²	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	California Energy Mix (GWh)	California Power Mix
Coal	302	0.15%	409	11,364	12,075	4.13%
Large Hydro	36,920	17.89%	4,531	1,536	42,987	14.72%
Natural Gas	89,564	43.40%	46	8,705	98,315	33.67%
Nuclear	17,925	8.69%	0	8,594	26,519	9.08%
Oil	33	0.02%	0	0	33	0.01%
Other (Petroleum Coke/Waste Heat)	409	0.20%	0	0	409	0.14%
Renewables	61,183	29.65%	12,502	10,999	84,684	29.00%
Biomass	5,827	2.82%	1,015	32	6,874	2.35%
Geothermal	11,745	5.69%	23	937	12,705	4.35%
Small Hydro	6,413	3.11%	1,449	5	7,867	2.70%
Solar	24,331	11.79%	0	5,465	29,796	10.20%
Wind	12,867	6.24%	10,015	4,560	27,442	9.40%
Unspecified Sources of Power	N/A	N/A	22,385	4,632	27,017	9.25%
Total	206,336	100.00%	39,873	45,830	292,039	100.00%

¹ California Energy Commission. CEC-1304 Power Plant Owners Reporting Form and SB 1305 Reporting Regulations. https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html

² In-state generation is reported generation from units one megawatt and larger.

2.4 Southern California Edison

Southern California Edison (SCE) provides electricity service to approximately 180 cities in 15 counties in central, coastal and Southern California; including the project site.⁶ According to the California Energy Commission (CEC), SCE consumed approximately 84,291.608168 GWh of electricity in 2017; which is approximately 28.8% of the State's total electricity usage.⁷

Table 9 shows SCE's electricity generation by energy source for year 2017.

⁶ Southern California Edison. <https://www.sce.com/about-us>

⁷ California Energy Commission. <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>

Table 9
Southern California Edison Electricity Generation (Year 2017)¹

Energy Resource	SCE Electricity Generation	
	GWh ²	Power Mix
Eligible Renewable	26,973.31	32%
Biomass & Biowaste	-	0%
Geothermal	6,743.33	8%
Eligible Hydroelectric	8.43	0%
Solar	10,957.91	13%
Wind	8,429.16	10%
Coal	-	0%
Large Hydroelectric	6,743.33	8%
Natural Gas	16,858.32	20%
Nuclear	5,057.50	6%
Other	-	0%
Unspecified Sources of Power ³	28,659.15	34%
Total	84,291.61	100%

¹ Source: California Energy Commission 2017 SCE Power Content Label.

https://www.energy.ca.gov/pcl/labels/2017_labels/SCE_2017_PCL.pdf

California Energy Commission Electricity Consumption by Entity, SCE, Year 2017, All Sectors

<http://www.ecdms.energy.ca.gov/elecbyutil.aspx>

² GWh generated by energy resources estimated based on total energy consumption and power mix.

³ "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

2.5 Southern California Gas Company

The Southern California Gas Company (SCG) is the nation's largest natural gas distribution utility, providing service to 21.8 million customers in 220 cities and 12 counties from San Luis Obispo to the Mexican border; including service to the project site. SCG owns and operates 3,526 miles of transmission pipelines, 49,715 miles of distribution pipelines and 48,888 miles of service lines. SCG also operates eleven transmission compressor stations and four underground storage facilities with a combined capacity to store 134.1 billion cubic feet of natural gas.⁸

⁸ Southern California Gas Company. <https://www.socalgas.com/about-us/company-profile>

Table 10 shows SCG's natural gas usage by sector for year 2017.

Table 10
Southern California Gas Company
Natural Gas Consumption, by Sector (Year 2017)¹

Sector	SCG Natural Gas Usage – Year 2017	
	(Millions of Therms) ²	(Trillions of Btu) ²
Agriculture & Water Pump	69.433349	6.9433349
Commercial Building	895.861774	89.5861774
Commercial Other	72.182937	7.2182937
Industry	1,716.567095	171.6567095
Mining & Construction	229.745824	22.9745824
Residential	2,158.052907	215.8052907
Total Usage	5,141.843886	514.1843886

¹ Source: California Energy Commission. <http://www.ecdms.energy.ca.gov/gasbyutil.aspx>

² 1 therm = 100,000 Btu

3.0 Regulatory Setting

Energy is controlled through various federal and state laws and regulations. This section provides a brief overview of key energy legislation and policies at the federal and state levels over the past 50 years.

3.1 Federal Regulations

Table 11
U.S. Energy Policy Legislative Acts

Date	Legislative Act and Description
1975	Energy Policy and Conservation Act Established the Strategic Petroleum Reserve and mandated vehicle fuel economy standards
1978	National Energy Act Established tax incentives and disincentives, alternative fuel programs, energy efficiency initiatives, and other regulatory and market-based initiatives in response to the oil crisis earlier in the decade. Comprised of 5 statutes: Energy Tax Act Created the Gas Guzzler tax for vehicles with mileage below specified levels and offered income tax credit for citizens using solar, wind, or geothermal energy sources at home Natural Gas Policy Act Set up wellhead pricing maximums, rules for allocating costs of high-cost gas to industrial consumers, and provided authority to high priority users in times of supply emergency; gave FERC jurisdiction over almost all natural gas production National Energy Conservation Policy Act Replaced Minimum Energy Performance Standards (MEPS) set forth in the EPCA of 1975, changed energy standards from voluntary to mandatory, Required federal agencies to do energy audits of their operations, Provided loans for families to purchase solar heating or cooling systems, and Established grants for schools, hospitals, local governments, and public housing authorities willing to use energy conservation measures Power Plant and Industrial Fuel Use Act Restricted construction of power plants fueled primarily by oil or natural gas and instead encouraged power plants fueled by coal, nuclear, and alternative fuels and restricted use of oil and natural gas in industrial boilers. Repealed in 1987 with the Natural Gas Utilization Act Public Utility Regulatory Policies Act Promoted use of renewable energy, encouraged cogeneration plants.
1980	Energy Security Act Title I: US Synthetic Fuels Corporation Act Established the Synthetic Fuels Corporation (which only existed until 1985) for the purpose of partnering with industry for the creation of a market for domestically-produced synthetic liquid fuels; moved research and development for synthetic fuels away from the Department of Energy and into this public-private partnership with the hopes of speeding up results. Title II: Biomass Energy and Alcohol Fuels Act Provided loan guarantees for small-scale biomass energy projects; established the Office of Alcohol Fuels, the Office of Energy from Municipal Waste.

Table 11
U.S. Energy Policy Legislative Acts

Date	Legislative Act and Description
	<p>Title III: Energy Targets Required the submission of energy targets for net imports.</p> <p>Title IV: Renewable Initiatives Established incentives for the use of renewable energy resources</p> <p>Title V: Solar Energy and Energy Conservation Encouraged energy conservation and the use of solar energy, reducing dependence on foreign energy supplies.</p> <p>Title VI: Geothermal Energy Act Authorized loans from the Geothermal Resources Development Fund for exploration and determination of economic viability of a geothermal reservoir, cancels loan if reservoir is deemed unacceptable for development.</p> <p>Title VII: Acid Precipitation Program Established a task force to study the causes and risks of acid precipitation</p> <p>Title VIII: Strategic Petroleum Reserve Established that 500,000,000 barrels of crude oil must be in storage before any can be sold and calls for the reserve to increase its supply 100,000 barrels per day until the storage capacity is reached</p>
1992	<p>Energy Policy Act Amended the National Energy Conservation Policy Act of 1978. Created framework for wholesale electricity generation. Provided financial incentives to users/developers of clean-fuel vehicles; repealed alternative minimum tax for some producers. Intended to expand the use of natural gas.</p>
2002	<p>Farm Security and Rural Investment Act (Farm Bill) Included \$405 million in mandatory funding over the following 5 years for the procurement of bio-based products, grants and loans for renewable energy and energy efficiency projects, research and development and the bioenergy program. Included, for reasons of national energy and security, rural economic development, and environmental sustainability in light of climate change impacts.</p>
2005	<p>Energy Policy Act Offers tax benefits to individuals who increase energy efficiency in existing homes, buy or lease hybrid/alternative vehicles, required all public utilities to offer net metering on request, increased required amounts of renewable fuel in gasoline sold in the US, and encourages more domestic energy production</p>
2007	<p>Energy Independence and Security Act Increased CAFE standards to 35 mpg (fleet-wide for passenger autos and light trucks) by 2020; instituted new conservation measures for federal fleet vehicles; authorized increased taxpayer-funded biofuel production (36 billion gallons by 2022 - 21 billion of which must be derived from non-cornstarch products). Revised standards for appliances and lighting; all federal buildings must use Energy Star lighting products; training for green jobs; loans for small business energy efficiency improvements.</p>
2008	<p>Food, Conservation, and Energy Act (Farm Bill) Includes provisions for loan guarantees for bio-refineries, payments to support expansion of advanced biofuels, expands the existing Rural Energy for America Program, provides grant monies for biofuel and bio-based product research and development</p>

Table 11
U.S. Energy Policy Legislative Acts

Date	Legislative Act and Description
2009	The American Recovery and Reinvestment Act of 2009 \$800 billion economic stimulus package aimed at job creation and the promotion of investment and consumer spending; included \$4.3 billion in tax credits to homeowners for energy efficiency improvements in 2009-2010, \$300 million for reducing diesel engine emissions, \$21.5 billion for energy infrastructure, \$27.2 billion for energy efficiency and renewable energy research and investment, \$2 billion in research for DOE, \$600 million in research for NOAA
2015	The Clean Power Plan The first comprehensive plan to reduce carbon emissions from power plants by 32% in 2030, compared to 2005 levels. Currently in the process of being repealed by the Trump administration.

¹ Source: Robinson, Brandi. Penn State University. <https://www.e-education.psu.edu/geog432/node/116>

3.2 State of California Regulations

California has a long standing history of support for energy conservation and renewable energy.

Table 10 provides a summary of some of the key legislative acts, policies and regulations in the State of California for encouraging energy conservation and renewable energy.

Table 12
California Energy Policy Legislative Acts and Regulations

Date	Legislative Act and Description
1974	Warren-Alquist Act Established the California Energy Commission (CEC) as the state's primary energy policy and planning agency. Responsible for preparing State Energy Plan. CEC's goals are to reduce energy costs and environmental impacts of energy use, while ensuring a safe, resilient, and reliable supply of energy.
1978	Title 24 of the California Code of Regulations Establishes the Renewable Portfolio Standard (RPS) program, requiring 20% of retail sales from renewable energy by 2017.
2002	Senate Bill 1078 Required 20% of retail sales from renewable energy by 2017.
2003	Energy Action Plan I Accelerated the 20% renewable deadline to 2010.
2005	Energy Action Plan II Recommended further goal of 33% renewable by 2020.
2006	Senate Bill 107 Codified the accelerated 20% renewable by 2010 deadline into law.

Table 12
California Energy Policy Legislative Acts and Regulations

Date	Legislative Act and Description
2008	Executive Order S-14-08 Signed by Gov. Schwarzenegger, requires 33% renewables by 2020.
2009	Executive Order S-21-09 Directs the California Air Resources Board, under its AB 32 authority, to adopt regulations by July 31, 2010, consistent with the 33% renewable energy target established in Executive Order S-14-08.
2011	Senate Bill X1-2 Signed by Gov. Edmund G. Brown, Jr., codifies 33% renewable by 2020 RPS
2015	Senate Bill 350 – Clean Energy and Pollution Reduction Act of 2015 Signed by Gov. Edmund G. Brown, Jr. codifies 50% by 2030 RPS
2018	Senate Bill 100 Signed by Gov. Edmund G. Brown, Jr. codifies 60% by 2030 & 100% by 2045 RPS

¹ Source: California Energy Commission. <https://www.energy.ca.gov/renewables/index.html>

4.0 Project Energy Consumption

4.1 Energy Consumption Methodology

The three (3) main types of energy expected to be consumed by the project include electricity, natural gas and petroleum products in the form of gasoline and diesel fuel. Energy usage for the proposed project is calculated based on the *Palomar Crossing Air Quality and GHG Impact Study*, prepared by RK, April 2018.

The California Emissions Estimator Model Version 2016.3.2 (CalEEMod) is used to calculate energy usage from project construction and operational activities.

The CalEEMod Annual Reports for the project are provided in Appendix A.

4.2 Electricity Consumption

The project will use electricity for many different operational activities including, but not limited to, building heating and cooling, lighting, appliances, electronics, mechanical equipment, electric vehicle charging, and parking lot lighting. Indirect electricity usage will also occur to supply, distribute, and treat water and wastewater. Electricity will be provided through Southern California Edison.

Temporary electricity usage for construction activities may include lighting, electric equipment and mobile office uses, however, CalEEMod does not calculate electricity usage during construction, and which is expected to be short-term and relatively minor compared to the operational demand, electricity usage during construction is not counted in this analysis.

Table 13 shows the project's estimated operational electricity consumption in kilowatt-hours per year (kWh/year) and millions of Btu per year.

Table 13
Project Electricity Consumption

Land Use/Activity	Unmitigated Electricity Consumption ¹	
	(kWhr/yr) ²	(MBtu/yr) ²
High Density Residential (Apartment)	3,095,990	10,563.518
General Retail and Commercial (Shopping Center)	3,110,920	10,614.459
Parking Lot	201,154	686.337
Water Supply and Treatment ³	1,079,016	3,681.603
Electric Vehicle Service Equipment (EVSE) ^{4,5}	710,514	2,424.274
Total	8,197,594	27,970.191

¹ Source: Palomar Crossing Air Quality and GHG Impact Study, prepared by RK, April 2018.

² kWhr/yr = Kilowatt Hours per Year

MBtu/yr = Million British Thermal Units per Year

³ Water supply and treatment includes indirect electricity for supply, treatment and distribution of water and wastewater

⁴ EVSE electricity estimates based on U.S. Department of Energy Costs Associated with Non-Residential Electric Vehicle Supply Equipment, November 2015, Appendix C, Electricity Consumption Examples.

https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf

⁵ Assumes 63 charging spaces per CALGreen requirements, Section 5.105.5.3.3.

4.3 Natural Gas Consumption

The project will use natural gas for building heating and cooling, cooking and kitchen appliances and water heating. Natural gas is not expected to be used during construction in any significant quantities and is not included in the overall calculation of the project's natural gas consumption.

Table 14 shows the project's estimated operational natural gas consumption in millions of Btu per year.

Table 14
Project Natural Gas Consumption

Land Use/Activity	Unmitigated Natural Gas Consumption¹ (MBtu/yr)²
High Density Residential (Apartment)	9,920.960
General Retail and Commercial (Shopping Center)	546.813
Total	10,467.773

¹ Source: Palomar Crossing Air Quality and GHG Impact Study, prepared by RK, April 2018.

² MBtu/yr = Millions of British Thermal Units per Year

4.4 Petroleum Consumption

The project's energy consumption from petroleum products is primarily associated with transportation related activities. This includes gasoline and diesel fuel usage for auto and truck trips during construction and operation and off-road equipment usage during construction.

4.4.1 Construction

Construction of the project is estimated last approximately 43 months and consist of site preparation, grading, building construction, paving, and architectural coating phases. Construction activities will consume energy in the form of motor vehicle fuel (gasoline and diesel) for off-road construction equipment and on-road vehicle trips. Vehicle trips include workers and vendors traveling to and from the job-site and there is no earthwork hauling is associated with the project.

Table 15 shows the project's energy consumption for all off-road equipment during construction. For purposes of this analysis, all off-road equipment is assumed to run on diesel fuel. Table 16 shows the project's energy consumption from on-road vehicle trips during construction.

TABLE 15
Construction Off-Road Equipment Energy Consumption

Phase ¹	Phase Duration (Days) ¹	Equipment ¹	Amount ¹	Hours/ Day ¹	Horspower (HP) ¹	Load Factor ¹	HP-hrs ²	Fuel Consumption Rate ³ (hp-hr/gal)	Diesel Fuel Consumption (gal.)	Diesel Fuel Consumption by Phase (gal.)	MBtu ⁴
Site Preparation	30	Rubber Tired Dozers	3	8	247	0.40	71,136.0	18.5	3,845.2	5,707.6	784.114
		Tractors/Loaders/Backhoes	4	8	97	0.37	34,454.4		1,862.4		
Grading	75	Excavators	2	8	158	0.38	72,048.0		3,894.5	13,195.1	1,812.761
		Graders	1	8	187	0.41	46,002.0		2,486.6		
		Rubber Tired Dozers	1	8	247	0.40	59,280.0		3,204.3		
		Scrapers	2	8	367	0.48	211,392.0		1,281.7		
		Tractors/Loaders/Backhoes	2	8	97	0.37	43,068.0		2,328.0		
Building Construction	740	Cranes	1	7	231	0.29	347,008.2		18,757.2	92,508.0	12,708.842
		Forklifts	3	8	89	0.20	316,128.0		17,088.0		
		Generator Sets	1	8	84	0.74	367,987.2		19,891.2		
		Tractors/Loaders/Backhoes	3	7	97	0.37	557,730.6		30,147.6		
		Welders	1	8	46	0.45	122,544.0		6,624.0		
Paving	55	Pavers	2	8	130	0.42	48,048.0		2,597.2	6,303.7	866.002
		Paving Equipment	2	8	132	0.36	41,817.6		2,260.4		
		Rollers	2	8	80	0.38	26,752.0		1,446.1		
Architectural Coating	55	Air Compressors	1	6	78	0.48	12,355.2		667.8	667.8	91.750
Total Energy Requirements									118,382.2		16,263.469

¹ Source: Palomar Crossing Air Quality and GHG Impact Study, prepared by RK, April 2018. (CalEEMod v.2016.3.2)

² HP-hrs = Horsepower Hours.

³ Source: Carl Moyer Program Guidelines. 2017 Revisions. Table D-21. <https://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>

⁴ Mbtu = Millions of Btu; assuming 1 gallon of diesel fuel = 137,381 Btu.

Table 16
Construction On-Road Trips Energy Consumption

Construction Phase ¹	Phase Duration (Days) ¹	Trips /Day ¹	Trip Length ¹	VMT/Phase	Vehicle Class ¹	Vehicle Mix ¹	Average Fuel Economy (MPG) ²	Gasoline			Diesel			Total MBtu ³
								Fuel Split ²	Fuel Consumption by Class (gal.)	Fuel Consumption by Phase (gal.)	Fuel Split ²	Fuel Consumption by class	Fuel Consumption by Phase	
Worker Trips														
Site Preparation	30	18	14.7	7,938	LDA	0.50	28.57	0.9926	137.89		0.0074	1.03		38.55
					LDT1	0.25	23.26	0.9991	85.24	318.73	0.0009	0.08	1.24	
					LDT2	0.25	20.73	0.9986	95.60		0.0014	0.13		
Grading	75	20	14.7	22,050	LDA	0.50	28.57	0.9926	383.04		0.0074	2.86		107.10
					LDT1	0.25	23.26	0.9991	236.78	885.37	0.0009	0.21	3.44	
					LDT2	0.25	20.73	0.9986	265.55		0.0014	0.37		
Building Construction	740	898	14.7	9,768,444	LDA	0.50	28.57	0.9926	169,691.24		0.0074	1,265.08		47,445.22
					LDT1	0.25	23.26	0.9991	104,897.38	392,229.34	0.0009	94.49	1,524.50	
					LDT2	0.25	20.73	0.9986	117,640.72		0.0014	164.93		
Paving	55	15	14.7	12,128	LDA	0.50	28.57	0.9926	210.67		0.0074	1.57		58.90
					LDT1	0.25	23.26	0.9991	130.23	486.95	0.0009	0.12	1.89	
					LDT2	0.25	20.73	0.9986	146.05		0.0014	0.20		
Architectural Coating	55	180	14.7	145,530	LDA	0.50	28.57	0.9926	2,528.06		0.0074	18.85		706.84
					LDT1	0.25	23.26	0.9991	1,562.76	5,843.42	0.0009	1.41	22.71	
					LDT2	0.25	20.73	0.9986	1,752.61		0.0014	2.46		
Sub-Total Worker Trips Energy Consumption								Gasoline (gal.)		399,763.81	Diesel (gal.)		1,553.78	48,356.62
Vendor Trips														
Building Construction	740	249	6.9	1,271,394	MHDT	0.50	8.50	0.1403	10,492.74		0.8597	64,295.14		25,007.36
					HHDT	0.50	5.85	0.0097	1,054.06	11,546.80	0.9903	107,612.09	171,907.23	
Hauling Trips														
Grading	75	0.00	0.0	0	HHDT	1.00	5.85	0.0097	0.00	0.00	0.9903	0.00	0.00	0.00
Total On-Road Construction Trips Energy Usage								Gasoline (gal.)		411,310.61	Diesel (gal.)		173,461.02	73,363.97

¹ Source: Palomar Crossing Air Quality and GHG Impact Study, prepared by RK, April 2018. (CalEEMod v.2016.3.2)

² Source: EMFAC2014 Web Database. <https://www.arb.ca.gov/emfac/2014/>. (See Appendix B for more details.)

³ Mbtu = Millions of Btu; assuming 1 gallon of gasoline fuel = 120,429 Btu and 1 gallon of diesel fuel = 137,381 Btu

4.4.2 Operation

The project is expected to consume energy from the generation of operational auto and truck trips based on the land use mix described in the Palomar Crossing Air Quality and Greenhouse Gas Analysis. Vehicle trips are associated with workers, customers and vendors/non-workers (i.e. delivery, service and maintenance vehicles, etc.) traveling to and from the site.

Table 17 shows the project's energy consumption for all operational trips generated by the project on an annual basis.

Table 17
Operational Trips Energy Consumption

Vehicle Class ¹	Vehicle Mix ¹	Average Fuel Economy (MPG) ²	Annual VMT ¹	Gasoline		Diesel		MBtu/yr ³
				Fuel Split ²	Fuel Consumption (gal./yr)	Fuel Split ²	Fuel Consumption (gal./yr)	
LDA	54.86%	28.57	14,155,030	0.9926	269,792.97	0.0074	2,011.35	32,767.22
LDT1	3.63%	23.26		0.9991	22,040.33	0.0009	19.85	2,657.02
LDT2	18.69%	20.73		0.9986	127,440.57	0.0014	178.67	15,372.09
MDV	11.25%	15.42		0.9875	102,020.13	0.0125	1,291.39	12,463.59
LHD1	1.43%	14.08		0.6650	9,549.48	0.3350	4,810.64	1,810.92
LHD2	0.48%	14.35		0.5100	2,417.76	0.4900	2,322.94	610.30
MHD	1.76%	8.50		0.1403	4,113.02	0.8597	25,202.88	3,957.72
HHH	7.01%	5.85		0.0097	1,646.10	0.9903	168,054.57	23,285.74
OBUS	0.14%	7.25		0.4732	1,301.75	0.5268	1,449.20	355.86
UBUS	0.11%	4.86		0.3269	1,092.08	0.6731	2,248.63	440.44
MCY	0.45%	35.36		1.0000	1,804.61	0.0000	0.00	217.33
SBUS	0.09%	8.10		0.2133	342.18	0.7867	1,262.05	214.59
MH	0.09%	7.88		0.8345	1,346.13	0.1655	266.97	198.79
Total Operational Energy Usage From Transportation				Gasoline	544,907.11	Diesel	209,119.14	94,351.61

¹ Source: Palomar Crossing Air Quality and GHG Impact Study, prepared by RK, April 2018.
(CalEEMod v.2016.3.2)

² Source: EMFAC2014 Web Database. <https://www.arb.ca.gov/emfac/2014/>. (See Appendix B for more details.)

³ MBtu/yr = Millions of Btu per year; assuming 1 gallon of gasoline fuel = 120,429 Btu and 1 gallon of diesel fuel = 137,381 Btu

4.5 Total Project Energy Consumption

The project's total energy consumption is calculated in MBtu and shown in Table 18. Total project energy consumption includes electricity, natural gas and petroleum usage during construction and operation.

Table 18
Total Project Energy Consumption¹

Activity	Total Energy Consumption (Mbtu²)	Average Energy Consumption Per Year (Mbtu²)
Total Construction	89,627.44	34,255.51
Construction: Off-Road Equipment	16,263.47	6,215.88
Construction: On-Road Trips	73,363.97	28,039.63
Total Operational	- -	132,789.58
Operational Electricity	- -	27,970.19
Operational Natural Gas	- -	10,467.77
Operational Petroleum	- -	94,351.61

¹ See Tables 13-17 for more details.

² MBtu/yr = Millions of Btu per year

5.0 Energy Impacts

5.1 Energy Impact Criteria

This analysis has been prepared within the context of the CEQA Guidelines, Appendix F, Energy Conservation, and Appendix G, Environmental Checklist Form. According to CEQA, the goal of conserving energy implies the wise and efficient use of energy through decreasing overall per capita energy consumption, decreasing reliance on fossil fuels (such as coal, natural gas and oil), and increasing reliance on renewable energy sources.

A significant environmental impact would result if the project would;

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

5.2 Energy Impact – 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?

The project's impact is considered less than significant with mitigation. The project will be required to comply with the mandatory requirements of California's Building Energy Efficiency Standards (Title 24, Part 6) and Green Building Standards (CALGreen, Title 24, Part 11). California's building energy efficiency standards are some of the strictest in the nation and the project's compliance with California's building code will ensure that wasteful, inefficient or unnecessary consumption of energy is minimized. The building standards code is designed to reduce the amount of energy needed to heat or cool a building, reduce energy usage for lighting and appliances and promote usage of energy from renewable sources.

The following recommended mitigation measures are provided to reduce the project's impact on energy resources and help ensure the project does not result wasteful, inefficient, or unnecessary consumption of energy.

- MM-1.** Participate in the latest CALGreen Tier 1 voluntary measures for new residential and non-residential structures to minimize the building's impact on the environment and promote a more sustainable design. Residential and non-residential voluntary measures, as described in the Title 24, Part 11, Appendix A4 of the California Building Standards Code, provide measures for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The City of Menifee Building Official should be responsible for verifying that all applicable Tier 1 voluntary measures are implemented.
- MM-2.** Install that high-efficiency lighting (such as LEDs) be installed that is at least 30% more efficient than standard lighting.
- MM-3.** Install ENERGY STAR-compliant appliances wherever appliances are needed on-site.
- MM-4.** Provide on-site and internal bicycle and pedestrian pathways that allow for direct and convenient non-motorized access between the residential and commercial planning areas within the project site.
- MM-5.** Provide secure on-site bicycle storage or cages for the residential uses.
- MM-6.** Provide convenient/highly visible on-site bicycle parking racks for the commercial uses.
- MM-7.** Provide an enhanced bus stop along SR-74, adjacent to the site, with a bus shelter, benches and bus turnout.

The following recommended project design features are provided to help ensure that wasteful, inefficient or unnecessary consumption of energy is minimized.

Construction Design Features:

- DF-1.** All construction equipment shall be maintained in proper tune.
- DF-2.** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.
- DF-3.** Carpooling shall be encouraged for construction workers

- DF-4.** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

Operational Design Features:

- DF-5.** The project shall comply with current California Title 24 mandatory standards for residential and non-residential uses.

5.3 Energy Impact – 2

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The project's impact is considered less than significant as the project will purchase electricity through Southern California Edison which is subject to the requirements of California Senate Bill 100 (SB 100). SB 100 is the most stringent and current energy legislation in California; requiring that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all state agencies by December 31, 2045.⁹

The project will further comply with the mandatory requirements of California's Green Building and Building Energy Efficiency standards that promote renewable energy and energy efficiency.

⁹ SB-100 California Renewables Portfolio Standard Program.
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100

6.0 References

The following references were used in the preparing this analysis.

California Energy Commission. 2017 SCE Power Content Label.

https://www.energy.ca.gov/pcl/labels/2017_labels/SCE_2017_PCL.pdf. Website accessed March 2019.

California Energy Commission. California Energy Almanac.

<https://www.energy.ca.gov/almanac/>. Website accessed March 2019.

California Energy Commission. Electricity Consumption by Entity, SCE, Year 2017, All

Sectors. <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>. Website accessed March 2019.

California Energy Commission. Gas Consumption by Entity, SCG, Year 2017, All Sectors.

<http://www.ecdms.energy.ca.gov/gasbyutil.aspx>. Website accessed March 2019.

California Energy Commission. Renewable Energy Overview and Programs.

<https://www.energy.ca.gov/renewables/index.html>. Website accessed March 2019.

Carl Moyer Program Guidelines. 2017 Revisions. Table D-21.

<https://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>. Website accessed March 2019.

EMFAC2014 Web Database. <https://www.arb.ca.gov/emfac/2014/>. Website accessed

March 2019.

Robinson, Brandi. Penn State University. Department of Geography. Geog 432 Energy

Policy. <https://www.e-education.psu.edu/geog432/node/116>. Website Accessed March 2019.

Southern California Edison. About Us. <https://www.sce.com/about-us>. Website accessed

March 2019.

Southern California Gas Company. Company profile.

<https://www.socalgas.com/about-us/company-profile>. Website accessed March 2019.

SB-100 California Renewables Portfolio Standard Program.

http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Website accessed March 2019.

U.S. Department of Energy. EVSE electricity estimates based on U.S. Department of Energy Costs Associated with Non-Residential Electric Vehicle Supply Equipment. Appendix C Electricity Consumption Examples. November 2015.

https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf. Website accessed March 2019.

U.S. Energy Information Administration (EIA). California State Profile and Energy Estimates.

<https://www.eia.gov/state/?sid=CA#tabs-1>. Website accessed March 2019.

U.S. Energy Information Administration (EIA). Energy Explained.

https://www.eia.gov/energyexplained/?page=us_energy_home#tab1. Website accessed March 2019.

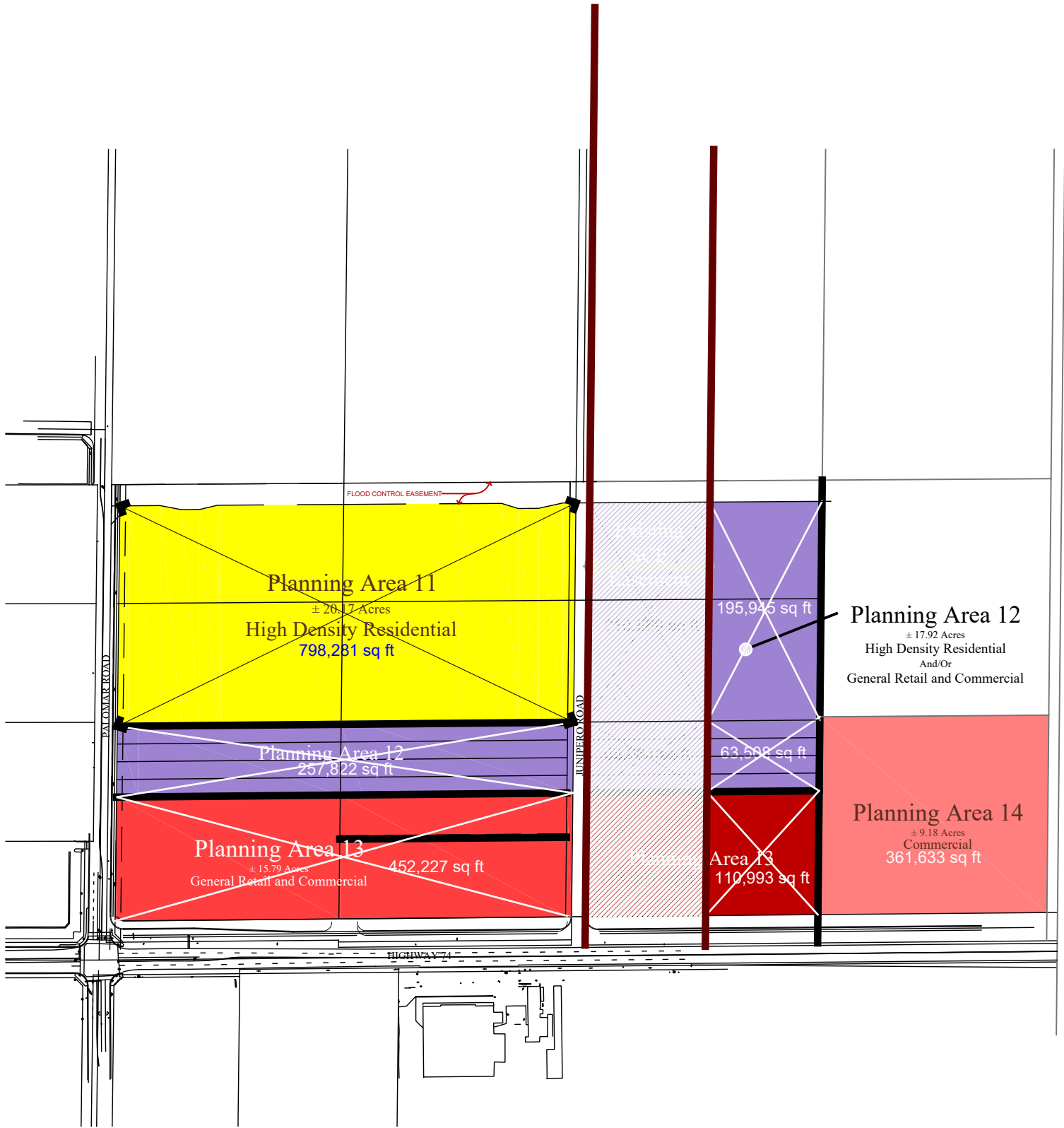
U.S. Energy Information Administration (EIA). Total Energy Data.

<https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T01.03#/?f=A>. Website accessed March 2019.

Exhibits

Exhibit A
Location Map





Appendices

Appendix A

CalEEMod Annual Emissions Output

Palomar Crossing - Riverside-South Coast County, Annual

Palomar Crossing
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	6.50	Acre	6.50	283,140.00	0
Parking Lot	574.73	1000sqft	13.19	574,727.00	0
Apartments Low Rise	637.00	Dwelling Unit	17.66	637,000.00	1822
Regional Shopping Center	246.31	1000sqft	5.65	246,312.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Palomar Crossing - Riverside-South Coast County, Annual

Project Characteristics -

Land Use - ~43 acres (includes PA11, PA12, PA13 w/o SCE Easement) w/ 637 apt DU, 246.312 TSF shopping center, 574.727 TSF commercial parking lots, & 15% each PA landscaping (total = ~6.5 ac).

Construction Phase - Project expected to start construction no earlier than April 2019 and be operational by 2023. No site preparation or demolition needed as the site is relatively bare. CalEEMod default timing used.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading - Site is ~43 acres and is anticipated to be balanced. Site prep estimated to cover ~1/2 of the site (~21.5ac) for removal of vegetation (very little trees/weeds).

Architectural Coating - SCAQMD Rule 1113 limits architectural coatings to 50 g/L VOC and 100 g/L VOC parking lot striping. Architectural coatings mitigated to 10 g/L VOC buildings.

Vehicle Trips - Per TIA, 7.06 trips/DU for apts (includes 3% internal capture rdxn) & 27.82 trips/TSF for shopping ctr (includes 2% internal capture & 25% pass-by rdxns). Pass-by trips changed to 0 and pass-by trips split btwn primary and divert.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Sequestration - Estimated at at least 20 trees per every acre of landscaping (6.5 ac x 20 = ~130 trees). Some of the trees may be planted in parking lots also.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - ~3.77 miles NE downtown Menifee & ~0.07 miles E RTA Rte 27 stop Hwy 74 at Palomar. Sidewalks on/off-site. 637DU/24.16ac= 26.37DU/ac. 1emp/500sf com retail = 246,312sf/500sf = ~493emp/18.85ac= 26.2emp/ac. LUT-3 mixed residential/commercial.

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation - Energy Star appliances to be used on-site. Site to use high-efficiency lighting (such as LEDs) that is at least 30% more efficient than standard.

Water Mitigation - Per Cal Green Standards 20% reduction in indoor water use through use of low flow fixtures. Site to use water-efficient irrigation systems.

Waste Mitigation - AB 341 requires at least 75% of waste be diverted from landfills by 2020.

Palomar Crossing - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	10.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberGas	541.45	573.30
tblFireplaces	NumberWood	31.85	0.00
tblGrading	AcresOfGrading	0.00	21.50
tblLandUse	LandUseSquareFeet	574,730.00	574,727.00
tblLandUse	LandUseSquareFeet	246,310.00	246,312.00
tblLandUse	LotAcreage	39.81	17.66
tblSequestration	NumberOfNewTrees	0.00	130.00
tblVehicleTrips	DV_TP	11.00	13.00
tblVehicleTrips	DV_TP	35.00	40.50
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	87.00
tblVehicleTrips	PR_TP	54.00	59.50
tblVehicleTrips	ST_TR	7.16	7.06
tblVehicleTrips	ST_TR	49.97	27.82
tblVehicleTrips	SU_TR	6.07	7.06
tblVehicleTrips	SU_TR	25.24	27.82
tblVehicleTrips	WD_TR	6.59	7.06
tblVehicleTrips	WD_TR	42.70	27.82
tblWoodstoves	NumberCatalytic	31.85	0.00
tblWoodstoves	NumberNoncatalytic	31.85	0.00

Palomar Crossing - Riverside-South Coast County, Annual

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.6004	5.1727	4.2413	0.0116	1.1452	0.1974	1.3427	0.4295	0.1832	0.6127	0.0000	1,053.850 3	1,053.850 3	0.1438	0.0000	1,057.445 6
2020	0.9110	6.2849	6.9159	0.0239	1.4990	0.1735	1.6725	0.4028	0.1633	0.5661	0.0000	2,187.260 2	2,187.260 2	0.1652	0.0000	2,191.390 8
2021	0.8280	5.6433	6.4352	0.0233	1.4933	0.1386	1.6319	0.4012	0.1303	0.5315	0.0000	2,136.695 5	2,136.695 5	0.1577	0.0000	2,140.637 2
2022	1.0736	2.8476	3.5167	0.0122	0.7741	0.0747	0.8488	0.2078	0.0701	0.2779	0.0000	1,109.928 6	1,109.928 6	0.0919	0.0000	1,112.2248
Maximum	1.0736	6.2849	6.9159	0.0239	1.4990	0.1974	1.6725	0.4295	0.1832	0.6127	0.0000	2,187.260 2	2,187.260 2	0.1652	0.0000	2,191.390 8

Palomar Crossing - Riverside-South Coast County, Annual

2.1 Overall Construction**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					
2019	0.6004	5.1727	4.2413	0.0116	0.7746	0.1974	0.9720	0.2556	0.1832	0.4388	0.0000	1,053.849 8	1,053.849 8	0.1438	0.0000	1,057.445 2
2020	0.9110	6.2849	6.9159	0.0239	1.4990	0.1735	1.6725	0.4028	0.1633	0.5661	0.0000	2,187.259 9	2,187.259 9	0.1652	0.0000	2,191.390 4
2021	0.8280	5.6433	6.4352	0.0233	1.4933	0.1386	1.6319	0.4012	0.1303	0.5315	0.0000	2,136.695 2	2,136.695 2	0.1577	0.0000	2,140.636 9
2022	1.0736	2.8476	3.5167	0.0122	0.7741	0.0747	0.8488	0.2078	0.0701	0.2779	0.0000	1,109.928 3	1,109.928 3	0.0919	0.0000	1,112.2246
Maximum	1.0736	6.2849	6.9159	0.0239	1.4990	0.1974	1.6725	0.4028	0.1832	0.5661	0.0000	2,187.259 9	2,187.259 9	0.1652	0.0000	2,191.390 4

	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	7.55	0.00	6.74	12.06	0.00	8.75	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	4-1-2019	6-30-2019	1.7979	1.7979
2	7-1-2019	9-30-2019	1.9686	1.9686
3	10-1-2019	12-31-2019	1.9899	1.9899
4	1-1-2020	3-31-2020	1.7808	1.7808
5	4-1-2020	6-30-2020	1.7840	1.7840
6	7-1-2020	9-30-2020	1.8036	1.8036
7	10-1-2020	12-31-2020	1.8004	1.8004
8	1-1-2021	3-31-2021	1.5904	1.5904

Palomar Crossing - Riverside-South Coast County, Annual

9	4-1-2021	6-30-2021	1.6133	1.6133
10	7-1-2021	9-30-2021	1.6310	1.6310
11	10-1-2021	12-31-2021	1.6258	1.6258
12	1-1-2022	3-31-2022	1.4656	1.4656
13	4-1-2022	6-30-2022	1.4172	1.4172
14	7-1-2022	9-30-2022	0.5223	0.5223
		Highest	1.9899	1.9899

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	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992
Energy	0.0564	0.4840	0.2170	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	2,600.3454	2,600.3454	0.0950	0.0277	2,610.9693
Mobile	2.7753	19.9063	32.7740	0.1556	12.2300	0.0885	12.3185	3.2763	0.0825	3.3587	0.0000	14,446.4335	14,446.4335	0.6613	0.0000	14,462.9665
Waste						0.0000	0.0000		0.0000	0.0000	111.9800	0.0000	111.9800	6.6178	0.0000	277.4256
Water						0.0000	0.0000		0.0000	0.0000	18.9553	380.0855	399.0407	1.9626	0.0492	462.7718
Total	6.6172	20.5850	39.6228	0.1598	12.2300	0.1735	12.4035	3.2763	0.1675	3.4438	130.9352	17,575.2861	17,706.2213	9.3497	0.0794	17,963.6324

Palomar Crossing - Riverside-South Coast County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992
Energy	0.0564	0.4840	0.2170	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	2,370.2439	2,370.2439	0.0855	0.0257	2,380.0446
Mobile	2.2768	16.3952	18.6042	0.0808	5.4037	0.0454	5.4492	1.4476	0.0423	1.4899	0.0000	7,525.0292	7,525.0292	0.4809	0.0000	7,537.0511
Waste						0.0000	0.0000		0.0000	0.0000	27.9950	0.0000	27.9950	1.6545	0.0000	69.3564
Water						0.0000	0.0000		0.0000	0.0000	15.1642	322.4449	337.6091	1.5708	0.0395	388.6597
Total	6.1188	17.0739	25.4530	0.0850	5.4037	0.1305	5.5342	1.4476	0.1273	1.5749	43.1592	10,366.1398	10,409.2990	3.8047	0.0678	10,524.6110

	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	7.53	17.06	35.76	46.82	55.82	24.80	55.38	55.82	23.97	54.27	67.04	41.02	41.21	59.31	14.67	41.41

Palomar Crossing - Riverside-South Coast County, Annual

2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	92.0400
Total	92.0400

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	4/1/2019	5/10/2019	5	30	
2	Grading	Grading	5/11/2019	8/23/2019	5	75	
3	Building Construction	Building Construction	8/24/2019	6/24/2022	5	740	
4	Paving	Paving	6/25/2022	9/9/2022	5	55	
5	Architectural Coating	Architectural Coating	9/10/2022	11/25/2022	5	55	

Acres of Grading (Site Preparation Phase): 21.5**Acres of Grading (Grading Phase): 187.5****Acres of Paving: 19.69**

Palomar Crossing - Riverside-South Coast County, Annual

Residential Indoor: 1,289,925; Residential Outdoor: 429,975; Non-Residential Indoor: 369,468; Non-Residential Outdoor: 123,156; Striped Parking Area: 51,472 (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	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	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	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Palomar Crossing - Riverside-South Coast County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	898.00	249.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	180.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2824	0.0000	0.2824	0.1502	0.0000	0.1502	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.6836	0.3310	5.7000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584
Total	0.0650	0.6836	0.3310	5.7000e-004	0.2824	0.0359	0.3183	0.1502	0.0330	0.1832	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584

Palomar Crossing - Riverside-South Coast County, Annual

3.2 Site Preparation - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657
Total	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657

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					0.1101	0.0000	0.1101	0.0586	0.0000	0.0586	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.6836	0.3309	5.7000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584
Total	0.0650	0.6836	0.3309	5.7000e-004	0.1101	0.0359	0.1460	0.0586	0.0330	0.0916	0.0000	51.2530	51.2530	0.0162	0.0000	51.6584

Palomar Crossing - Riverside-South Coast County, Annual

3.2 Site Preparation - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657
Total	1.3400e-003	9.8000e-004	0.0102	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5639	2.5639	7.0000e-005	0.0000	2.5657

3.3 Grading - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1777	2.0445	1.2516	2.3300e-003		0.0894	0.0894		0.0822	0.0822	0.0000	208.8800	208.8800	0.0661	0.0000	210.5321
Total	0.1777	2.0445	1.2516	2.3300e-003	0.3253	0.0894	0.4146	0.1349	0.0822	0.2171	0.0000	208.8800	208.8800	0.0661	0.0000	210.5321

Palomar Crossing - Riverside-South Coast County, Annual

3.3 Grading - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269
Total	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269

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					0.1269	0.0000	0.1269	0.0526	0.0000	0.0526	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1777	2.0445	1.2516	2.3300e-003		0.0894	0.0894		0.0822	0.0822	0.0000	208.8797	208.8797	0.0661	0.0000	210.5319
Total	0.1777	2.0445	1.2516	2.3300e-003	0.1269	0.0894	0.2162	0.0526	0.0822	0.1348	0.0000	208.8797	208.8797	0.0661	0.0000	210.5319

Palomar Crossing - Riverside-South Coast County, Annual

3.3 Grading - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269
Total	3.7300e-003	2.7100e-003	0.0285	8.0000e-005	8.2400e-003	5.0000e-005	8.3000e-003	2.1900e-003	5.0000e-005	2.2400e-003	0.0000	7.1221	7.1221	1.9000e-004	0.0000	7.1269

3.4 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1086	0.9696	0.7895	1.2400e-003		0.0593	0.0593		0.0558	0.0558	0.0000	108.1479	108.1479	0.0264	0.0000	108.8066
Total	0.1086	0.9696	0.7895	1.2400e-003		0.0593	0.0593		0.0558	0.0558	0.0000	108.1479	108.1479	0.0264	0.0000	108.8066

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0388	1.3218	0.2631	2.9700e-003	0.0724	9.9600e-003	0.0823	0.0209	9.5200e-003	0.0304	0.0000	283.6193	283.6193	0.0242	0.0000	284.2234
Worker	0.2052	0.1494	1.5674	4.3400e-003	0.4540	2.8500e-003	0.4569	0.1206	2.6300e-003	0.1232	0.0000	392.2641	392.2641	0.0107	0.0000	392.5324
Total	0.2440	1.4713	1.8305	7.3100e-003	0.5264	0.0128	0.5392	0.1414	0.0122	0.1536	0.0000	675.8834	675.8834	0.0349	0.0000	676.7559

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	0.1086	0.9696	0.7895	1.2400e-003		0.0593	0.0593		0.0558	0.0558	0.0000	108.1478	108.1478	0.0264	0.0000	108.8065
Total	0.1086	0.9696	0.7895	1.2400e-003		0.0593	0.0593		0.0558	0.0558	0.0000	108.1478	108.1478	0.0264	0.0000	108.8065

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0388	1.3218	0.2631	2.9700e-003	0.0724	9.9600e-003	0.0823	0.0209	9.5200e-003	0.0304	0.0000	283.6193	283.6193	0.0242	0.0000	284.2234
Worker	0.2052	0.1494	1.5674	4.3400e-003	0.4540	2.8500e-003	0.4569	0.1206	2.6300e-003	0.1232	0.0000	392.2641	392.2641	0.0107	0.0000	392.5324
Total	0.2440	1.4713	1.8305	7.3100e-003	0.5264	0.0128	0.5392	0.1414	0.0122	0.1536	0.0000	675.8834	675.8834	0.0349	0.0000	676.7559

3.4 Building Construction - 2020**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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2020**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	0.0927	3.3927	0.6637	8.3900e-003	0.2060	0.0192	0.2252	0.0594	0.0184	0.0778	0.0000	802.0610	802.0610	0.0641	0.0000	803.6639
Worker	0.5407	0.3788	4.0450	0.0120	1.2930	7.9600e-003	1.3010	0.3433	7.3300e-003	0.3507	0.0000	1,081.7902	1,081.7902	0.0271	0.0000	1,082.4674
Total	0.6333	3.7716	4.7087	0.0204	1.4990	0.0271	1.5262	0.4028	0.0257	0.4285	0.0000	1,883.8512	1,883.8512	0.0912	0.0000	1,886.1312

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2020**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	0.0927	3.3927	0.6637	8.3900e-003	0.2060	0.0192	0.2252	0.0594	0.0184	0.0778	0.0000	802.0610	802.0610	0.0641	0.0000	803.6639
Worker	0.5407	0.3788	4.0450	0.0120	1.2930	7.9600e-003	1.3010	0.3433	7.3300e-003	0.3507	0.0000	1,081.7902	1,081.7902	0.0271	0.0000	1,082.4674
Total	0.6333	3.7716	4.7087	0.0204	1.4990	0.0271	1.5262	0.4028	0.0257	0.4285	0.0000	1,883.8512	1,883.8512	0.0912	0.0000	1,886.1312

3.4 Building Construction - 2021**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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2021**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	0.0775	3.0299	0.5829	8.2900e-003	0.2052	5.7900e-003	0.2110	0.0592	5.5400e-003	0.0648	0.0000	792.7787	792.7787	0.0605	0.0000	794.2906
Worker	0.5024	0.3386	3.6892	0.0115	1.2881	7.7200e-003	1.2958	0.3420	7.1100e-003	0.3491	0.0000	1,041.6302	1,041.6302	0.0243	0.0000	1,042.2368
Total	0.5800	3.3685	4.2721	0.0198	1.4933	0.0135	1.5068	0.4012	0.0127	0.4139	0.0000	1,834.4089	1,834.4089	0.0847	0.0000	1,836.5274

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095

Palomar Crossing - Riverside-South Coast County, Annual

3.4 Building Construction - 2021**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	0.0775	3.0299	0.5829	8.2900e-003	0.2052	5.7900e-003	0.2110	0.0592	5.5400e-003	0.0648	0.0000	792.7787	792.7787	0.0605	0.0000	794.2906
Worker	0.5024	0.3386	3.6892	0.0115	1.2881	7.7200e-003	1.2958	0.3420	7.1100e-003	0.3491	0.0000	1,041.6302	1,041.6302	0.0243	0.0000	1,042.2368
Total	0.5800	3.3685	4.2721	0.0198	1.4933	0.0135	1.5068	0.4012	0.0127	0.4139	0.0000	1,834.4089	1,834.4089	0.0847	0.0000	1,836.5274

3.4 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	0.1066	0.9760	1.0227	1.6800e-003		0.0506	0.0506		0.0476	0.0476	0.0000	144.8283	144.8283	0.0347	0.0000	145.6957
Total	0.1066	0.9760	1.0227	1.6800e-003		0.0506	0.0506		0.0476	0.0476	0.0000	144.8283	144.8283	0.0347	0.0000	145.6957

Palomar Crossing - Riverside-South Coast County, Annual

3.4 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	0.0346	1.3671	0.2600	3.9300e-003	0.0983	2.3300e-003	0.1006	0.0284	2.2300e-003	0.0306	0.0000	376.4173	376.4173	0.0274	0.0000	377.1033
Worker	0.2255	0.1459	1.6276	5.3100e-003	0.6169	3.6000e-003	0.6205	0.1638	3.3100e-003	0.1671	0.0000	480.6607	480.6607	0.0104	0.0000	480.9219
Total	0.2601	1.5130	1.8877	9.2400e-003	0.7152	5.9300e-003	0.7211	0.1922	5.5400e-003	0.1977	0.0000	857.0780	857.0780	0.0379	0.0000	858.0251

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	0.1066	0.9760	1.0227	1.6800e-003		0.0506	0.0506		0.0476	0.0476	0.0000	144.8281	144.8281	0.0347	0.0000	145.6955
Total	0.1066	0.9760	1.0227	1.6800e-003		0.0506	0.0506		0.0476	0.0476	0.0000	144.8281	144.8281	0.0347	0.0000	145.6955

Palomar Crossing - Riverside-South Coast County, Annual

3.4 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	0.0346	1.3671	0.2600	3.9300e-003	0.0983	2.3300e-003	0.1006	0.0284	2.2300e-003	0.0306	0.0000	376.4173	376.4173	0.0274	0.0000	377.1033
Worker	0.2255	0.1459	1.6276	5.3100e-003	0.6169	3.6000e-003	0.6205	0.1638	3.3100e-003	0.1671	0.0000	480.6607	480.6607	0.0104	0.0000	480.9219
Total	0.2601	1.5130	1.8877	9.2400e-003	0.7152	5.9300e-003	0.7211	0.1922	5.5400e-003	0.1977	0.0000	857.0780	857.0780	0.0379	0.0000	858.0251

3.5 Paving - 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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0758	55.0758	0.0178	0.0000	55.5211
Paving	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0476	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0758	55.0758	0.0178	0.0000	55.5211

Palomar Crossing - Riverside-South Coast County, Annual

3.5 Paving - 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	0.0000	0.0000	0.0000	0.0000	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	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346
Total	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346

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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0757	55.0757	0.0178	0.0000	55.5210
Paving	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0476	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0757	55.0757	0.0178	0.0000	55.5210

Palomar Crossing - Riverside-South Coast County, Annual

3.5 Paving - 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	0.0000	0.0000	0.0000	0.0000	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	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346
Total	1.6600e-003	1.0700e-003	0.0120	4.0000e-005	4.5300e-003	3.0000e-005	4.5600e-003	1.2000e-003	2.0000e-005	1.2300e-003	0.0000	3.5327	3.5327	8.0000e-005	0.0000	3.5346

3.6 Architectural Coating - 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					
Archit. Coating	0.6320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6200e-003	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0215	7.0215	4.6000e-004	0.0000	7.0329
Total	0.6377	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0215	7.0215	4.6000e-004	0.0000	7.0329

Palomar Crossing - Riverside-South Coast County, Annual

3.6 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0199	0.0129	0.1436	4.7000e-004	0.0544	3.2000e-004	0.0547	0.0145	2.9000e-004	0.0147	0.0000	42.3924	42.3924	9.2000e-004	0.0000	42.4154
Total	0.0199	0.0129	0.1436	4.7000e-004	0.0544	3.2000e-004	0.0547	0.0145	2.9000e-004	0.0147	0.0000	42.3924	42.3924	9.2000e-004	0.0000	42.4154

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	0.6320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6200e-003	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0214	7.0214	4.6000e-004	0.0000	7.0329
Total	0.6377	0.0387	0.0499	8.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	7.0214	7.0214	4.6000e-004	0.0000	7.0329

Palomar Crossing - Riverside-South Coast County, Annual

3.6 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0199	0.0129	0.1436	4.7000e-004	0.0544	3.2000e-004	0.0547	0.0145	2.9000e-004	0.0147	0.0000	42.3924	42.3924	9.2000e-004	0.0000	42.4154
Total	0.0199	0.0129	0.1436	4.7000e-004	0.0544	3.2000e-004	0.0547	0.0145	2.9000e-004	0.0147	0.0000	42.3924	42.3924	9.2000e-004	0.0000	42.4154

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

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Palomar Crossing - Riverside-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2768	16.3952	18.6042	0.0808	5.4037	0.0454	5.4492	1.4476	0.0423	1.4899	0.0000	7,525.029 2	7,525.029 2	0.4809	0.0000	7,537.0511
Unmitigated	2.7753	19.9063	32.7740	0.1556	12.2300	0.0885	12.3185	3.2763	0.0825	3.3587	0.0000	14,446.43 35	14,446.43 35	0.6613	0.0000	14,462.96 65

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	4,497.22	4,497.22	4,497.22	15,622,425	6,902,667
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	6,852.34	6,852.34	6,852.34	16,413,874	7,252,363
Total	11,349.56	11,349.56	11,349.56	32,036,299	14,155,030

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 Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	87	13	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	59.5	40.5	0

4.4 Fleet Mix

Palomar Crossing - Riverside-South Coast County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Other Non-Asphalt Surfaces	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Parking Lot	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Regional Shopping Center	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	1,811.6439	1,811.6439	0.0748	0.0155	1,818.1251
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,041.7454	2,041.7454	0.0843	0.0174	2,049.0498
NaturalGas Mitigated	0.0564	0.4840	0.2170	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	558.6000	558.6000	0.0107	0.0102	561.9195
NaturalGas Unmitigated	0.0564	0.4840	0.2170	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	558.6000	558.6000	0.0107	0.0102	561.9195

Palomar Crossing - Riverside-South Coast County, Annual

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	9.92096e+006	0.0535	0.4571	0.1945	2.9200e-003		0.0370	0.0370		0.0370	0.0370	0.0000	529.4200	529.4200	0.0102	9.7100e-003	532.5661
Other Non-Asphalt Surfaces	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
Regional Shopping Center	546813	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	29.1800	29.1800	5.6000e-004	5.3000e-004	29.3534
Total		0.0565	0.4839	0.2171	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	558.6000	558.6000	0.0107	0.0102	561.9195

Palomar Crossing - Riverside-South Coast County, Annual

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	9.92096e+006	0.0535	0.4571	0.1945	2.9200e-003		0.0370	0.0370		0.0370	0.0370	0.0000	529.4200	529.4200	0.0102	9.7100e-003	532.5661
Other Non-Asphalt Surfaces	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
Regional Shopping Center	546813	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	29.1800	29.1800	5.6000e-004	5.3000e-004	29.3534
Total		0.0565	0.4839	0.2171	3.0800e-003		0.0390	0.0390		0.0390	0.0390	0.0000	558.6000	558.6000	0.0107	0.0102	561.9195

Palomar Crossing - Riverside-South Coast County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.09599e+006	986.4474	0.0407	8.4300e-003	989.9764
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	201154	64.0921	2.6500e-003	5.5000e-004	64.3214
Regional Shopping Center	3.11092e+006	991.2059	0.0409	8.4700e-003	994.7520
Total		2,041.7454	0.0843	0.0175	2,049.0498

Palomar Crossing - Riverside-South Coast County, Annual

5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.8716e+006	914.9544	0.0378	7.8200e-003	918.2277
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	140808	44.8645	1.8500e-003	3.8000e-004	45.0250
Regional Shopping Center	2.67347e+006	851.8250	0.0352	7.2800e-003	854.8724
Total		1,811.6439	0.0748	0.0155	1,818.1251

6.0 Area Detail**6.1 Mitigation Measures Area**

Palomar Crossing - Riverside-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992
Unmitigated	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992

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	0.3254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2473					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0139	0.1189	0.0506	7.6000e-004		9.6100e-003	9.6100e-003		9.6100e-003	9.6100e-003	0.0000	137.6706	137.6706	2.6400e-003	2.5200e-003	138.4887
Landscaping	0.1989	0.0758	6.5812	3.5000e-004		0.0364	0.0364		0.0364	0.0364	0.0000	10.7512	10.7512	0.0104	0.0000	11.0105
Total	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992

Palomar Crossing - Riverside-South Coast County, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2473					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0139	0.1189	0.0506	7.6000e-004		9.6100e-003	9.6100e-003		9.6100e-003	9.6100e-003	0.0000	137.6706	137.6706	2.6400e-003	2.5200e-003	138.4887
Landscaping	0.1989	0.0758	6.5812	3.5000e-004		0.0364	0.0364		0.0364	0.0364	0.0000	10.7512	10.7512	0.0104	0.0000	11.0105
Total	3.7855	0.1947	6.6318	1.1100e-003		0.0460	0.0460		0.0460	0.0460	0.0000	148.4218	148.4218	0.0130	2.5200e-003	149.4992

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

Palomar Crossing - Riverside-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	337.6091	1.5708	0.0395	388.6597
Unmitigated	399.0407	1.9626	0.0492	462.7718

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	41.5031 / 26.165	277.9750	1.3633	0.0342	322.2477
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	18.2448 / 11.1823	121.0658	0.5993	0.0150	140.5241
Total		399.0407	1.9626	0.0492	462.7718

Palomar Crossing - Riverside-South Coast County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	33.2025 / 24.5689	235.2543	1.0912	0.0275	270.7186
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	14.5958 / 10.5002	102.3548	0.4796	0.0121	117.9411
Total		337.6091	1.5708	0.0395	388.6597

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

Palomar Crossing - Riverside-South Coast County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.9950	1.6545	0.0000	69.3564
Unmitigated	111.9800	6.6178	0.0000	277.4256

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	293.02	59.4804	3.5152	0.0000	147.3602
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	258.63	52.4996	3.1026	0.0000	130.0654
Total		111.9800	6.6178	0.0000	277.4256

Palomar Crossing - Riverside-South Coast County, Annual

8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	73.255	14.8701	0.8788	0.0000	36.8401
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	64.6575	13.1249	0.7757	0.0000	32.5164
Total		27.9950	1.6545	0.0000	69.3564

9.0 Operational Offroad

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

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Palomar Crossing - Riverside-South Coast County, Annual

Equipment Type	Number
----------------	--------

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	92.0400	0.0000	0.0000	92.0400

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	130	92.0400	0.0000	0.0000	92.0400
Total		92.0400	0.0000	0.0000	92.0400

Appendix B

EMFAC2014 Vehicle Consumption Data

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Air District

Region: South Coast AQMD

Calendar Year: 2020

Season: Annual

Vehicle Classification: EMFAC2007 Categories

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

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel Split (Gas:Diesel)	MPG, by Fuel Type	MPG, Average
South Coast AQMD	2020	LDA	Aggregated	Aggregated	GAS	6241441.311	215630250.8	7791.379047	99.26%	27.68	28.57
South Coast AQMD	2020	LDA	Aggregated	Aggregated	DSL	58578.66528	2170199.073	58.44052993	0.74%	37.14	
South Coast AQMD	2020	LDA	Aggregated	Aggregated	ELEC	139480.2104	6499653.924	0			
South Coast AQMD	2020	LDT1	Aggregated	Aggregated	GAS	529468.9231	17839921.58	767.6565063	99.91%	23.24	23.26
South Coast AQMD	2020	LDT1	Aggregated	Aggregated	DSL	653.8523923	17424.66748	0.656771586	0.09%	26.53	
South Coast AQMD	2020	LDT1	Aggregated	Aggregated	ELEC	394.8926991	12300.5894	0			
South Coast AQMD	2020	LDT2	Aggregated	Aggregated	GAS	2196840.435	81691950.79	3942.87661	99.86%	20.72	20.73
South Coast AQMD	2020	LDT2	Aggregated	Aggregated	DSL	3707.582469	150823.0049	5.330165365	0.14%	28.30	
South Coast AQMD	2020	MDV	Aggregated	Aggregated	GAS	1480427.171	49182321.35	3206.973029	98.75%	15.34	15.42
South Coast AQMD	2020	MDV	Aggregated	Aggregated	DSL	22607.57726	887377.5364	40.62845112	1.25%	21.84	
South Coast AQMD	2020	LHDT1	Aggregated	Aggregated	GAS	122811.721	3538562.329	324.3272067	66.50%	10.91	14.08
South Coast AQMD	2020	LHDT1	Aggregated	Aggregated	DSL	93218.10849	3329186.678	163.383972	33.50%	20.38	
South Coast AQMD	2020	LHDT2	Aggregated	Aggregated	GAS	25139.08857	867472.8869	85.31303659	51.00%	10.17	14.35
South Coast AQMD	2020	LHDT2	Aggregated	Aggregated	DSL	39016.92297	1532624.982	81.98131358	49.00%	18.69	
South Coast AQMD	2020	MHDT	Aggregated	Aggregated	GAS	19760.80313	980184.6784	139.5109867	14.03%	7.03	8.50
South Coast AQMD	2020	MHDT	Aggregated	Aggregated	DSL	134726.0007	7469482.082	854.6440674	85.97%	8.74	
South Coast AQMD	2020	HHDT	Aggregated	Aggregated	GAS	802.1440496	104174.0551	22.12472978	0.97%	4.71	5.85
South Coast AQMD	2020	HHDT	Aggregated	Aggregated	DSL	94066.79161	13265170	2263.379935	99.03%	5.86	
South Coast AQMD	2020	OBUS	Aggregated	Aggregated	GAS	8436.227028	392438.6707	54.40171127	47.32%	7.21	7.25
South Coast AQMD	2020	OBUS	Aggregated	Aggregated	DSL	5358.43226	441411.1364	60.5737995	52.68%	7.29	
South Coast AQMD	2020	UBUS	Aggregated	Aggregated	GAS	2327.880438	267944.8976	53.57098395	32.69%	5.00	4.86
South Coast AQMD	2020	UBUS	Aggregated	Aggregated	DSL	4588.150023	527953.961	110.2967884	67.31%	4.79	
South Coast AQMD	2020	SBUS	Aggregated	Aggregated	GAS	2258.46776	86380.44602	7.601539992	21.33%	11.36	8.10
South Coast AQMD	2020	SBUS	Aggregated	Aggregated	DSL	5309.122191	202336.044	28.02826434	78.67%	7.22	
South Coast AQMD	2020	MCY	Aggregated	Aggregated	GAS	289961.5795	1955845.416	55.31831514	100.00%	35.36	35.36
South Coast AQMD	2020	MH	Aggregated	Aggregated	GAS	37922.10127	307217.3044	41.47456076	83.45%	7.41	7.88
South Coast AQMD	2020	MH	Aggregated	Aggregated	DSL	9968.340503	84286.45216	8.223037177	16.55%	10.25	