

Appendix E

Energy Technical Report

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COSTCO COMMERCIAL CENTER ENERGY TECHNICAL REPORT FRESNO, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

| Acronym | Definition |
|-------------------|--|
| AB | Assembly Bill |
| ACC | Advanced Clean Cars |
| AEI | annual emissions inventory |
| ATC | Authority to Construct |
| ATCM | Airborne Toxic Control Measure |
| CalEEMod® | California Emissions Estimator Model® |
| CalGreen | California Green Building Standards Code |
| CARB | California Air Resources Board |
| CCR | California Code of Regulations |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| COG | Council of Governments |
| CO ₂ | carbon dioxide |
| CO ₂ e | carbon dioxide equivalent |
| CPUC | California Public Utilities Commission |
| CUP | conditional use permit |
| CY | cubic yard |
| CVRP | Clean Vehicle Rebate Project |
| DOT | U.S. Department of Transportation |
| EIR | Environmental Impact Report |
| EPA | U.S. Environmental Protection Agency |
| EV | Electric vehicle |
| GHG | greenhouse gas |
| GHS | grid harmonization strategies |
| GWh | gigawatt hours |
| hp | horsepower |
| HOV | high-occupancy vehicle |
| HVAC | Heating, Ventilation and Air Conditioning |
| IEPR | Integrated Energy Policy Report |
| ISTEA | Intermodal Surface Transportation Efficiency Act |
| kWh | kilowatt hours |
| LCFS | Low Carbon Fuel Standard |
| LEED | Leadership in Energy and Environmental Design |
| LLC | Limited Liability Company |
| LPG | liquefied petroleum gas |
| MCY | million cubic yards |
| mpg | miles per gallon |
| MPO | Metropolitan Planning Organization |
| MSW | municipal solid waste |
| MWh | megawatt hours |
| NEMA | National Electric Manufacturers Association |
| NHTSA | National Highway Traffic Safety Administration |

ACRONYMS AND ABBREVIATIONS (*CONTINUED*)

| Acronym | Definition |
|-----------------|---|
| NO _x | oxides of nitrogen |
| MM | Mitigation measure |
| PG&E | Pacific Gas and Electric Company |
| PM | particulate matter |
| RCRA | Resource Conservation and Recovery Act |
| RPS | Renewables Portfolio Standard |
| RTPs | regional transportation plans |
| SAFE | Safer Affordable Fuel-Efficient |
| SB | Senate Bill |
| SCE | Southern California Edison |
| SCS | Sustainable Communities Strategy |
| SDG&E | San Diego Gas & Electric |
| SUVs | sport utility vehicles |
| TDV | time dependent valuation |
| TEA | Transportation Efficiency Act |
| tpd | tons per day |
| VDECS | Verified Diesel Emission Control Strategies |
| VMT | vehicle miles travelled |
| VW | Volkswagen |
| ZEV | zero emission vehicle |
| ZNE | zero net energy |

1. INTRODUCTION

Ramboll US Consulting, Inc. (Ramboll) was retained to prepare an Energy Technical Report for the proposed Costco Commercial Center (Project).

This Energy Technical Report analyzes the Project's energy impacts from construction and operations. In particular, this report describes the existing setting of the Project site, describes the relevant regulatory background, discusses the methodology used to evaluate energy impacts related to the Project, and evaluates potential impacts related to energy that would be affected as a result of implementation of the Project.

1.1 Existing Conditions

The existing 22.4-acre site is currently undeveloped, located within the Bullard Community Plan Area, and designated by both the General Plan and zoning as Community Commercial. The location of the site is in Fresno, California at West Herndon Avenue and North Riverside Drive.

1.2 Project Analysis

The Costco Wholesale Corporation (Costco) proposes to construct the Costco Commercial Center, which comprises a new Costco facility (including loading docks and internal space to provide last-mile home delivery of big and bulky items) with an attached tire center and a detached gas station and drive-through car wash in the City of Fresno.

The project would develop a new Costco retail building; gas station; car wash; and associated parking areas, driveways, and other supporting infrastructure. Costco Wholesale is proposing to construct a wholesale retail facility with approximately 178,000 square feet (sq. ft.); of which approximately 57,000 sq. ft. would be reserved for storage and receiving at the northeast corner of W. Herndon Ave. and N. Riverside Dr (APN 50302012). The project involves the construction of a Costco retail facility that includes an attached tire center, as well as a detached gas station and a drive-through car wash. The project would include a Costco members-only gas station on the northern portion of the project site adjacent to West Spruce Avenue. The gas dispensing facility would include an approximately 11,500 square-foot canopy and a 125 square-foot controller enclosure. There would be four covered fueling islands, each with four two-sided fuel dispensers to provide for the fueling of eight cars at each island, for a total of 32 fueling positions. A Costco members-only automated carwash would be located at the northeastern corner of the project site, adjacent to the gas station. The car wash structure would be approximately 4,800 sq. ft. The project would have its main access points along North Riverside Drive and include approximately 889 parking stalls. The project is requesting conditional use permits for Large-Format Retail and alcohol sales, as well as a General Plan Amendment to reclassify the portion of W. Herndon Ave. fronting the project site from Expressway to Superarterial.

2. ENERGY ENVIRONMENTAL AND REGULATORY OVERVIEW

2.1 General Setting

2.1.1 Energy Production and Distribution

Among the states, California ranks seventh in the nation in production of crude oil, 14th in production of natural gas, second in generation of hydroelectric power, and first as a producer of electricity from biomass, geothermal, and solar energy.¹ California produces approximately 10% of the natural gas used in the state; approximately 90% of the natural gas used in California is imported from Canada, the Southwest, and the Rocky Mountains region of the United States. Over half of the crude oil refined in California is from foreign countries, including Saudi Arabia, Iraq, Ecuador, and Colombia. Additional crude oil is imported from Alaska. Over one-fourth of California's electricity is from out-of-state locations in the Pacific Northwest and the Southwest.²

Electricity Supply

The production of electricity requires the combustion, consumption, or conversion of other energy resources, including water, wind, oil, natural gas, coal, solar, geothermal, and nuclear. Of the electricity that is generated within the state in 2020, 48.4% is generated by natural gas-fired power plants, 15.4% by solar, 11.2% by hydroelectric, 8.5% by nuclear power plants, 7.2% by wind, and a remaining 9.3% by other renewables.³

For Fresno County, Pacific Gas and Electric Company (PG&E) is the primary supplier of electricity to businesses and residents of the area. PG&E's 70,000-square-mile service area covers both Northern and Central California. By the end of 2020, about 30.6 percent of the energy delivered to PG&E's customers came from eligible renewable energy-related projects.⁴

Transportation Fuels Supply

Most petroleum fuel refined in California is for use in on-road motor vehicles and is refined within California to meet state-specific formulations required by the California Air Resources Board (CARB). The major categories of petroleum fuels are gasoline and diesel for passenger vehicles, transit, and rail vehicles; and fuel oil for industry and emergency electrical power generation. Other liquid fuels include kerosene, jet fuel, and residual fuel oil for marine vessels.

California's oil fields make it the third-largest petroleum-producing state in the United States, behind Texas and North Dakota (federal offshore production is the biggest producer

¹ U.S. Energy Information Administration. 2021. California State Profile and Energy Estimates: Profile Overview. Available online at: <http://www.eia.gov/state/?sid=CA>. Accessed: January 2022.

² U.S. Energy Information Administration. 2021. California State Profile and Energy Estimates: Profile Analysis. Available online at: <https://www.eia.gov/state/analysis.cfm?sid=CA>. Accessed: January 2022.

³ California Energy Commission. 2020. 2020 Total System Electric Generation in Gigawatt Hours. Available online at: <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation>. Accessed: January 2022.

⁴ Pacific Gas and Electric Company. 2021. Corporate Responsibility and Sustainability Report 2021. Executive Summary. Available online at: https://www.pgecorp.com/corp_responsibility/reports/2021/assets/PGE_CRSR_2021_Executive_Summary.pdf. Accessed: January 2022.

in the United States). Crude oil is moved from area to area within California through a network of pipelines that carry it from both onshore and offshore oil wells to the refineries that are located in the San Francisco Bay Area, the Los Angeles area, and the Central Valley. Currently, 14 petroleum refineries operate in California, processing approximately 1.8 million barrels per day of crude oil.⁵

Other transportation fuel sources are alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70% alcohol), natural gas (compressed or liquefied), liquefied petroleum gas (LPG), hydrogen, and fuels derived from biological materials (i.e., biomass).

2.1.2 Energy Consumption

Electricity Consumption

Californians consumed 279,510 gigawatt hours (GWh) of electricity in 2020.⁶ Of this total, Fresno County consumed 8,018 GWh.⁷

Transportation Sector Fuels Consumption

The transportation sector is a major end use of energy in California, accounting for approximately 39.3% of total state-wide energy consumption in 2019, the most recent year for which data is available.⁸ In addition, energy is consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. California's 28.4 million vehicles consume more than 12.9 billion gallons of gasoline and more than 3 billion gallons of diesel each year.⁹ In Fresno County, about 313 million gallons of gasoline and 131 million gallons of diesel are consumed each year by approximately 708,000 vehicles.¹⁰

⁵ U.S. Energy Information Administration. 2021. Petroleum & Other Liquids. Number and Capacity of Petroleum Refineries. Available online at: https://www.eia.gov/dnav/pet/PET_PNP_CAP1_DCU_SCA_A.htm. Accessed: January 2022.

⁶ A watt hour is a unit of energy equivalent to one watt of power expended for one hour. For example, a typical light bulb is 60 watts, meaning that if it is left on for one hour, 60-watt hours have been used. One kilowatt equals 1,000 watts. The consumption of electrical energy by homes and businesses is usually measured in kilowatt hours (kWh). Some large businesses and institutions also use megawatt hours (MWh), where one MWh equals 1,000 kWh. One gigawatt equals one thousand (1,000) megawatts, or one million (1,000,000) kilowatts. The energy output of large power plants over long periods of time, or the energy consumption of jurisdictions, can be expressed in gigawatt hours (GWh).

⁷ Electricity data for Fresno County and the State of California in 2020 are obtained from the California Energy Commission, electricity consumption by county. Available at: <https://ecdms.energy.ca.gov/electricitycounty.aspx>. Accessed: January 2022.

⁸ U.S. Energy Information Administration. 2020. California State Profile and Energy Estimates: California Energy Consumption by End-Use Sector, 2019. Available online at: <http://www.eia.gov/state/?sid=CA#tabs-2>. Accessed: January 2022.

⁹ CARB. EMFAC2021. Emissions Inventory - State-wide for Calendar Year 2020. Available online at: <https://arb.ca.gov/emfac/>. Accessed: January 2022.

¹⁰ CARB. EMFAC2021. Emissions Inventory - Fresno County for Calendar Year 2020. Available online at: <https://arb.ca.gov/emfac/>. Accessed: February 2022.

2.2 Regulatory Overview

2.2.1 Federal Programs

2.2.1.1 Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the oil crisis of 1973, which increased oil prices due to a shortage of reserves. The Act requires that all vehicles sold in the U.S. meet certain fuel economy goals, known as the Corporate Average Fuel Economy standards. The National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation (DOT) administers the Corporate Average Fuel Economy program, and the U.S. Environmental Protection Agency (EPA) provides the fuel economy data.

In April 2010, the EPA and NHTSA issued a final rulemaking establishing new federal fuel economy standards for model years 2012 to 2016 passenger cars and light-duty trucks. For model year 2012, the fuel economy standards for passenger cars, light trucks, and combined cars and trucks were 33.3 miles per gallon (mpg), 25.4 mpg, and 29.7 mpg, respectively.¹¹ These standards increase progressively up to 37.8 mpg, 28.8 mpg, and 34.1, respectively, for model year 2016. In subsequent rulemakings, the agencies extended the national program of fuel economy standards to passenger vehicles and light-duty trucks of model years 2017-2025, culminating in fuel economy of 54.5 mpg by model year 2025,¹² as well as to medium- and heavy-duty vehicles of model years 2014-2018, including large pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses.¹³

In August 2016, the EPA and NHTSA adopted the next phase (Phase 2) of the fuel economy and GHG standards for medium- and heavy-duty trucks, which apply to vehicles with model year 2018 and later.¹⁴ In response to the EPA's adoption of the Phase 2 standards, CARB staff brought a proposed California Phase 2 program before its Board in 2017; and the Board approved the program in March 2018.¹⁵

In 2018, the EPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy standards for passenger cars and light trucks and establish new standards, covering model years 2021-2026. Compared to maintaining the post-2020 standards now in place, the proposal would increase U.S. fuel consumption.¹⁶

¹¹ United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2010. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*. Final Rule. 75 Fed. Reg. 25324-25728.

¹² United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2012. *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*; Final Rule. 77 Fed. Reg. 62623.

¹³ United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2011. *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles*. 76 Fed. Reg. 57106.

¹⁴ USEPA. Available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency>. Accessed: January 2022.

¹⁵ CARB. CA Phase 2 GHG webpage: <https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase2>. Accessed: January 2022.

¹⁶ Federal Register. 2018. *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*. Available at: <https://www.federalregister.gov/documents/2018/08/24/2018-16820/the-safer-affordable-fuel-efficient-safe-vehicles-rule-for-model-years-2021-2026-passenger-cars-and>. Accessed: January 2022.

In 2019, the EPA and NHTSA announced the One National Program Rule, which allows the federal government to set the standard for uniform fuel economy and greenhouse gas emissions of automobiles and light duty trucks. This rule pre-empts state and local programs from setting the national standard, which includes California's GHG and ZEV programs.¹⁷

In December 2021, EPA finalized revised national greenhouse gas emissions standards for passenger cars and light trucks for Model Years 2023-2026.¹⁸

2.2.1.2 Energy Policy Act of 2005 and Energy Independence and Security Act of 2007

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Energy Policy Act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products. Because driving fuel-efficient vehicles and installing energy-efficient appliances can provide many benefits, such as lower energy bills, increased indoor comfort, and reduced air pollution, businesses are eligible for tax credits for buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are given for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

The Energy Policy Act of 2005 also established the first renewable fuel volume mandate in the United States. The original Renewable Fuel Standard program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act of 2007, the Renewable Fuel Standard program was expanded to include diesel and to increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.

2.2.1.3 American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act of 2009 was passed in response to the economic crisis of the late 2000s, with the primary purpose of maintaining existing jobs and creating new jobs. Among the secondary objectives of the American Recovery and Reinvestment Act was investment in "green" energy programs, including funding the following through grants, loans, or other mechanisms: private companies developing renewable energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high efficiency or electric vehicles.¹⁹

2.2.1.4 Intermodal Surface Transportation Efficiency Act

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promotes the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. The Intermodal Surface Transportation Efficiency Act contains factors that metropolitan planning organizations (MPO), such as the

¹⁷ EPA. 2019. *Trump Administration Announces One National Program Rule on Federal Preemption of State Fuel Economy Standards*. Available at: <https://www.epa.gov/newsreleases/trump-administration-announces-one-national-program-rule-federal-preemption-state-fuel>. Accessed: January 2022.

¹⁸ United States Environmental Protection Agency. 2021. *Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks*. Available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-passenger-cars-and>. Accessed: January 2022.

¹⁹ United States Environmental Protection Agency (EPA). 2009. *Recovery: EPA Gets Involved*. Available at: <https://archive.epa.gov/recovery/web/html/>. Accessed: January 2022.

Kern Council of Governments (Kern COG), are to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs have adopted explicit policies defining the social, economic, energy, and environmental values that guide transportation decisions in their respective metropolitan areas. The planning process for specific projects would then address these policies. Another requirement of the ISTEA is to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption is expected to be a decision criterion, along with cost and other values to determine the best transportation solution.

2.2.1.5 Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century ("TEA-21") was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

2.2.2 State Programs

2.2.2.1 AB 32 and SB 32 (State-wide GHG Reductions with Energy Co-Benefits)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006.²⁰ The law instructed CARB to develop and enforce regulations for the reporting and verification of state-wide GHG emissions. The bulk of GHG emissions in California are carbon dioxide that result from fossil fuel consumption. Therefore, a reduction in GHG emissions typically translates into reduced fuel and increased energy efficiency. The bill directed CARB to set a state-wide GHG emission limit based on 1990 levels, to be achieved by 2020.

AB 32 requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. In December 2008, CARB adopted its Climate Change Scoping Plan: A Framework for Change (Scoping Plan), which included the state's strategies for achieving AB 32's reduction targets. These strategies are implemented with additional rules and regulations of relevance to energy analysis, such as the Advanced Clean Cars Program, the low carbon fuel standard (LCFS), Title 24 building efficiency standards, and the Renewable Portfolio Standard (RPS). These are discussed further below.

Enacted in 2016, Senate Bill (SB) 32 (Pavley, 2016) codifies a 2030 GHG emissions reduction goal and requires CARB to ensure that state-wide GHG emissions are reduced to 40 percent below 1990 levels by 2030. Similar to AB 32, a reduction in GHG emissions typically corresponds with a reduction in energy usage as the bulk of GHGs result from the combustion of fossil fuel.

²⁰ CARB. Assembly Bill 32 Overview. 2006a. Available at: <http://www.arb.ca.gov/cc/ab32/ab32.htm>. Accessed: January 2022.

2.2.2.2 SB 350 (Clean Energy and Pollution Reduction Act of 2015)

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This bill requires the State Energy Resources Conservation and Development Commission to establish annual targets for state-wide energy efficiency savings and demand reduction that will achieve a cumulative doubling of state-wide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030.

2.2.2.3 2020 Integrated Energy Policy Report Update

The 2020 Integrated Energy Policy Report (IEPR) Update provides an assessment of major energy trends and issues for a variety of energy sectors, as well as policy recommendations.²¹ Prepared by the California Energy Commission (CEC), this report details the key energy issues facing California and develops potential strategies to address these issues. The 2020 IEPR Update includes a discussion of several strategies to reduce climate change impacts and lessen energy consumption and recommendations for each topic. Examples include a discussion of California's transportation future and the transition to zero-emission vehicles, the potential of microgrids to contribute to a clean and resilient energy system, and California's energy demand outlook updated to reflect the global pandemic. The assessments and forecasted energy demand within this report will be used by the CEC to develop future energy policies.

2.2.2.4 Title 24 Building Energy Efficiency Standards

The California Green Building Standards Code, as specified in Title 24, Part 11 of the California Code of Regulations, commonly referred to as CalGreen Building Standards (CalGreen), establishes voluntary and mandatory standards to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The provisions of this code apply to the planning, design, operation, construction, replacement, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout California. Examples of CalGreen provisions include reducing indoor water use, moisture sensing irrigation systems for landscaped areas, construction waste diversion goals, and energy system inspections. CalGreen is periodically amended; the most recent 2019 standards became effective on January 1, 2020.

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, and whole envelope. The 2005, 2008, and 2013 updates to the efficiency standards included provisions such as cool roofs on commercial buildings, increased use of skylights, and higher efficiency lighting, HVAC, and water heating systems. Additionally,

²¹ California Energy Commission. 2020. 2020 Integrated Energy Policy Report Update. Available at: <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2020-integrated-energy-policy-report-update>. Accessed: January 2022.

some standards focused on larger energy saving concepts such as reducing loads at peak periods and seasons and improving the quality of such energy-saving installations. Past updates to the Title 24 standards have proven very effective in reducing building energy use, with the 2013 update estimated to reduce energy consumption in residential buildings by 25% and energy consumption in commercial buildings by 30%, relative to the 2008 standards.²² The 2016 updates included additional high efficiency lighting requirements, high performance attic and walls, and higher efficiency water and space heaters. The 2016 standards were expected to reduce residential electricity consumption by 28% and non-residential electricity by 5%.²³ The CEC has developed and adopted 2019 standards, which went into effect on January 1, 2020.

The 2019 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2020.²⁴ The 2019 updates include a requirement for solar photovoltaic systems for new homes, requirements for newly constructed healthcare facilities, additional high efficiency lighting requirements, high performance attic and walls, higher efficiency water and space heaters, and high efficiency air filters. Relative to the 2016 standards, the 2019 standards are expected to reduce high-rise residential and non-residential electricity consumption by approximately 10.7% and natural gas consumption by 1% and require new low-rise residential buildings to achieve zero net electricity consumption using a combination of building efficiency and on-site renewable electricity generation.²⁵

As the Project phasing schedule anticipates build out as late as 2035, further reductions can be anticipated from future Title 24 code cycles. Thus, this analysis represents a conservative estimate of energy-related emissions. Estimated Project energy use rates for both the unmitigated and mitigated case are based on data provided by ConSol, which is described in more detail in Section 4.2 below.

The California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving Zero Net Energy (ZNE) for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030. The ZNE goal generally means that new buildings must use a combination of improved efficiency and renewable energy generation to meet 100 percent of their annual energy need, as specifically defined by the CEC:

"A ZNE Code Building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building, at the level of a single 'project' seeking development entitlements and building code permits, measured using the [CEC]'s Time Dependent Valuation (TDV) metric. A ZNE Code Building meets an Energy Use Intensity value designated in the

²² CEC. 2012. Energy Commission Approves More Efficient Buildings for California's Future. Available at: <https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C17.pdf>. Accessed: January 2022.

²³ CEC. 2015. 2016 Building Energy Efficiency Standards Adoption Hearing. Available at: https://web.archive.org/web/20190602115405/http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed: January 2022.

²⁴ CEC. 2019. California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Available online at: <https://www.energy.ca.gov/title24/2019standards/>. Accessed: January 2022.

²⁵ CEC. 2018. 2019 Title 24 Impact Analysis. June. Available at: https://web.archive.org/web/20190601203553/https://www.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_Report_2018-06-29.pdf. Accessed: January 2022.

Building Energy Efficiency Standards by building type and climate zone that reflect best practices for highly efficient buildings.”²⁶

While the adopted 2019 Title 24 standards do not achieve the 2020 Zero Net Energy goal, they do move the State further along the path to achieving this goal. The CEC has more recently focused on grid harmonization strategies (GHS), to bring maximum benefits to the grid, environment, and occupants; and GHG emissions reductions.²⁷

At the time of this writing, the CEC had adopted the 2022 Energy Code. In December 2021, the California Building Standards Commission approved the code for inclusion into the California Building Standards Code. The Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for or after January 1, 2023, must comply with the 2022 Energy Code.

2.2.2.5 Renewables Portfolio Standard

SB 1078 (2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to obtain at least 20 percent of their energy supply from renewable sources by 2017. SB 107 (2006) changed that target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expanded the state’s Renewable Portfolio Standard to 33 percent renewable power by 2020. In April 2011, then-Governor Brown signed SB 2X, which legislated the prior Executive Order S-14-08 renewable standard. SB 350 (2015) set an additional RPS goal of 50 percent renewables by 2030. And SB 100 (2018) accelerated and extended again the RPS – requiring achievement of a 50 percent RPS by 2026 and a 60 percent RPS by 2030. SB 100 also established a state policy goal to achieve 100 percent carbon-free electricity by 2045.

2.2.2.6 Mobile Source Regulations

SB 743 (Transportation Analysis under CEQA)

Public Resources Code Section 21099(c)(1), as codified through enactment of SB 743, was enacted with the intent to change the focus of transportation analyses conducted under the California Environmental Quality Act (CEQA). SB 743 reflects a legislative policy to balance the needs of congestion management with state-wide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As finalized in December 2018, amendments to the State CEQA Guidelines adopted in furtherance of SB 743 establish vehicle miles travelled (VMT), in lieu of level of service, as the new metric for transportation analysis. Implementation of SB 743 is anticipated to improve the efficiency of transportation fuels consumption.

SB 375 (Land Use Planning)

SB 375, the Sustainable Communities and Climate Protection Act of 2008, supports the State’s climate action goals to reduce GHG emissions through coordinated transportation and land use planning. SB 375 required CARB to establish GHG emission reduction targets (Regional Targets) for each metropolitan planning region. On September 23, 2010, CARB

²⁶ CEC, 2015 Integrated Energy Policy Report (2015), p. 41.

²⁷ CEC. 2018. The 2019 Building Energy Efficiency Standards ZNE Strategy. September 11. Available at: <https://www.cesa.org/wp-content/uploads/CESA-webinar-slides-9.11.2018.pdf>. Accessed: January 2022.

adopted Regional Targets applying to the years 2020 and 2035. In 2011, CARB adopted Regional Targets of 5% for 2020 and 10% for 2035 for the area under the jurisdiction of Fresno COG. These targets were in place through September 30, 2018. In March 2018, CARB approved updated regional targets of 6% for 2020 and 13% for 2035 for Fresno COG, which will be applied by Fresno COG in future planning cycles.

SB 375 requires MPOs, including Fresno COG, to incorporate a “sustainable communities strategy” (SCS) in their regional transportation plans (RTPs) that will achieve the GHG emission Reduction Targets set by CARB, primarily by reducing VMT from light-duty vehicles through development of more compact, complete, and efficient communities. Fresno COG most recently prepared the 2018 Regional Transportation Plan and Sustainable Communities Strategy²⁸ to fulfill this requirement; and the CARB accepted Fresno COG’s GHG quantification demonstration for that plan, which demonstrates achievement of the targets set prior to 2018.²⁹ At this time, the Fresno COG is working towards a Regional Transportation Plan Update, which is expected to be adopted in mid-2022.

Clean Cars

In January 2012, CARB approved the Advanced Clean Cars Program, which established an emissions control program for cars and light-duty trucks (such as SUVs, pickup trucks, and minivans) of model years 2017-2025. When the program is fully implemented, new vehicles would emit 75% less smog-forming pollutants than the average new car sold today, and greenhouse gas emissions would be reduced by nearly 35%. This Program would help reduce fossil fuel usage for internal combustion engine powered vehicles.

Commercial Motor Vehicle Idling Regulation

In July 2004, CARB initially adopted an Airborne Toxic Control Measure (ATCM) to limit idling of diesel-fueled commercial motor vehicles (idling ATCM) and subsequently amended it in October 2005, October 2009, and December 2013. This ATCM is set forth in Title 13, California Code of Regulations, Section 2485, and requires, among other things, that drivers of diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds, including buses and sleeper berth equipped trucks, not idle the vehicle’s primary diesel engine longer than five minutes at any location. This anti-idling regulation helps to reduce fuel consumption by reducing engine usage. The ATCM also requires owners and motor carriers that own or dispatch these vehicles to ensure compliance with the ATCM requirements. The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck’s main engine. Under the new engine requirements, 2008 and newer model year heavy-duty diesel engines need to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or optionally meet a stringent oxides of nitrogen idling emission standard.

²⁸ Fresno Council of Governments. 2018. The 2018 Regional Transportation Plan and Sustainable Communities Strategy. Available at: <https://www.fresnocog.org/project/regional-transportation-plan-rtp/>. Accessed: January 2022.

²⁹ CARB. 2020. Technical Evaluation of the Greenhouse Gas Emissions Reduction Quantification for Fresno Council of Governments’ SB 375 2018 Sustainable Communities Strategy. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-06/Technical_Evaluation_of_the_GHG_Emissions_Reduction_Quantification_for_the_FCOG_SB_375_SCS_September_2019.pdf. Accessed: January 2022.

In-Use Off-Road Diesel Fueled Fleets Regulation

In May 2008, CARB approved the In-Use Off-Road Diesel Fueled Fleets Regulation (Off-Road Regulation), which was later amended in December 2009, July 2010, and December 2011. The overall purpose of the Off-Road Regulation is to reduce emissions of oxides of nitrogen (NO_x) and particulate matter (PM) from off-road diesel vehicles operating within California. The regulation applies to all self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles. The Off Road Regulation:

- Imposes limits on idling (i.e., fleets must limit unnecessary idling to 5 minutes), requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System, DOORS) and labelled;
- Restricts the adding of older vehicles into fleets starting on January 1, 2014; and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) (i.e., exhaust retrofits).

The anti-idling component of this Off-Road Regulation helps to reduce fuel consumption by reducing engine usage.

Tractor-Trailer Greenhouse Gas Regulation

CARB's Tractor-Trailer Greenhouse Gas regulation reduces the energy consumption of large trucks. CARB developed this regulation to make heavy-duty tractors more fuel efficient. Fuel efficiency is improved by requiring the use of aerodynamic tractors and trailers that are also equipped with low rolling resistance tires. The tractors and trailers subject to this regulation must either use EPA's SmartWay (SmartWay) certified tractors and trailers or retrofit their existing fleet with SmartWay verified technologies. The SmartWay certification process is part of their broader voluntary program called the SmartWay Transport Partnership Program. The regulation applies primarily to owners of 53-foot or longer box-type trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. All owners regardless of where their vehicle is registered must comply with the regulation when they operate their affected vehicles on California highways. Besides the owners of these vehicles, drivers, motor carriers, California-based brokers and California-based shippers that operate or use them also share in the responsibility for compliance with the regulation.

Zero Emission Vehicles

Zero emission vehicles (ZEVs) include hydrogen fuel cell electric vehicles and plug-in electric vehicles, such as battery electric vehicles and plug-in hybrid electric vehicles.

In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet in order to help California achieve a reduction of GHG emissions from the transportation sector equalling 80 percent less than 1990 levels by 2050. In furtherance of that state-wide target for the transportation sector, the EO also calls upon CARB, the CEC and the California Public Utilities Commission to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the State's residents with easy access to ZEV infrastructure. EO B-16-2012 specifically

directed California to “encourage the development and success of zero-emission vehicles to protect the environment, stimulate economic growth, and improve the quality of life in the State.”³⁰

In 2018, Governor Brown also issued EO B-48-18, which launched an eight-year initiative to accelerate the sales of ZEVs through a mix of rebate programs and infrastructure improvements. The EO also sets a new target of five million ZEVs in California by 2030 and includes funding for multiple state agencies to increase EV charging infrastructure and provide purchase rebates/incentives.

In furtherance of the State’s ZEV penetration goals, in February 2013, the Governor’s Interagency Working Group on Zero-emission Vehicles issued the *2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025*.³¹ The 2013 ZEV Action Plan identifies four broad goals for State government to advance ZEVs: 1) Complete needed infrastructure and planning; 2) Expand consumer awareness and demand; 3) Transform fleets; and 4) Grow jobs and investment in the private sector. As part of these goals, some highlighted strategies and actions include: i) supporting ZEV infrastructure planning and investment by private entities; ii) enabling universal access to ZEV infrastructure for California drivers; iii) reducing upfront purchase costs for ZEVs; iv) promoting consumer awareness of ZEVs; and v) helping to expand ZEVs in bus fleets. The Action Plan discusses the challenges of ZEV expansion, which include the need to enable electric vehicle chargers in homes, increase consumer awareness, address up-front costs and operational limitations, and address that ZEVs are not commercially available for all categories of vehicles.

In October 2016, the Governor’s Interagency Working Group on Zero-Emission Vehicles issued the *2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025*.³² This report provides an update on progress toward achieving the 2013 goals and highlights the following four top priorities for the upcoming years: 1) Raise consumer awareness and education about ZEVs; 2) Ensure ZEVs are accessible to a broad range of Californians; 3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and 4) Aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: i) achieve mainstream consumer awareness of ZEV options and benefits; ii) make ZEVs an affordable and attractive option for drivers; iii) ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs; iv) maximize economic and job opportunities from ZEV technologies; v) bolster ZEV market growth outside of California; and vi) lead by example by integrating ZEVs into State government. The goals and strategies proposed in the 2013 Action Plan will continue to be implemented; however, additional strategies are proposed to help achieve the new goals, including setting targets to increase home charging stations in multiunit dwellings and disadvantaged communities and for public transit and school bus electrification. The 2016 Action Plan describes challenges toward achieving the 2025 goal of

³⁰ Executive Order B-16-2012. Available at: <https://www.ca.gov/archive/gov39/2012/03/23/news17472/>. Accessed: January 2022.

³¹ Governor’s Interagency Working Group on Zero-emission Vehicles. 2013. Available at: [http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_\(02-13\).pdf](http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf). Accessed: January 2022.

³² Governor’s Interagency Working Group on Zero-emission Vehicles. 2016. Available at: https://www.ca.gov/archive/gov39/wp-content/uploads/2018/01/2016_ZEV_Action_Plan-1.pdf. Accessed: January 2022.

1.5 million ZEVs in California, such as that most consumers are still not aware of the benefits of passenger ZEVs and that over 1,000,000 charge points will be needed at homes, workplaces, and public locations but only 11,000 non-home charge points are installed as stated in the 2016 ZEV Action Plan.

In September 2018, the Governor's Interagency Working Group on Zero-Emission Vehicles published the 2018 ZEV Action Plan Priorities Update.³³ This update is the result of Governor Brown's directive to update the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in zero-emission vehicle infrastructure, particularly in low income and disadvantaged communities. The 2018 Priorities Update serves three fundamental purposes: 1) Provide direction to state agencies on the most important actions to be executed in 2018 to enable progress toward the 2025 targets and 2030 Vision; 2) Give stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market; and 3) Create a platform for stakeholder engagement, feedback, and collaboration. As of July 2018, over 410,000 ZEVs have been sold in California, which is approximately 150,000 ZEVs since the publication of the 2016 Action Plan in October 2016.

In July 2020, CARB prepared an Assessment of CARB's Zero-Emission Vehicles Programs Per Senate Bill 498. In this report, CARB staff reviews its programs that affect the adoption of light, medium, and heavy-duty ZEVs, including identifying each program's goals and status in meeting those goals, performing a cost-benefit analysis where data are available, and comparing CARB's ZEV programs with those of other jurisdictions. Additionally, pursuant to SB 498, CARB provides policy recommendations for increasing the use of ZEVs in the State, as well as recommendations for vehicle fleet operators to increase the use of ZEVs.³⁴

The California Zero-Emission Vehicle Market Development Strategy was published in February 2021.³⁵ This strategy was prepared to meet the targets identified by Governor Newsom in Executive Order N-79-20, which include the following zero-emission vehicle targets for California:

- 100% of in-state sales of new passenger cars and light-duty trucks will be zero-emission by 2035,
- 100% zero-emission medium and heavy-duty vehicles in the state by 2045 where feasible and by 2035 for drayage trucks, and
- 100% zero-emission off-road vehicles and equipment operations by 2035, where feasible.

A document prioritizing near-term actions for the next year was prepared in August 2021 called the ZEV Pillar Priorities.³⁶ This annual implementation document identifies the

³³ Governor's Interagency Working Group on Zero-emission Vehicles. 2018. Available at: <https://static.business.ca.gov/wp-content/uploads/2019/12/2018-ZEV-Action-Plan-Priorities-Update.pdf>. Accessed: January 2022.

³⁴ CARB. 2020. Assessment of CARB's Zero-Emission Vehicles Programs Per Senate Bill 498. Available at: <https://ww3.arb.ca.gov/programs/zev/SB-498-Report-072320.pdf>. Accessed: January 2022.

³⁵ CARB. 2021. California Zero-Emission Vehicle Market Development Strategy. Available at: https://static.business.ca.gov/wp-content/uploads/2021/02/ZEV_Strategy_Feb2021.pdf. Accessed: January 2022.

³⁶ CARB. 2021. ZEV Pillar Priorities. Available at: <https://static.business.ca.gov/wp-content/uploads/2021/08/ZEVPillarPriority.pdf>. Accessed: January 2022.

near-term actions to create market opportunity, remove barriers, and further collective understanding.

In June 2020, CARB approved the Advanced Clean Trucks regulation, which has requirements for manufacturer ZEV sales and a one-time reporting requirement for large entities and fleets.³⁷ The Advanced Clean Truck Regulation is part of a holistic approach to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8. Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines are required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales. Large employers including retailers, manufacturers, brokers, and others are required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, are required to report about their existing fleet operations. This information helps to identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

California is incentivizing the purchase of ZEVs through implementation of the Clean Vehicle Rebate Project (CVRP), which is administered by a non-profit organization (The Center for Sustainable Energy) for CARB and currently subsidizes the purchase of passenger near-zero and zero emission vehicles as follows:

- Hydrogen Fuel Cell Electric Vehicles: \$5,000;
 - Battery Electric Vehicles: \$2,500;
 - Plug-In Hybrid Electric Vehicles: \$1,500; and
 - Neighborhood Electric Vehicles and Zero Emission Motorcycles: \$900.

In March 2017, CARB received Volkswagen's (VW) first 30-month ZEV Investment Plan (Plan).³⁸ This Plan is required by California's partial settlement with VW resulting from VW's use of illegal devices in its 2.0-liter (2.0L) diesel cars sold in the State from model years 2009 to 2015. The Plan describes how VW is proposing to spend the first \$200 million in California on ZEV charging infrastructure (including the development and maintenance of ZEV charging stations), public awareness, increasing ZEV access, and a green city demonstration. In June 2017, Electrify America (a subsidiary of VW) provided CARB with additional information on the Plan.³⁹ CARB approved the first of the four plans in July 2017.⁴⁰

³⁷ CARB. 2020. Advanced Clean Trucks. Available at: <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>. Accessed: January 2022.

³⁸ VOLKSWAGEN, Group of America. 2017. California ZEV Investment Plan: Cycle 1, March 8, 2017. Available at: <https://www.electrifyamerica.com/assets/pdf/California%20ZEV%20Investment%20Plan%20Cycle%201.3bc672a3.pdf>. Accessed: January 2022.

³⁹ Electrify America. 2017. Supplement to the California ZEV Investment Plan, Cycle 1, June 29, 2017. Available at: <https://www.electrifyamerica.com/assets/pdf/Cycle%201%20CA%20ZEV%20Invest%20Plan%20Supplement.a92e7705.pdf>. Accessed: January 2022.

⁴⁰ CARB, 2017. CARB Approves \$200 Million VW Zero-Emission Vehicle Investment in California, July, 27. Available at: <https://ww2.arb.ca.gov/news/carb-approves-200-million-vw-zero-emission-vehicle-investment-california>. Accessed: January 2022.

In its 2014 First Update, CARB recognized that the light-duty vehicle fleet “will need to become largely electrified by 2050 in order to meet California’s emission reduction goals.”⁴¹ Accordingly, CARB’s ACC program – summarized above – requires about 15 percent of new cars sold in California in 2025 to be a plug-in hybrid, battery electric or fuel cell vehicle.⁴²

Other state-wide and regional initiatives that spur ZEV uptake include the following:

- CARB currently subsidizes the purchase of passenger near-zero and zero emission vehicles and provides access to high-occupancy vehicle (HOV) lanes to ZEV drivers.
- The VW settlement will result in \$800 million in ZEV projects in California over the next ten years, with a focus on increasing public awareness and infrastructure in the first funding cycle.⁴³
- The CalGreen standards require new residential and non-residential construction to be pre-wired to facilitate the future installation and use of electric vehicle chargers (see Section 4.106.4 and Section 5.106.5.3 of 2016 CalGreen standards for the residential and nonresidential pre-wiring requirements, respectively).

In January 2017, three of California’s largest utilities submitted proposals to the California Public Utilities Commission (CPUC) to electrify the State’s transportation sector through more than \$1 billion in investments:

- Southern California Edison (SCE) filed an application to expand electric transportation in its service area. Some of SCE’s proposals include monetary rewards to rideshare drivers who use an electric vehicle, additional fast charge infrastructure at targeted locations within the region, and rates that are designed to incentivize electric vehicle adoption.⁴⁴
- Pacific Gas and Electric (PG&E) submitted an application that aims to expand the electrification of medium- and heavy-duty vehicle fleets, expand fast-charging stations that can refuel EVs in 20-30 minutes, and explore new uses for vehicle electrification.⁴⁵
- San Diego Gas & Electric (SDG&E) submitted an application to install tens of thousands of charging stations in its service area to boost the transition to zero-emission vehicles, trucks, shuttles, and delivery fleets.⁴⁶

⁴¹ CARB, First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014), p. 48.

⁴² Id. at p. 47.

⁴³ CARB, Volkswagen Settlement – California ZEV Investments webpage, available at: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/vw-zevinvest.htm. Accessed: January 2022.

⁴⁴ SCE, Application of Southern California Edison Company (U 338-E) for Approval of Its 2017 Transportation Electrification Proposals (January 20, 2017).

⁴⁵ PG&E, In the Matter of the Application of Pacific Gas and Electric Company for Approval of its Senate Bill 350 Transportation Electrification Program (January 20, 2017).

⁴⁶ SDG&E, Application of San Diego Gas & Electric Company (U902E) for Approval of SB 350 Transportation Electrification Proposals (January 20, 2017).

2.2.3 Local Programs

2.2.3.1 City of Fresno General Plan

The City of Fresno's General Plan was adopted in December 2014.⁴⁷ As part of a General Plan Update, the City of Fresno prepared a Program Environmental Impact Report for the continued implementation of the approved Fresno General Plan, text changes to the Mobility and Transportation Element related to Vehicle Miles Traveled (VMT) analysis, and an update to the Greenhouse Gas Reduction Plan. The Greenhouse Gas Reduction Plan Update includes measures related to energy conservation strategies for new and existing buildings and energy efficiency reductions.⁴⁸

⁴⁷ City of Fresno. 2014. Fresno General Plan. Available at: <https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/07/ConsolidatedGP6182020.pdf>. Accessed: January 2022.

⁴⁸ LSA. 2021. Appendix G Greenhouse Gas Reduction Plan Update. Available at: <https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/03/Link4AppendixGGHGRPUpdate.pdf>. Accessed: January 2022.

3. SIGNIFICANCE THRESHOLDS

The analysis provided in this report evaluates the significance of the Project's energy by reference to the following questions from Section VI, Energy, of Appendix G of the CEQA Guidelines:

Threshold 1. Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Threshold 2. Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

While no quantitative thresholds related to energy are included in the CEQA Guidelines, Part I of Appendix F of the CEQA Guidelines states as follows:

"The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

1. decreasing overall per capita energy consumption,
2. decreasing reliance on fossil fuels such as coal, natural gas and oil, and
3. increasing reliance on renewable energy resources."

Appendix F of the CEQA Guidelines states that an Environmental Impact Report (EIR) should include a discussion of the potential energy impacts of a project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

For purposes of this analysis, impacts to energy resources will be considered to be significant if the project would result in the wasteful, inefficient or unnecessary consumption of fuel or energy, and conversely if the project would not incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features.

To determine whether a project would result in the wasteful, inefficient or unnecessary consumption of fuel or energy, and conversely whether the project would fail to incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features, Appendix F of the CEQA Guidelines identifies six categories of potential energy-related environmental impacts:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.
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.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

This report, relative to Threshold 1, assesses the Project's electricity, natural gas, and fossil fuel consumption during construction and operation by way of the six questions above. This report, relative to Threshold 2, evaluates the Project for consistency with applicable plans related to renewable energy and energy efficiency (see **Appendix B, Table B-1**: State Plan Level Consistency Analysis and **Appendix B, Table B-2**: Local Plan-Level Consistency Analysis). The Local Plan-Level Consistency Analysis is based on the City of Fresno's Greenhouse Gas Reduction Plan Update⁴⁹ and the applicable City of Fresno General Plan⁵⁰ policies and objectives.

⁴⁹ City of Fresno. 2021. Greenhouse Gas Reduction Plan Update. Available at: <https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/03/Link4AppendixGGHGRPUpdate.pdf>. Accessed: February 2022.

⁵⁰ City of Fresno. 2014. Fresno General Plan. Available at: <https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/07/ConsolidatedGP6182020.pdf>. Accessed: February 2022.

4. METHODOLOGY FOR DEVELOPMENT OF ENERGY PROJECTIONS

This section describes the methodology that Ramboll used to develop the regulatory compliance-based energy projections associated with the Project, which include one-time demand from construction and annual operational demand. This section also identifies the results of the energy projections for the Project based on compliance with applicable regulatory requirements.

Additional information regarding methodology can be found in the **Greenhouse Gas Emissions Technical Report** and **Air Quality Technical Report** for the Project; only the methodology specific to energy usage is discussed in this report.

4.1 Construction Equipment & Activities

Project construction is planned to begin in 2023, with full build out expected in 2023.

Construction of the Project is not anticipated to require natural gas fuel. As such, natural gas related to construction of the Project is not discussed further.

Construction of the Project requires the use of transportation fuel, including gasoline and diesel use in construction equipment, material transport via hauling trucks, delivery via vendor trucks, and construction worker vehicles. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, while VMT associated with the transportation of construction materials and construction worker commutes would also result in fuel consumption. Heavy-duty construction equipment associated with construction activities would use diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction; this analysis assumed that construction workers would primarily use gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of construction. CalEEMod® was used to estimate construction equipment usage, and results are included in **Appendix A**. Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO₂) emissions from each construction phase to gallons using conversion factors for CO₂ to gallons of diesel. The estimated diesel fuel usage from off-road construction sources, which totals 55,154 gallons of diesel over the course of the project construction period, is shown in **Table 4-1**.

Fuel consumption from worker, vendor, and hauling trips are estimated by converting the total CO₂ emissions from each construction phase to gallons using conversion factors for CO₂ to gallons of gasoline or diesel. Worker vehicles are assumed to include light-duty automobiles and trucks, vendor vehicles are assumed to include an equal mix of medium heavy-duty trucks and heavy heavy-duty trucks, and hauling vehicles are assumed to include heavy heavy-duty trucks. Estimated fuel usage, which totals 17,539 gallons of gasoline and 29,805 gallons of diesel over the course of the project construction period, is shown in **Table 4-2**.

4.2 Operational Energy Requirements

Energy requirements are evaluated for the first year of Project operations (2023).

4.2.1 Electricity

Operation of the Project will result in electricity demand for the car wash, warehouse, gas station, and parking lot. The annual electricity usage for each land use is presented in **Table 4-3**. The total electricity use for the Project incorporates 2019 Title 24 standards.

4.2.2 Natural Gas

The Project will require natural gas, mainly for building heating and hot water. Natural gas is estimated using CalEEMod® defaults based on averages for the climate zone for the car wash, warehouse, and gas station. The annual natural gas usage for each land use is presented in **Table 4-4**. Estimates for the project are conservative because they assume the project would be built to existing Title 24, Part 6 standards, even though subsequent, more energy efficient iterations of the code will apply.

4.2.3 Fuel Usage

4.2.3.1 Gasoline

Gasoline fuel consumption for Project operation is shown in **Table 4-5**. Operational gasoline fuel usage occurs due to member trips and employee trips when commuting to work at the warehouse, car wash, and gas station and is calculated based on gasoline vehicle VMT. The development of the member and employee VMT is described in detail in the **Greenhouse Gas Emissions Technical Report** and **Air Quality Technical Report**. Gasoline fuel consumption for the Project is calculated by dividing total member and employee VMT by average fuel efficiency of gasoline vehicles in Fresno County from the EMFAC2021 database for calendar year 2023. The analysis also reflects the reasonably foreseeable change based on the discontinued operation of the Costco Warehouse located at 4500 W Shaw Avenue. For purposes of this analysis, 4500 W Shaw Avenue is assumed to be backfilled by a shopping center use resulting in less fuel use. The methodology to account for this change is described in detail in the **Air Quality Technical Report**.

4.2.3.2 Diesel

Diesel fuel consumption for Project operation is shown in **Table 4-6**. Operational diesel fuel usage occurs due to warehouse truck, fuel delivery truck, and MDO delivery truck trips to the site.

Warehouse truck, fuel delivery truck, and MDO delivery truck fuel consumption is based on total VMT, which described in detail in the **Greenhouse Gas Emissions Technical Report** and **Air Quality Technical Report**. Diesel fuel consumption for the Project is calculated by dividing total diesel truck VMT by the average fuel efficiency of diesel vehicles in Fresno County from the EMFAC2021 database for calendar year 2023.

4.2.3.3 Electricity

Electricity consumption from electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs) for Project operation is shown in **Table 4-7**. Operational transportation-related electricity usage occurs due to member trips and employee trips when commuting to work at the warehouse, car wash, and gas station and is calculated based on gasoline vehicle VMT. The development of the member and employee VMT is described in detail in the **Greenhouse Gas Emissions Technical Report** and **Air Quality Technical Report**.

Electricity consumption for the Project is calculated by dividing total electric-powered VMT by the average energy efficiency of electric vehicles and plug-in hybrid electric vehicles in Fresno County from the EMFAC2021 database for calendar year 2023. The analysis also reflects the reasonably foreseeable change based on the discontinued operation of the Costco Warehouse located at 4500 W Shaw Avenue. The methodology to account for this change is described in detail in the **Air Quality Technical Report**.

5. PROJECT INVENTORY IN CONTEXT

This section assesses the significance of the Project's energy demand for purposes of CEQA. Project impacts – i.e., energy use beyond existing Baseline conditions – are assessed against the thresholds.

5.1 Threshold 1

Would the Project Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources, during Project Construction or Operation?

5.1.1 Energy Requirements and Energy Use Efficiencies

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.

5.1.1.1 Construction

Construction of the proposed project would result in fuel usage as shown in **Table 5-1**. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

5.1.1.2 Operations

Operation of the Project would result in electricity, natural gas, gasoline, and diesel fuel usage, as shown in **Table 5-2**. There are no unusual project characteristics that would require consumption that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

Over the lifetime of the project, the fuel efficiency of the vehicles being used for Project operation is expected to improve. The amount of fuel consumption from vehicular trips to and from the project site during operation would correspondingly decrease over time as vehicles become more efficient. Numerous regulations have been adopted that encourage, and require, increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles that combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emissions vehicles in California. As such, operation of the Project is expected to use decreasing amounts of fuel over time, due to advances in fuel economy.

5.1.2 Local and Regional Energy Supplies

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The effects of the project on local and regional energy supplies and on requirements for additional capacity.

5.1.2.1 Construction

The Project's fuel consumption during construction is discussed in **Section 4.1**. Relative to total electricity and fuel comparison countywide, Project construction would use approximately 0.005% of gasoline and 0.04% of diesel fuel over the duration of construction (**Table 5-1**). In comparison to State-wide usage, construction of the Project would equate to approximately 0.0001% of gasoline usage and less than 0.002% of diesel fuel usage (**Table 5-1**). Therefore, fuel use during construction would be temporary and negligible. Fuel consumption in 2023 (the year of full build-out of the Project) was estimated using EMFAC2021 for Fresno County and California State-wide.

5.1.2.2 Operations Electricity

The Project's electricity demand during operation is discussed in **Section 4.2.1**. For comparison, based on 2020 consumption, operation of the Project would equate to 0.029% of the total electricity demand countywide and 0.001% of the total electricity demand state-wide (**Table 5-2**). Therefore, the Project is not expected to have an impact on the local utility.

In 2020, total in-state electricity consumption was 279,510 GWh.⁵¹ The CEC estimates that state-wide energy demand will increase to 354,209 GWh in 2030.⁵² The Project's anticipated electricity usage of 2,292,337 kWh/year is approximately 0.0008% of the state-wide demand in 2020. Given that the state is growing annually, the anticipated state-wide energy demand for the Project Operational build-out year of 2023 will likely be greater than that in 2020, and thus the project's relative percentage contribution to the state-wide energy demand would be even less.

The Project's electricity use projections also represent a small percentage of regional estimates for PG&E. The CEC estimates that PG&E energy demand will increase to about 114,000 GWh in 2023.⁵³ The project's anticipated electricity usage of 2,292,337 kWh/year is approximately 0.002% of the projected PG&E planning area demand in 2023.

Overall, the Project's projected electricity demand is consistent with, and a small percentage of, state and regional projections. Therefore, the Project will not require additional generation capacity beyond more general state-wide expansion.

⁵¹ California Energy Commission. 2020. Electricity consumption by county. Available at: <https://ecdns.energy.ca.gov/elecbycounty.aspx> Accessed: January 2022.

⁵² California Energy Commission. 2018. California Energy Demand 2018-2030 Revised Forecast. Available online at: <https://efiling.energy.ca.gov/getdocument.aspx?tn=223244>. Accessed: January 2022.

⁵³ California Energy Commission. 2018. Electricity and Natural Gas Demand Forecast. Available online at: <https://efiling.energy.ca.gov/getdocument.aspx?tn=223244>. Accessed: January 2022.

Natural Gas

The Project's natural gas demand during operation is described in **Section 4.2.2**. For comparison, based on 2020 consumption, operation of the Project would equate to 0.008% of the total natural gas demand countywide and 0.0002% of the total natural gas demand state-wide (**Table 5-2**).

Overall, the Project's natural gas consumption is a small percentage of state and regional consumption. Therefore, the Project is not expected to have an impact on the local natural gas resources.

Fuel Usage

The Project's fuel usage during operation is discussed in **Section 4.2.3**. As discussed in **Section 4.2.3.1**, Project gasoline consumption due to mobile VMT is approximately 2,001,579 gallons/year, which is 0.522% of the gasoline that would be used countywide in 2023 and 0.013% of the gasoline used state-wide in 2023. Project operational diesel consumption is approximately 344,953 gallons/year, which is 0.161% of the total diesel that would be used countywide in 2023. Operation of the Project would result in about 0.007% of the total diesel that would be used state-wide each year (**Table 5-2**).

5.1.2.3 Summary

The Project will not have a substantial impact on the local or regional energy supplies or require additional capacity to be constructed. The Project's impacts are less than significant.

5.1.3 Peak and Base Period Demands

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The effects of the project on peak and base period demands for electricity and other forms of energy.

5.1.3.1 Construction

The Project's base energy consumption compared to regional and state-wide energy consumption is discussed above in **Section 5.1.2**. The electricity demand associated with construction of the Project will be supplied by existing on-site power poles when available. In the event of an emergency or during a power outage, the use of generator sets is permissible, which are comprised of a generator and diesel engine used to produce power off-grid. Therefore, relatively negligible impacts to energy demand are expected as a result of construction activities.

5.1.3.2 Operation

The Project Operation will not have a substantial impact on the peak and base period demands for electricity or other forms of energy. The Project's base energy consumption compared to regional and state-wide energy consumption is discussed above in **Section 5.1.2**. Further details and reasoning on the peak demand are described below.

In 2020, California's peak grid demand was 47,236 MW. On August 14, 2020, PG&E reached a maximum demand of 21,103 MW.⁵⁴ In comparison, the Project's maximum demand is expected to be approximately 0.6 MW in 2023. This is a conservative estimate since it was

⁵⁴ California ISO. 2021. 2020-2021 Transmission Plan. Available online at: <http://www.caiso.com/Documents/BoardApproved2020-2021TransmissionPlan.pdf>. Accessed: January 2022.

derived by dividing the total electricity energy required for Project Operation by the annual number of working hours, though some sources of electricity would operate 24 hours per day for every day of the year. Thus, the Project will have a relatively negligible effect on state-wide and PG&E peak demands.

5.1.3.3 Summary

As described above, the Project will not have a substantial impact on peak and base period demands for electricity and other forms of energy. The Project's impacts are less than significant.

5.1.4 Existing Energy Standards

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The degree to which the project complies with existing energy standards.

5.1.4.1 Construction

Project construction requires use of on-road trucks for soil hauling and deliveries, and off-road equipment such as excavators, tractors/loaders/backhoes, forklifts, and graders. The construction activities would comply with state requirements designed to minimize idling and associated emissions, which also minimizes use of fuel. Specifically, idling of commercial vehicles and off-road equipment would be limited to five minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation, and the trucks used would be compliant with the requirements of the Tractor-Trailer Greenhouse Gas Regulation.

5.1.4.2 Operation Electricity

The Project's anticipated electricity use is discussed in **Section 4.2.1**.

The electricity demand estimate for the Project incorporates the 2019 Title 24 standards. If the application for the Project is applied for on or after January 1, 2023, then the Project will comply with the 2022 Title 24 Standards.

Natural Gas

The Project's anticipated natural gas use is discussed in **Section 4.2.2**.

The natural gas demand for the Project is estimated in accordance with the Title 24 standards. For this analysis, the Project is assumed to meet 2019 Title 24 standards. If the application for the Project is applied for on or after January 1, 2023, then the Project will comply with the 2022 Title 24 Standards.

Fuel Usage

The Project's anticipated fuel use is discussed in **Section 4.2.3**. There are no unusual project characteristics that would require the use of gasoline and diesel that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

Vehicle use for the proposed project also has been evaluated pursuant to the technical advisory the Governor's Office of Planning and Research published under SB 743, which

created a process to change the methods used for transportation impacts analyses under CEQA from focusing on level of service to VMT. (See 14 CCR 15064.3.)

5.1.4.3 Summary

As described above, the Project will comply with all applicable energy standards. The Project's impacts are less than significant.

5.1.5 Energy Resources

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The effects of the project on energy resources.

The Project's energy use is discussed in **Section 4** above, including electricity, natural gas, gasoline, and diesel consumption associated with on-site equipment, mobile operations, and construction activities. The Project's use of energy will not have a substantial effect on state-wide or regional energy resources. Total operational energy use requirements for the Project are summarized in **Table 5-2**. Programs and measures relevant to energy resources are discussed in detail above.

The Project will not significantly impact energy resources and the Project's impacts are less than significant.

5.1.6 Transportation Energy Use

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Conventional gasoline and diesel vehicles consume gasoline or diesel fuel, whereas EVs consume electricity that can be sourced by fossil fuels or renewables. EVs, including battery-electric vehicles and plug-in hybrid electric vehicles, comprise a growing fraction of the passenger vehicles on the roads in California. EV adoption is expected to increase over the upcoming decades due in part to improvements in battery technology and public initiatives and goals. This increase in EV adoption will decrease the fuel requirements due to transportation.

New state-wide regulations, such as Truck and Bus Rule (Title 13 CCR Section 2025), On-Road Heavy-Duty Vehicle Program (Title 13, CCR Section 1956.8), Pavley Clean Car Standards and the Advanced Clean Cars (ACC) program have been instated which reduce emissions and fuel requirements from trucks and cars.

Gasoline fuel usage for the Project shown in **Table 4-5** will decrease over time as fleets become more fuel efficient and switch to more electric vehicles. While there is a growth in diesel fuel usage, the growth rate is slower than the increase in VMT due to enhanced fuel efficiency of heavy-duty vehicles in the Project year as shown in **Table 4-6**.

5.1.7 Summary

Based on the above analysis of each of the environmental impact factors identified in CEQA Guidelines Appendix F, the potential for the Project to result in wasteful, inefficient, or unnecessary consumption of fuel or energy, and conversely to fail to incorporate energy efficiency measures into equipment use, transportation or other project features is **less than significant**.

5.2 Threshold 2

Would the Project Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?

The Proposed Project would comply with any applicable state plans for renewable energy or energy efficiency to the extent required by law. Further, the Project would be consistent with the renewable energy and energy efficiency provisions of the City of Fresno General Plan⁵⁵. This plan is described in more detail in **Section 2.2.3** and the relevant provisions of each plan are listed in **Appendix B**. The Project has been evaluated for consistency with state plans and has been concluded to be consistent; the assessment for state plan measures is found in **Appendix B, Table B-1**. Additionally, the Project has been evaluated for consistency with the relevant provisions and has been concluded to be consistent; the assessment for individual local plan measures is found in **Appendix B, Table B-2**. As such, Project impacts are **less than significant**.

⁵⁵ City of Fresno. 2014. Fresno General Plan. Available at: <https://www.fresno.gov/darm/wp-content/uploads/sites/10/2019/07/ConsolidatedGP6182020.pdf>. Accessed: January 2022.

TABLES

Table 4-1. Construction Off-road Equipment Fuel Consumption

Costco Commercial Center

Fresno, California

| Year | CO₂ Emissions¹ (MT/yr) | Diesel Consumption² (gallons/yr) |
|-------------|---|--|
| 2023 | 563 | 55,154 |

Conversions:10.21 kg CO₂/gallon diesel1,000 kg CO₂/MT CO₂Notes:

¹ Offroad emissions estimated using CalEEMod[®] guidance as presented in the CalEEMod[®] User's Guide, Appendix A. Available at: www.caleemod.com. Accessed: January 2022.

² The conversion factor for diesel is 10.21 kg CO₂/gallon per The Climate Registry, 2021. Available at: <https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf>. Accessed: January 2022.

Abbreviations:CalEEMod[®] - CALifornia Emissions Estimator MODELCO₂ - carbon dioxide

kg - kilograms

MT - metric ton

yr - year

Table 4-2. Construction On-Road Fuel Consumption

Costco Commercial Center

Fresno, California

| Year | Gasoline Consumption^{1,2} (gallons/yr) | Diesel Consumption^{1,2} (gallons/yr) |
|-------------|--|--|
| 2023 | 17,539 | 29,805 |

Conversions:³

8.78 kg CO₂/gallon gasoline

10.21 kg CO₂/gallon diesel

1,000 kg CO₂/MT CO₂

Notes:

¹ Onroad CO₂ emissions are calculated using emission factors from EMFAC2017 based on fleet wide totals, including worker, vendor, and hauling trips. Worker vehicles are assumed to include light duty automobiles and trucks (50% LDA, 25% LDT1, 25% LDT2). Vendor vehicles are assumed to include medium heavy-duty trucks and heavy heavy-duty trucks (50% MHDT, 50% HHDT). Hauling vehicles are assumed to include heavy heavy-duty trucks (100% HHDT). Onroad CO₂ emissions can be referenced in the CalEEMod output.

² CO₂ emissions for worker, vendor, and hauling trips were split based on gasoline or diesel fuel consumption. The fuel consumption breakdown was derived using fuel consumption in Fresno County using EMFAC2021.

³ The conversion factors for gasoline and diesel are 8.78 kg CO₂/gallon and 10.21 kg CO₂/gallon, respectively, per The Climate Registry, 2021. Available at: <https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf>. Accessed: January 2022.

Abbreviations:

CO₂ - carbon dioxide

EMFAC - Emission FACTors model

kg - kilograms

HHDT - heavy heavy-duty trucks

LDA - light-duty automobile

LDT - light-duty truck

MHDT - medium heavy-duty trucks

MT - metric ton

yr - year

Table 4-3. Electricity Consumption

Costco Commercial Center

Fresno, California

| Land Use | Electricity Demand (kWh/yr)¹ |
|--------------------------|--|
| Automobile Care Center | 41,328 |
| Discount Club | 1,911,410 |
| Gasoline/Service Station | 38,897 |
| Parking Lot | 124,460 |
| Project | 2,116,095 |

Notes:

¹ Project electricity demand is obtained from CalEEMod[®] outputs.

Abbreviations:

CalEEMod[®] - CALifornia Emissions Estimator MODel

kWh - kilowatt hours

yr - year

Table 4-4. Natural Gas Consumption

Costco Commercial Center

Fresno, California

| Land Use | Natural Gas Demand (kBTU/yr)¹ |
|--------------------------|---|
| Automobile Care Center | 99,360 |
| Discount Club | 2,560,620 |
| Gasoline/Service Station | 93,514 |
| Parking Lot | 0 |
| Project | 2,753,494 |

Notes:

¹ Project natural gas demand is obtained from CalEEMod[®] outputs.

Abbreviations:

CalEEMod[®] - CALifornia Emissions Estimator MODeI

kBTU - kilo British Thermal Unit

yr - year

Table 4-5. Gasoline Consumption

Costco Commercial Center

Fresno, California

| Mobile Source Activity | VMT (miles/yr) ¹ | Gasoline Consumption (gallons/yr) ² |
|--------------------------|--------------------------------|---|
| 4500 W. Shaw Ave | | |
| Gasoline Vehicles | 22,315,831 | 955,908 |
| Herndon/Riverside | | |
| Gasoline Vehicles | 69,043,050 | 2,957,487 |

Constants:

Average efficiency in 2023

23.35 miles per gallon³Notes:¹ Vehicle miles traveled are based on data provided by Kittelson & Associates, 2023.² Gasoline consumption is calculated by assuming an average fuel efficiency and the reported VMT. The portion of the VMT that is gasoline vehicles is determined using the project-specific fleet mix.³ The average fuel efficiency is obtained from EMFAC2021 for Fresno County based on the fuel consumption and vehicle miles traveled for 2023.Abbreviations:

EMFAC - Emission FACtors model

VMT - vehicle miles traveled

yr - year

Table 4-6. Diesel Consumption

Costco Commercial Center
Fresno, California

| Mobile Source Activity | Annual Diesel-Related Activity ¹ | Diesel Consumption (gallons/yr) ² |
|---|---|--|
| 4500 W. Shaw Ave | | |
| Diesel Vehicles (VMT per year) ³ | 0 | 0 |
| Herndon/Riverside | | |
| Transportation Refrigeration Units (hours per year) | 7,382 | 5,655 |
| Diesel Vehicles (VMT per year) ³ | 2,440,575 | 339,298 |

Constants:

Average efficiency in 2023

7.19 miles per gallon⁴

TRU fuel consumption rate⁴

0.77 gallons per hour

60 minutes per hour

Notes:

¹ Diesel VMT are based on data provided by Kittelson & Associates, 2023. TRU Cycle Duration is based on 2 hours of loading time plus the duration of the on-site and off-site transit. Assumptions based on Table II.G.1 of CARB Proposed Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate. Available at: <https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/appi.pdf>. Accessed: June 2022.

² Diesel consumption for diesel vehicles is calculated by assuming an average fuel efficiency and the reported VMT. The portion of the VMT that is diesel vehicles is determined using the project-specific fleet mix. TRU diesel consumption is calculated based on OFFROAD2021 fuel consumption rate and the annual operation.

³ Vehicle miles traveled are based on data provided by Kittelson & Associates, 2023.

⁴ The average fuel efficiency is obtained from EMFAC2021 for Fresno County based on the fuel consumption and vehicle miles traveled for 2023.

⁴ TRU fuel consumption rate is obtained from the OFFROAD2021 emissions output for Calendar Year 2023, Transportation Refrigeration Unit - Instate Trailer and Transportation Refrigeration Unit - Out-Of-State Trailer in Fresno County.

Abbreviations:

EMFAC - Emission FACtors model

TRU - Transport Refrigeration Units

VMT - vehicle miles traveled

yr - year

Table 4-7. Electricity Consumption from Vehicles

Costco Commercial Center
Fresno, California

| Mobile Source Activity | VMT (miles/yr) ¹ | Electricity Consumption ² (kWh/yr) |
|---|--------------------------------|--|
| 4500 W. Shaw Ave | | |
| Plug-in Hybrid Electric Vehicles ³ | 206,859 | 62,478 |
| Herndon/Riverside | | |
| Electric Vehicles | 116,874 | 45,420 |
| Plug-in Hybrid Electric Vehicles ³ | 640,004 | 193,300 |

Constants:

Average efficiency in 2023

| | |
|----------------------------------|--------------------------|
| Electric Vehicles | 2.57 mi/kWh ⁴ |
| Plug-in Hybrid Electric Vehicles | 3.31 mi/kWh ⁴ |

Notes:

¹ Vehicle miles traveled are based on data provided by Kittelson & Associates, 2023.

² Electricity consumption from electric miles driven is calculated by assuming an average energy economy and the reported VMT. The portion of the VMT that is electric-powered is determined using the project-specific fleet mix.

³ The VMT from plug-in hybrid electric vehicles accounts for electric vehicle miles traveled, also known as eVMT.

⁴ The average fuel efficiency is obtained from EMFAC2021 for Fresno County based on the energy consumption and electric vehicle miles traveled for 2023.

Abbreviations:

CalEEMod® - CALifornia Emissions Estimator MODeL

EMFAC - Emission FACtors model

eVMT - electric vehicle miles traveled

kWh - kilowatt-hour

mi - mile

VMT - vehicle miles traveled

yr - year

Table 5-1. Construction Energy Resource Summary

Costco Commercial Center
Fresno, California

| Energy Resource | Total Construction ¹ | Fresno County | | California | |
|---------------------------------|---------------------------------|--------------------|--|--------------------|--|
| | | Annual Consumption | Project's Construction Contribution ⁴ (%) | Annual Consumption | Project's Construction Contribution ⁴ (%) |
| Gasoline (gallons) ² | 17,539 | 383,581,859 | 0.005% | 15,688,627,269 | 0.00011% |
| Diesel (gallons) ³ | 84,959 | 214,135,125 | 0.040% | 5,000,677,060 | 0.00170% |

Notes:

¹ Offroad and onroad emissions are calculated using methodology consistent with CalEEMod[®] version 2020.4.0. Offroad emission factors are from OFFROAD whereas onroad emission factors are from EMFAC2017. See Tables 4-1 and 4-2 for detailed fuel consumption of the Off-Road Equipment and On-Road Vehicles categories, respectively.

² Gasoline data for Fresno County and the State of California are obtained from EMFAC2021 for calendar year 2023.

³ Diesel data for Fresno County and the State of California are obtained from EMFAC2021 and OFFROAD2021 for calendar year 2023.

⁴ The project's construction contribution was calculated based on the maximum annual construction energy consumption.

Abbreviations:

% - percent

CalEEMod[®] - CALifornia Emissions Estimator MODEl

EMFAC - California Air Resources Board Emissions Factor Model

Table 5-2. Operation Energy Resource Summary

Costco Commercial Center
Fresno, California

| Energy Resource | Operation ¹ | Fresno County | | California | |
|--------------------------------------|------------------------|----------------|---|-------------------|---|
| | | Consumption | Project's Contribution (%) ⁸ | Consumption | Project's Contribution (%) ⁸ |
| Electricity (kWh/yr) ^{2,3} | 2,292,337 | 8,017,830,742 | 0.029% | 279,510,007,246 | 0.0008% |
| Natural Gas (kBtu/yr) ^{4,5} | 2,753,494 | 32,583,736,325 | 0.008% | 1,232,858,294,229 | 0.0002% |
| Gasoline (gallons/yr) ⁶ | 2,001,579 | 383,581,859 | 0.522% | 15,688,627,269 | 0.013% |
| Diesel (gallons/yr) ⁷ | 344,953 | 214,135,125 | 0.161% | 5,000,677,060 | 0.007% |

Conversions:

99,976.1 Btu/therm
1,000 Btu/kBtu
1,000,000 kWh/GWh
1,000 kWh/MWh

Notes:

¹ Project data are based on CalEEMod[®] output.

² Electricity data for Fresno County in 2020 from <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>.

³ Electricity data for the State is obtained for all counties in 2020 from <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>.

⁴ Natural gas data for Fresno County in 2020 from <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>.

⁵ Natural gas data for the State is obtained for all counties in 2020 from <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>.

⁶ Gasoline data for Fresno County and the State of California are obtained from EMFAC2021 for calendar year 2023.

⁷ Diesel data for Fresno County and the State of California are obtained from EMFAC2021 and OFFROAD2021 for calendar year 2023.

⁸ The project's construction contribution was calculated based on the maximum annual operational energy consumption.

Abbreviations:

Btu - British thermal unit

CalEEMod[®] - CALifornia Emissions Estimator MODel

EMFAC - EMISSION FACtors model

GWh - gigawatt hours

kWh - kilowatt hours

kBtu - kilo-British thermal unit

MWh - megawatt hours

yr - year

APPENDIX A CALEEMOD OUTPUT

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Costco Fresno Mitigated Construction Run****Fresno County, Annual****1.0 Project Characteristics****1.1 Land Usage**

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|--------------------------|--------|----------|-------------|--------------------|------------|
| Parking Lot | 889.00 | Space | 15.55 | 355,600.00 | 0 |
| Automobile Care Center | 4.80 | 1000sqft | 0.11 | 4,800.00 | 0 |
| Discount Club | 241.34 | 1000sqft | 5.54 | 241,340.00 | 0 |
| Gasoline/Service Station | 32.00 | Pump | 1.33 | 4,517.60 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|----------------------------------|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Rural | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 45 |
| Climate Zone | 3 | | | Operational Year | 2023 |
| Utility Company | Pacific Gas and Electric Company | | | | |
| CO2 Intensity (lb/MWhr) | 191.61 | CH4 Intensity (lb/MWhr) | 0.033 | N2O Intensity (lb/MWhr) | 0.004 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project-specific information (RPS Emission Factor)

Land Use - Project-specific information

Construction Phase - Project-specific information

Off-road Equipment -

Off-road Equipment - Project-specific information

Off-road Equipment -

Off-road Equipment - Project-specific information

Off-road Equipment - Project-specific information

Off-road Equipment - Project-specific information

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

Vehicle Emission Factors -

[illegible]

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | | | |
|-------------------------|----------------------------|-----------|---------|
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 9.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 14.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 14.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 20.00 | 50.00 |
| tblConstructionPhase | NumDays | 370.00 | 110.00 |
| tblConstructionPhase | NumDays | 20.00 | 7.00 |
| tblConstructionPhase | NumDays | 35.00 | 30.00 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | | | |
|----------------------|------------------------------|-----------|------------|
| tblConstructionPhase | NumDays | 35.00 | 20.00 |
| tblConstructionPhase | NumDays | 20.00 | 40.00 |
| tblConstructionPhase | NumDays | 10.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | PhaseEndDate | 4/11/2025 | 11/10/2023 |
| tblConstructionPhase | PhaseEndDate | 2/14/2025 | 11/10/2023 |
| tblConstructionPhase | PhaseEndDate | 5/26/2023 | 5/8/2023 |
| tblConstructionPhase | PhaseEndDate | 7/28/2023 | 6/12/2023 |
| tblConstructionPhase | PhaseEndDate | 9/15/2023 | 7/5/2023 |
| tblConstructionPhase | PhaseEndDate | 3/14/2025 | 9/13/2023 |
| tblConstructionPhase | PhaseEndDate | 6/9/2023 | 5/8/2023 |
| tblConstructionPhase | PhaseStartDate | 3/15/2025 | 9/14/2023 |
| tblConstructionPhase | PhaseStartDate | 9/16/2023 | 7/6/2023 |
| tblConstructionPhase | PhaseStartDate | 6/10/2023 | 5/9/2023 |
| tblConstructionPhase | PhaseStartDate | 7/29/2023 | 6/13/2023 |
| tblConstructionPhase | PhaseStartDate | 2/15/2025 | 7/29/2023 |
| tblConstructionPhase | PhaseStartDate | 5/27/2023 | 5/1/2023 |
| tblConsumerProducts | ROG_EF | 2.14E-05 | 0 |
| tblConsumerProducts | ROG_EF_Degreaser | 3.542E-07 | 0 |
| tblConsumerProducts | ROG_EF_PesticidesFertilizers | 5.152E-08 | 0 |
| tblEnergyUse | LightingElect | 2.70 | 0.00 |
| tblEnergyUse | LightingElect | 3.71 | 0.00 |
| tblEnergyUse | LightingElect | 2.70 | 0.00 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | | | |
|---------------------------|----------------------------|----------|-----------|
| tblEnergyUse | LightingElect | 0.35 | 0.00 |
| tblEnergyUse | NT24E | 4.16 | 0.00 |
| tblEnergyUse | NT24E | 2.30 | 0.00 |
| tblEnergyUse | NT24E | 4.16 | 0.00 |
| tblEnergyUse | NT24NG | 3.84 | 0.00 |
| tblEnergyUse | NT24NG | 2.08 | 0.00 |
| tblEnergyUse | NT24NG | 3.84 | 0.00 |
| tblEnergyUse | T24E | 1.75 | 0.00 |
| tblEnergyUse | T24E | 1.91 | 0.00 |
| tblEnergyUse | T24E | 1.75 | 0.00 |
| tblEnergyUse | T24NG | 16.86 | 0.00 |
| tblEnergyUse | T24NG | 8.53 | 0.00 |
| tblEnergyUse | T24NG | 16.86 | 0.00 |
| tblGrading | MaterialExported | 0.00 | 3,000.00 |
| tblGrading | MaterialImported | 0.00 | 60,000.00 |
| tblLandscapeEquipment | NumberSummerDays | 180 | 0 |
| tblLandUse | LotAcreage | 8.00 | 15.55 |
| tblLandUse | LotAcreage | 0.10 | 1.33 |
| tblOffRoadEquipment | HorsePower | 172.00 | 401.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 3.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 3.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 191.61 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblSolidWaste | SolidWasteGenerationRate | 18.34 | 0.00 |
| tblSolidWaste | SolidWasteGenerationRate | 1,037.93 | 0.00 |
| tblSolidWaste | SolidWasteGenerationRate | 17.25 | 0.00 |

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

| | | | |
|-----------------|---------------------|---------------|------|
| tblTripsAndVMT | HaulingTripNumber | 1.00 | 2.00 |
| tblVehicleTrips | ST_TR | 23.72 | 0.00 |
| tblVehicleTrips | ST_TR | 53.75 | 0.00 |
| tblVehicleTrips | ST_TR | 182.17 | 0.00 |
| tblVehicleTrips | SU_TR | 11.88 | 0.00 |
| tblVehicleTrips | SU_TR | 33.67 | 0.00 |
| tblVehicleTrips | SU_TR | 166.88 | 0.00 |
| tblVehicleTrips | WD_TR | 23.72 | 0.00 |
| tblVehicleTrips | WD_TR | 41.80 | 0.00 |
| tblVehicleTrips | WD_TR | 172.01 | 0.00 |
| tblWater | IndoorWaterUseRate | 451,589.32 | 0.00 |
| tblWater | IndoorWaterUseRate | 17,876,662.33 | 0.00 |
| tblWater | IndoorWaterUseRate | 425,020.45 | 0.00 |
| tblWater | OutdoorWaterUseRate | 276,780.55 | 0.00 |
| tblWater | OutdoorWaterUseRate | 10,956,664.01 | 0.00 |
| tblWater | OutdoorWaterUseRate | 260,496.40 | 0.00 |

2.0 Emissions Summary

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 2.2806 | 4.5511 | 3.7117 | 0.0113 | 0.9356 | 0.1729 | 1.1085 | 0.3872 | 0.1595 | 0.5467 | 0.0000 | 1,026.9395 | 1,026.9395 | 0.1854 | 0.0533 | 1,047.4410 |
| Maximum | 2.2806 | 4.5511 | 3.7117 | 0.0113 | 0.9356 | 0.1729 | 1.1085 | 0.3872 | 0.1595 | 0.5467 | 0.0000 | 1,026.9395 | 1,026.9395 | 0.1854 | 0.0533 | 1,047.4410 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 2.0686 | 3.9074 | 4.6415 | 0.0113 | 0.5786 | 0.0294 | 0.6080 | 0.2169 | 0.0291 | 0.2459 | 0.0000 | 1,026.9388 | 1,026.9388 | 0.1854 | 0.0533 | 1,047.4403 |
| Maximum | 2.0686 | 3.9074 | 4.6415 | 0.0113 | 0.5786 | 0.0294 | 0.6080 | 0.2169 | 0.0291 | 0.2459 | 0.0000 | 1,026.9388 | 1,026.9388 | 0.1854 | 0.0533 | 1,047.4403 |

| | 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 | 9.30 | 14.14 | -25.05 | 0.00 | 38.16 | 82.99 | 45.15 | 43.99 | 81.76 | 55.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 1 | 5-1-2023 | 7-31-2023 | 3.2883 | 2.7515 |
| 2 | 8-1-2023 | 9-30-2023 | 2.0410 | 1.7429 |
| | | Highest | 3.2883 | 2.7515 |

2.2 Overall Operational

Unmitigated Operational

[illegible]

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**2.2 Overall Operational****Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

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

3.0 Construction Detail**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|------------------|------------------|------------|-----------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 5/1/2023 | 5/8/2023 | 6 | 7 | |
| 2 | Site Preparation | Site Preparation | 5/1/2023 | 5/8/2023 | 6 | 7 | |
| 3 | Grading | Grading | 5/9/2023 | 6/12/2023 | 6 | 30 | |

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

| | | | | | | |
|---|-----------------------|-----------------------|-----------|------------|---|-----|
| 4 | Grading/BC Overlap | Grading | 6/13/2023 | 7/5/2023 | 6 | 20 |
| 5 | Building Construction | Building Construction | 7/6/2023 | 11/10/2023 | 6 | 110 |
| 6 | Paving | Paving | 7/29/2023 | 9/13/2023 | 6 | 40 |
| 7 | Architectural Coating | Architectural Coating | 9/14/2023 | 11/10/2023 | 6 | 50 |

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 165****Acres of Paving: 15.55****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 375,986; Non-Residential Outdoor: 125,329; Striped Parking Area: 21,336 (Architectural Coating – sqft)****OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|------------------------------|--------|-------------|-------------|-------------|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Graders | 3 | 8.00 | 187 | 0.41 |
| Grading | Other Construction Equipment | 2 | 8.00 | 401 | 0.42 |
| Grading | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Grading | Rubber Tired Dozers | 4 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Surfacing Equipment | 1 | 8.00 | 263 | 0.30 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Grading/BC Overlap | Excavators | 3 | 8.00 | 158 | 0.38 |
| Grading/BC Overlap | Rough Terrain Forklifts | 2 | 8.00 | 100 | 0.40 |
| Grading/BC Overlap | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading/BC Overlap | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction | Excavators | 3 | 8.00 | 158 | 0.38 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | | | | | |
|-----------------------|---------------------------|---|------|-----|------|
| Building Construction | Rough Terrain Forklifts | 2 | 8.00 | 100 | 0.40 |
| Building Construction | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Paving | Rough Terrain Forklifts | 1 | 8.00 | 100 | 0.40 |
| Paving | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Paving | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition | 6 | 15.00 | 0.00 | 2.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 4 | 10.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 15 | 38.00 | 0.00 | 7,500.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading/BC Overlap | 11 | 28.00 | 0.00 | 375.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 11 | 230.00 | 99.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 5 | 13.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 46.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Demolition - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.1000e-004 | 0.0000 | 1.1000e-004 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.9400e-003 | 0.0752 | 0.0688 | 1.4000e-004 | | 3.4900e-003 | 3.4900e-003 | | 3.2500e-003 | 3.2500e-003 | 0.0000 | 11.8972 | 11.8972 | 3.3300e-003 | 0.0000 | 11.9805 |
| Total | 7.9400e-003 | 0.0752 | 0.0688 | 1.4000e-004 | 1.1000e-004 | 3.4900e-003 | 3.6000e-003 | 2.0000e-005 | 3.2500e-003 | 3.2700e-003 | 0.0000 | 11.8972 | 11.8972 | 3.3300e-003 | 0.0000 | 11.9805 |

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 | 1.3000e-004 | 3.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0567 | 0.0567 | 0.0000 | 1.0000e-005 | 0.0593 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1000e-004 | 1.5000e-004 | 1.7700e-003 | 1.0000e-005 | 6.5000e-004 | 0.0000 | 6.6000e-004 | 1.7000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 0.5083 | 0.5083 | 1.0000e-005 | 1.0000e-005 | 0.5126 |
| Total | 2.1000e-004 | 2.8000e-004 | 1.8000e-003 | 1.0000e-005 | 6.7000e-004 | 0.0000 | 6.8000e-004 | 1.7000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.5650 | 0.5650 | 1.0000e-005 | 2.0000e-005 | 0.5719 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Demolition - 2023****Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 5.0000e-005 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2400e-003 | 0.0641 | 0.0864 | 1.4000e-004 | | 4.5000e-004 | 4.5000e-004 | | 4.5000e-004 | 4.5000e-004 | 0.0000 | 11.8972 | 11.8972 | 3.3300e-003 | 0.0000 | 11.9805 |
| Total | 3.2400e-003 | 0.0641 | 0.0864 | 1.4000e-004 | 5.0000e-005 | 4.5000e-004 | 5.0000e-004 | 1.0000e-005 | 4.5000e-004 | 4.6000e-004 | 0.0000 | 11.8972 | 11.8972 | 3.3300e-003 | 0.0000 | 11.9805 |

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 | 1.3000e-004 | 3.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0567 | 0.0567 | 0.0000 | 1.0000e-005 | 0.0593 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1000e-004 | 1.5000e-004 | 1.7700e-003 | 1.0000e-005 | 6.5000e-004 | 0.0000 | 6.6000e-004 | 1.7000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 0.5083 | 0.5083 | 1.0000e-005 | 1.0000e-005 | 0.5126 |
| Total | 2.1000e-004 | 2.8000e-004 | 1.8000e-003 | 1.0000e-005 | 6.7000e-004 | 0.0000 | 6.8000e-004 | 1.7000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.5650 | 0.5650 | 1.0000e-005 | 2.0000e-005 | 0.5719 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Site Preparation - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1200e-003 | 0.0215 | 0.0312 | 4.0000e-005 | | 1.0600e-003 | 1.0600e-003 | | 9.8000e-004 | 9.8000e-004 | 0.0000 | 3.8302 | 3.8302 | 1.2400e-003 | 0.0000 | 3.8612 |
| Total | 2.1200e-003 | 0.0215 | 0.0312 | 4.0000e-005 | 0.0000 | 1.0600e-003 | 1.0600e-003 | 0.0000 | 9.8000e-004 | 9.8000e-004 | 0.0000 | 3.8302 | 3.8302 | 1.2400e-003 | 0.0000 | 3.8612 |

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 | 1.4000e-004 | 1.0000e-004 | 1.1800e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3389 | 0.3389 | 1.0000e-005 | 1.0000e-005 | 0.3417 |
| Total | 1.4000e-004 | 1.0000e-004 | 1.1800e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3389 | 0.3389 | 1.0000e-005 | 1.0000e-005 | 0.3417 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Site Preparation - 2023****Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.0600e-003 | 0.0243 | 0.0328 | 4.0000e-005 | | 2.6000e-004 | 2.6000e-004 | | 2.6000e-004 | 2.6000e-004 | 0.0000 | 3.8302 | 3.8302 | 1.2400e-003 | 0.0000 | 3.8612 |
| Total | 1.0600e-003 | 0.0243 | 0.0328 | 4.0000e-005 | 0.0000 | 2.6000e-004 | 2.6000e-004 | 0.0000 | 2.6000e-004 | 2.6000e-004 | 0.0000 | 3.8302 | 3.8302 | 1.2400e-003 | 0.0000 | 3.8612 |

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 | 1.4000e-004 | 1.0000e-004 | 1.1800e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3389 | 0.3389 | 1.0000e-005 | 1.0000e-005 | 0.3417 |
| Total | 1.4000e-004 | 1.0000e-004 | 1.1800e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3389 | 0.3389 | 1.0000e-005 | 1.0000e-005 | 0.3417 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Grading - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.4522 | 0.0000 | 0.4522 | 0.2086 | 0.0000 | 0.2086 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1079 | 1.1479 | 0.7006 | 1.9600e-003 | | 0.0465 | 0.0465 | | 0.0428 | 0.0428 | 0.0000 | 172.1647 | 172.1647 | 0.0557 | 0.0000 | 173.5567 |
| Total | 0.1079 | 1.1479 | 0.7006 | 1.9600e-003 | 0.4522 | 0.0465 | 0.4987 | 0.2086 | 0.0428 | 0.2514 | 0.0000 | 172.1647 | 172.1647 | 0.0557 | 0.0000 | 173.5567 |

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 | 8.0000e-003 | 0.4693 | 0.0990 | 2.2100e-003 | 0.0642 | 4.4300e-003 | 0.0686 | 0.0177 | 4.2400e-003 | 0.0219 | 0.0000 | 212.4374 | 212.4374 | 1.3900e-003 | 0.0334 | 222.4289 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3000e-003 | 1.6100e-003 | 0.0192 | 6.0000e-005 | 7.0900e-003 | 3.0000e-005 | 7.1200e-003 | 1.8800e-003 | 3.0000e-005 | 1.9100e-003 | 0.0000 | 5.5190 | 5.5190 | 1.3000e-004 | 1.4000e-004 | 5.5650 |
| Total | 0.0103 | 0.4709 | 0.1182 | 2.2700e-003 | 0.0713 | 4.4600e-003 | 0.0757 | 0.0195 | 4.2700e-003 | 0.0238 | 0.0000 | 217.9564 | 217.9564 | 1.5200e-003 | 0.0336 | 227.9939 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Grading - 2023****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 | | | | | 0.2035 | 0.0000 | 0.2035 | 0.0939 | 0.0000 | 0.0939 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0480 | 0.9363 | 1.0751 | 1.9600e-003 | | 5.6200e-003 | 5.6200e-003 | | 5.6200e-003 | 5.6200e-003 | 0.0000 | 172.1645 | 172.1645 | 0.0557 | 0.0000 | 173.5565 |
| Total | 0.0480 | 0.9363 | 1.0751 | 1.9600e-003 | 0.2035 | 5.6200e-003 | 0.2091 | 0.0939 | 5.6200e-003 | 0.0995 | 0.0000 | 172.1645 | 172.1645 | 0.0557 | 0.0000 | 173.5565 |

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 | 8.0000e-003 | 0.4693 | 0.0990 | 2.2100e-003 | 0.0642 | 4.4300e-003 | 0.0686 | 0.0177 | 4.2400e-003 | 0.0219 | 0.0000 | 212.4374 | 212.4374 | 1.3900e-003 | 0.0334 | 222.4289 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.3000e-003 | 1.6100e-003 | 0.0192 | 6.0000e-005 | 7.0900e-003 | 3.0000e-005 | 7.1200e-003 | 1.8800e-003 | 3.0000e-005 | 1.9100e-003 | 0.0000 | 5.5190 | 5.5190 | 1.3000e-004 | 1.4000e-004 | 5.5650 |
| Total | 0.0103 | 0.4709 | 0.1182 | 2.2700e-003 | 0.0713 | 4.4600e-003 | 0.0757 | 0.0195 | 4.2700e-003 | 0.0238 | 0.0000 | 217.9564 | 217.9564 | 1.5200e-003 | 0.0336 | 227.9939 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.5 Grading/BC Overlap - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1967 | 0.0000 | 0.1967 | 0.1011 | 0.0000 | 0.1011 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0329 | 0.3343 | 0.3036 | 5.7000e-004 | | 0.0151 | 0.0151 | | 0.0139 | 0.0139 | 0.0000 | 50.3819 | 50.3819 | 0.0163 | 0.0000 | 50.7893 |
| Total | 0.0329 | 0.3343 | 0.3036 | 5.7000e-004 | 0.1967 | 0.0151 | 0.2118 | 0.1011 | 0.0139 | 0.1149 | 0.0000 | 50.3819 | 50.3819 | 0.0163 | 0.0000 | 50.7893 |

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 | 4.0000e-004 | 0.0235 | 4.9500e-003 | 1.1000e-004 | 3.2100e-003 | 2.2000e-004 | 3.4300e-003 | 8.8000e-004 | 2.1000e-004 | 1.0900e-003 | 0.0000 | 10.6219 | 10.6219 | 7.0000e-005 | 1.6700e-003 | 11.1215 |
| 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 | 1.1300e-003 | 7.9000e-004 | 9.4400e-003 | 3.0000e-005 | 3.4800e-003 | 2.0000e-005 | 3.5000e-003 | 9.2000e-004 | 1.0000e-005 | 9.4000e-004 | 0.0000 | 2.7111 | 2.7111 | 6.0000e-005 | 7.0000e-005 | 2.7337 |
| Total | 1.5300e-003 | 0.0243 | 0.0144 | 1.4000e-004 | 6.6900e-003 | 2.4000e-004 | 6.9300e-003 | 1.8000e-003 | 2.2000e-004 | 2.0300e-003 | 0.0000 | 13.3329 | 13.3329 | 1.3000e-004 | 1.7400e-003 | 13.8551 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.5 Grading/BC Overlap - 2023****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 | | | | | 0.0885 | 0.0000 | 0.0885 | 0.0455 | 0.0000 | 0.0455 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0141 | 0.2857 | 0.3759 | 5.7000e-004 | | 2.1800e-003 | 2.1800e-003 | | 2.1800e-003 | 2.1800e-003 | 0.0000 | 50.3819 | 50.3819 | 0.0163 | 0.0000 | 50.7892 |
| Total | 0.0141 | 0.2857 | 0.3759 | 5.7000e-004 | 0.0885 | 2.1800e-003 | 0.0907 | 0.0455 | 2.1800e-003 | 0.0477 | 0.0000 | 50.3819 | 50.3819 | 0.0163 | 0.0000 | 50.7892 |

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 | 4.0000e-004 | 0.0235 | 4.9500e-003 | 1.1000e-004 | 3.2100e-003 | 2.2000e-004 | 3.4300e-003 | 8.8000e-004 | 2.1000e-004 | 1.0900e-003 | 0.0000 | 10.6219 | 10.6219 | 7.0000e-005 | 1.6700e-003 | 11.1215 |
| 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 | 1.1300e-003 | 7.9000e-004 | 9.4400e-003 | 3.0000e-005 | 3.4800e-003 | 2.0000e-005 | 3.5000e-003 | 9.2000e-004 | 1.0000e-005 | 9.4000e-004 | 0.0000 | 2.7111 | 2.7111 | 6.0000e-005 | 7.0000e-005 | 2.7337 |
| Total | 1.5300e-003 | 0.0243 | 0.0144 | 1.4000e-004 | 6.6900e-003 | 2.4000e-004 | 6.9300e-003 | 1.8000e-003 | 2.2000e-004 | 2.0300e-003 | 0.0000 | 13.3329 | 13.3329 | 1.3000e-004 | 1.7400e-003 | 13.8551 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.6 Building Construction - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1776 | 1.8072 | 1.6238 | 3.0900e-003 | | 0.0814 | 0.0814 | | 0.0748 | 0.0748 | 0.0000 | 271.4578 | 271.4578 | 0.0878 | 0.0000 | 273.6527 |
| Total | 0.1776 | 1.8072 | 1.6238 | 3.0900e-003 | | 0.0814 | 0.0814 | | 0.0748 | 0.0748 | 0.0000 | 271.4578 | 271.4578 | 0.0878 | 0.0000 | 273.6527 |

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 | 5.6200e-003 | 0.2227 | 0.0698 | 1.0000e-003 | 0.0327 | 1.3900e-003 | 0.0340 | 9.4400e-003 | 1.3300e-003 | 0.0108 | 0.0000 | 95.4877 | 95.4877 | 5.3000e-004 | 0.0144 | 99.7859 |
| Worker | 0.0511 | 0.0357 | 0.4263 | 1.3400e-003 | 0.1573 | 7.3000e-004 | 0.1580 | 0.0418 | 6.7000e-004 | 0.0425 | 0.0000 | 122.4820 | 122.4820 | 2.9000e-003 | 3.1900e-003 | 123.5038 |
| Total | 0.0567 | 0.2584 | 0.4961 | 2.3400e-003 | 0.1899 | 2.1200e-003 | 0.1920 | 0.0512 | 2.0000e-003 | 0.0532 | 0.0000 | 217.9697 | 217.9697 | 3.4300e-003 | 0.0176 | 223.2896 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.6 Building Construction - 2023****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 | 0.0758 | 1.5354 | 2.0193 | 3.0900e-003 | | 0.0116 | 0.0116 | | 0.0116 | 0.0116 | 0.0000 | 271.4575 | 271.4575 | 0.0878 | 0.0000 | 273.6524 |
| Total | 0.0758 | 1.5354 | 2.0193 | 3.0900e-003 | | 0.0116 | 0.0116 | | 0.0116 | 0.0116 | 0.0000 | 271.4575 | 271.4575 | 0.0878 | 0.0000 | 273.6524 |

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 | 5.6200e-003 | 0.2227 | 0.0698 | 1.0000e-003 | 0.0327 | 1.3900e-003 | 0.0340 | 9.4400e-003 | 1.3300e-003 | 0.0108 | 0.0000 | 95.4877 | 95.4877 | 5.3000e-004 | 0.0144 | 99.7859 |
| Worker | 0.0511 | 0.0357 | 0.4263 | 1.3400e-003 | 0.1573 | 7.3000e-004 | 0.1580 | 0.0418 | 6.7000e-004 | 0.0425 | 0.0000 | 122.4820 | 122.4820 | 2.9000e-003 | 3.1900e-003 | 123.5038 |
| Total | 0.0567 | 0.2584 | 0.4961 | 2.3400e-003 | 0.1899 | 2.1200e-003 | 0.1920 | 0.0512 | 2.0000e-003 | 0.0532 | 0.0000 | 217.9697 | 217.9697 | 3.4300e-003 | 0.0176 | 223.2896 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.7 Paving - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0356 | 0.3745 | 0.2593 | 5.4000e-004 | | 0.0168 | 0.0168 | | 0.0154 | 0.0154 | 0.0000 | 47.0096 | 47.0096 | 0.0152 | 0.0000 | 47.3896 |
| Paving | 0.0204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0559 | 0.3745 | 0.2593 | 5.4000e-004 | | 0.0168 | 0.0168 | | 0.0154 | 0.0154 | 0.0000 | 47.0096 | 47.0096 | 0.0152 | 0.0000 | 47.3896 |

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 | 1.0500e-003 | 7.3000e-004 | 8.7600e-003 | 3.0000e-005 | 3.2300e-003 | 1.0000e-005 | 3.2500e-003 | 8.6000e-004 | 1.0000e-005 | 8.7000e-004 | 0.0000 | 2.5174 | 2.5174 | 6.0000e-005 | 7.0000e-005 | 2.5384 |
| Total | 1.0500e-003 | 7.3000e-004 | 8.7600e-003 | 3.0000e-005 | 3.2300e-003 | 1.0000e-005 | 3.2500e-003 | 8.6000e-004 | 1.0000e-005 | 8.7000e-004 | 0.0000 | 2.5174 | 2.5174 | 6.0000e-005 | 7.0000e-005 | 2.5384 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.7 Paving - 2023****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 | 0.0131 | 0.2697 | 0.3271 | 5.4000e-004 | | 2.0600e-003 | 2.0600e-003 | | 2.0600e-003 | 2.0600e-003 | 0.0000 | 47.0095 | 47.0095 | 0.0152 | 0.0000 | 47.3896 |
| Paving | 0.0204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0335 | 0.2697 | 0.3271 | 5.4000e-004 | | 2.0600e-003 | 2.0600e-003 | | 2.0600e-003 | 2.0600e-003 | 0.0000 | 47.0095 | 47.0095 | 0.0152 | 0.0000 | 47.3896 |

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 | 1.0500e-003 | 7.3000e-004 | 8.7600e-003 | 3.0000e-005 | 3.2300e-003 | 1.0000e-005 | 3.2500e-003 | 8.6000e-004 | 1.0000e-005 | 8.7000e-004 | 0.0000 | 2.5174 | 2.5174 | 6.0000e-005 | 7.0000e-005 | 2.5384 |
| Total | 1.0500e-003 | 7.3000e-004 | 8.7600e-003 | 3.0000e-005 | 3.2300e-003 | 1.0000e-005 | 3.2500e-003 | 8.6000e-004 | 1.0000e-005 | 8.7000e-004 | 0.0000 | 2.5174 | 2.5174 | 6.0000e-005 | 7.0000e-005 | 2.5384 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.8 Architectural Coating - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.8169 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7900e-003 | 0.0326 | 0.0453 | 7.0000e-005 | | 1.7700e-003 | 1.7700e-003 | | 1.7700e-003 | 1.7700e-003 | 0.0000 | 6.3831 | 6.3831 | 3.8000e-004 | 0.0000 | 6.3927 |
| Total | 1.8217 | 0.0326 | 0.0453 | 7.0000e-005 | | 1.7700e-003 | 1.7700e-003 | | 1.7700e-003 | 1.7700e-003 | 0.0000 | 6.3831 | 6.3831 | 3.8000e-004 | 0.0000 | 6.3927 |

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 | 4.6500e-003 | 3.2500e-003 | 0.0388 | 1.2000e-004 | 0.0143 | 7.0000e-005 | 0.0144 | 3.8000e-003 | 6.0000e-005 | 3.8600e-003 | 0.0000 | 11.1347 | 11.1347 | 2.6000e-004 | 2.9000e-004 | 11.2276 |
| Total | 4.6500e-003 | 3.2500e-003 | 0.0388 | 1.2000e-004 | 0.0143 | 7.0000e-005 | 0.0144 | 3.8000e-003 | 6.0000e-005 | 3.8600e-003 | 0.0000 | 11.1347 | 11.1347 | 2.6000e-004 | 2.9000e-004 | 11.2276 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.8 Architectural Coating - 2023****Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.8169 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.4900e-003 | 0.0339 | 0.0458 | 7.0000e-005 | | 3.6000e-004 | 3.6000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 6.3831 | 6.3831 | 3.8000e-004 | 0.0000 | 6.3927 |
| Total | 1.8184 | 0.0339 | 0.0458 | 7.0000e-005 | | 3.6000e-004 | 3.6000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 6.3831 | 6.3831 | 3.8000e-004 | 0.0000 | 6.3927 |

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 | 4.6500e-003 | 3.2500e-003 | 0.0388 | 1.2000e-004 | 0.0143 | 7.0000e-005 | 0.0144 | 3.8000e-003 | 6.0000e-005 | 3.8600e-003 | 0.0000 | 11.1347 | 11.1347 | 2.6000e-004 | 2.9000e-004 | 11.2276 |
| Total | 4.6500e-003 | 3.2500e-003 | 0.0388 | 1.2000e-004 | 0.0143 | 7.0000e-005 | 0.0144 | 3.8000e-003 | 6.0000e-005 | 3.8600e-003 | 0.0000 | 11.1347 | 11.1347 | 2.6000e-004 | 2.9000e-004 | 11.2276 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

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

4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|--------------------------|-------------------------|----------|--------|-------------|------------|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 0.00 | 0.00 | 0.00 | | |
| Discount Club | 0.00 | 0.00 | 0.00 | | |
| Gasoline/Service Station | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|--------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Automobile Care Center | 14.70 | 6.60 | 6.60 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Discount Club | 14.70 | 6.60 | 6.60 | 16.70 | 64.30 | 19.00 | 45 | 40 | 15 |
| Gasoline/Service Station | 14.70 | 6.60 | 6.60 | 2.00 | 79.00 | 19.00 | 14 | 27 | 59 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | Miles | | | Trip % | | | Trip Purpose % | | |
|-------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Parking Lot | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Automobile Care Center | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Discount Club | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Gasoline/Service Station | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Parking Lot | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

[illegible]

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

Unmitigated

[illegible]

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

Mitigated

[illegible]

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|-----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail**6.1 Mitigation Measures Area**

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

[illegible]

6.2 Area by SubCategory

Unmitigated

[illegible]

Costco Fresno Mitigated Construction Run - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**6.2 Area by SubCategory****Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.0 Water Detail**7.1 Mitigation Measures Water**

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

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

7.2 Water by Land Use**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

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

8.2 Waste by Land Use**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Discount Club | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline/Service Station | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

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

Costco Fresno Mitigated Construction Run - Fresno County, Annual

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

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

11.0 Vegetation

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Costco Fresno (Project) Operation****Fresno County, Annual****1.0 Project Characteristics****1.1 Land Usage**

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|--------------------------|--------|----------|-------------|--------------------|------------|
| Parking Lot | 889.00 | Space | 8.00 | 355,600.00 | 0 |
| Automobile Care Center | 4.80 | 1000sqft | 0.11 | 4,800.00 | 0 |
| Discount Club | 241.34 | 1000sqft | 5.54 | 241,340.00 | 0 |
| Gasoline/Service Station | 32.00 | Pump | 0.10 | 4,517.60 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|-------------------------|----------------------------------|-------------------------|-------|---------------------------|-------|
| Urbanization | Rural | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 45 |
| Climate Zone | 3 | | | Operational Year | 2023 |
| Utility Company | Pacific Gas and Electric Company | | | | |
| CO2 Intensity (lb/MWhr) | 191.61 | CH4 Intensity (lb/MWhr) | 0.033 | N2O Intensity (lb/MWhr) | 0.004 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project-specific values (RPS emission factor)

Land Use - Project-specific values

Construction Phase - Operational run

Off-road Equipment - Operational run

Vehicle Trips - Project-specific values, mobile emissions calculated separately

Consumer Products - Updated emission factor for consumer products to refine the VOC emissions based on recent CARB regulations.

| Table Name | Column Name | Default Value | New Value |
|---------------------|-------------|---------------|-----------|
| tblConsumerProducts | ROG_EF | 2.14E-05 | 1.62E-05 |

Costco Fresno (Project) Operation - Fresno County, Annual

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

| | | | |
|---------------------------|----------------------------|--------|--------|
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 191.61 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | ST_TR | 23.72 | 0.00 |
| tblVehicleTrips | ST_TR | 53.75 | 0.00 |
| tblVehicleTrips | ST_TR | 182.17 | 0.00 |
| tblVehicleTrips | SU_TR | 11.88 | 0.00 |
| tblVehicleTrips | SU_TR | 33.67 | 0.00 |
| tblVehicleTrips | SU_TR | 166.88 | 0.00 |
| tblVehicleTrips | WD_TR | 23.72 | 0.00 |
| tblVehicleTrips | WD_TR | 41.80 | 0.00 |
| tblVehicleTrips | WD_TR | 172.01 | 0.00 |

2.0 Emissions Summary

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Maximum | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Maximum | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

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

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

Costco Fresno (Project) Operation - Fresno County, Annual

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

Highest

2.2 Overall Operational**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|-----------------|-----------------|----------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |
| Energy | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 330.8528 | 330.8528 | 0.0345 | 6.5300e-003 | 333.6620 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 217.9149 | 0.0000 | 217.9149 | 12.8784 | 0.0000 | 539.8748 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.9496 | 12.3158 | 18.2653 | 0.6132 | 0.0147 | 37.9717 |
| Total | 0.9616 | 0.1351 | 0.1241 | 8.1000e-004 | 0.0000 | 0.0103 | 0.0103 | 0.0000 | 0.0103 | 0.0103 | 223.8644 | 343.1895 | 567.0539 | 13.5261 | 0.0212 | 911.5307 |

Costco Fresno (Project) Operation - Fresno County, Annual

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

2.2 Overall Operational

Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|-----------------|-----------------|----------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |
| Energy | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 330.8528 | 330.8528 | 0.0345 | 6.5300e-003 | 333.6620 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 217.9149 | 0.0000 | 217.9149 | 12.8784 | 0.0000 | 539.8748 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.9496 | 12.3158 | 18.2653 | 0.6132 | 0.0147 | 37.9717 |
| Total | 0.9616 | 0.1351 | 0.1241 | 8.1000e-004 | 0.0000 | 0.0103 | 0.0103 | 0.0000 | 0.0103 | 0.0103 | 223.8644 | 343.1895 | 567.0539 | 13.5261 | 0.0212 | 911.5307 |

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

3.0 Construction Detail

Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|------------|------------|------------|-----------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 4/1/2023 | 4/30/2023 | 5 | 20 | |

Acres of Grading (Site Preparation Phase): 0

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Acres of Grading (Grading Phase): 0****Acres of Paving: 8****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|------------|--------------------------|--------|-------------|-------------|-------------|
| Demolition | Concrete/Industrial Saws | 0 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 0 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |

Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition | 0 | 0.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2023****Mitigated Construction On-Site**

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

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.1 Mitigation Measures Mobile**

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

4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|--------------------------|-------------------------|----------|--------|-------------|------------|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 0.00 | 0.00 | 0.00 | | |
| Discount Club | 0.00 | 0.00 | 0.00 | | |
| Gasoline/Service Station | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|--------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Automobile Care Center | 14.70 | 6.60 | 6.60 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Discount Club | 14.70 | 6.60 | 6.60 | 16.70 | 64.30 | 19.00 | 45 | 40 | 15 |
| Gasoline/Service Station | 14.70 | 6.60 | 6.60 | 2.00 | 79.00 | 19.00 | 14 | 27 | 59 |
| Parking Lot | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**4.4 Fleet Mix**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Automobile Care Center | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Discount Club | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Gasoline/Service Station | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |
| Parking Lot | 0.510058 | 0.053037 | 0.175964 | 0.161396 | 0.026773 | 0.007006 | 0.013819 | 0.022114 | 0.000717 | 0.000291 | 0.024206 | 0.001529 | 0.003090 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|----------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 183.9160 | 183.9160 | 0.0317 | 3.8400e-003 | 185.8520 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 183.9160 | 183.9160 | 0.0317 | 3.8400e-003 | 185.8520 |
| NaturalGas Mitigated | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 146.9368 | 146.9368 | 2.8200e-003 | 2.6900e-003 | 147.8100 |
| NaturalGas Unmitigated | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 146.9368 | 146.9368 | 2.8200e-003 | 2.6900e-003 | 147.8100 |

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Automobile Care Center | 99360 | 5.4000e-004 | 4.8700e-003 | 4.0900e-003 | 3.0000e-005 | | 3.7000e-004 | 3.7000e-004 | | 3.7000e-004 | 3.7000e-004 | 0.0000 | 5.3022 | 5.3022 | 1.0000e-004 | 1.0000e-004 | 5.3337 |
| Discount Club | 2.56062e+006 | 0.0138 | 0.1255 | 0.1054 | 7.5000e-004 | | 9.5400e-003 | 9.5400e-003 | | 9.5400e-003 | 9.5400e-003 | 0.0000 | 136.6443 | 136.6443 | 2.6200e-003 | 2.5100e-003 | 137.4563 |
| Gasoline/Service Station | 93514.3 | 5.0000e-004 | 4.5800e-003 | 3.8500e-003 | 3.0000e-005 | | 3.5000e-004 | 3.5000e-004 | | 3.5000e-004 | 3.5000e-004 | 0.0000 | 4.9903 | 4.9903 | 1.0000e-004 | 9.0000e-005 | 5.0199 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 146.9368 | 146.9368 | 2.8200e-003 | 2.7000e-003 | 147.8100 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Automobile Care Center | 99360 | 5.4000e-004 | 4.8700e-003 | 4.0900e-003 | 3.0000e-005 | | 3.7000e-004 | 3.7000e-004 | | 3.7000e-004 | 3.7000e-004 | 0.0000 | 5.3022 | 5.3022 | 1.0000e-004 | 1.0000e-004 | 5.3337 |
| Discount Club | 2.56062e+006 | 0.0138 | 0.1255 | 0.1054 | 7.5000e-004 | | 9.5400e-003 | 9.5400e-003 | | 9.5400e-003 | 9.5400e-003 | 0.0000 | 136.6443 | 136.6443 | 2.6200e-003 | 2.5100e-003 | 137.4563 |
| Gasoline/Service Station | 93514.3 | 5.0000e-004 | 4.5800e-003 | 3.8500e-003 | 3.0000e-005 | | 3.5000e-004 | 3.5000e-004 | | 3.5000e-004 | 3.5000e-004 | 0.0000 | 4.9903 | 4.9903 | 1.0000e-004 | 9.0000e-005 | 5.0199 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0149 | 0.1350 | 0.1134 | 8.1000e-004 | | 0.0103 | 0.0103 | | 0.0103 | 0.0103 | 0.0000 | 146.9368 | 146.9368 | 2.8200e-003 | 2.7000e-003 | 147.8100 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 41328 | 3.5919 | 6.2000e-004 | 7.0000e-005 | 3.6297 |
| Discount Club | 1.91141e+006 | 166.1263 | 0.0286 | 3.4700e-003 | 167.8751 |
| Gasoline/Service Station | 38896.5 | 3.3806 | 5.8000e-004 | 7.0000e-005 | 3.4162 |
| Parking Lot | 124460 | 10.8172 | 1.8600e-003 | 2.3000e-004 | 10.9310 |
| Total | | 183.9160 | 0.0317 | 3.8400e-003 | 185.8520 |

Costco Fresno (Project) Operation - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 41328 | 3.5919 | 6.2000e-004 | 7.0000e-005 | 3.6297 |
| Discount Club | 1.91141e+006 | 166.1263 | 0.0286 | 3.4700e-003 | 167.8751 |
| Gasoline/Service Station | 38896.5 | 3.3806 | 5.8000e-004 | 7.0000e-005 | 3.4162 |
| Parking Lot | 124460 | 10.8172 | 1.8600e-003 | 2.3000e-004 | 10.9310 |
| Total | | 183.9160 | 0.0317 | 3.8400e-003 | 185.8520 |

6.0 Area Detail**6.1 Mitigation Measures Area**

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|-------------|--------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |
| Unmitigated | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |

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 | 0.1817 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.7641 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 9.9000e-004 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |
| Total | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |

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

6.2 Area by SubCategory

Mitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1817 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.7641 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 9.9000e-004 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |
| Total | 0.9467 | 1.0000e-004 | 0.0107 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0209 | 0.0209 | 5.0000e-005 | 0.0000 | 0.0222 |

7.0 Water Detail

7.1 Mitigation Measures Water

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

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|---------|
| Category | MT/yr | | | |
| Mitigated | 18.2653 | 0.6132 | 0.0147 | 37.9717 |
| Unmitigated | 18.2653 | 0.6132 | 0.0147 | 37.9717 |

7.2 Water by Land Use**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|---------------------|----------------|---------------|---------------|----------------|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0.451589 / 0.276781 | 0.4398 | 0.0148 | 3.5000e-004 | 0.9144 |
| Discount Club | 17.8767 / 10.9567 | 17.4115 | 0.5845 | 0.0140 | 36.1967 |
| Gasoline/Service Station | 0.42502 / 0.260496 | 0.4140 | 0.0139 | 3.3000e-004 | 0.8606 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 18.2653 | 0.6132 | 0.0147 | 37.9717 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|---------------------|----------------|---------------|---------------|----------------|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0.451589 / 0.276781 | 0.4398 | 0.0148 | 3.5000e-004 | 0.9144 |
| Discount Club | 17.8767 / 10.9567 | 17.4115 | 0.5845 | 0.0140 | 36.1967 |
| Gasoline/Service Station | 0.42502 / 0.260496 | 0.4140 | 0.0139 | 3.3000e-004 | 0.8606 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 18.2653 | 0.6132 | 0.0147 | 37.9717 |

8.0 Waste Detail**8.1 Mitigation Measures Waste**

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

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|---------|--------|----------|
| | MT/yr | | | |
| Mitigated | 217.9149 | 12.8784 | 0.0000 | 539.8748 |
| Unmitigated | 217.9149 | 12.8784 | 0.0000 | 539.8748 |

8.2 Waste by Land Use**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 18.34 | 3.7229 | 0.2200 | 0.0000 | 9.2232 |
| Discount Club | 1037.93 | 210.6904 | 12.4515 | 0.0000 | 521.9766 |
| Gasoline/Service Station | 17.25 | 3.5016 | 0.2069 | 0.0000 | 8.6751 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 217.9149 | 12.8784 | 0.0000 | 539.8748 |

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 18.34 | 3.7229 | 0.2200 | 0.0000 | 9.2232 |
| Discount Club | 1037.93 | 210.6904 | 12.4515 | 0.0000 | 521.9766 |
| Gasoline/Service Station | 17.25 | 3.5016 | 0.2069 | 0.0000 | 8.6751 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 217.9149 | 12.8784 | 0.0000 | 539.8748 |

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

Costco Fresno (Project) Operation - Fresno County, Annual

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

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

11.0 Vegetation

APPENDIX B

STATE AND LOCAL CONSISTENCY ANALYSES

Table B-1. Consistency with Applicable State Renewable Energy and Energy Efficiency Strategies

Costco Commercial Center
Fresno, California

| # | Plan | Category Description | Consistency Analysis |
|-----------------------|--|--|---|
| 1 | California Renewables Portfolio Standard (RPS) and SB 100 | As most recently amended by SB 100 (2018), California's RPS increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020; 50 percent renewable power by 2026; and, 60 percent renewable power by 2030. SB 350 (2015) also requires the State Energy Resources Conservation and Development Commission to double (by 2030) the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation. | Consistent. The Project would be consistent with and not impair implementation of the state's RPS. The electricity for the operation of the Project would be supplied by Pacific Gas & Electric, which is composed of 30% renewable resources as of 2020. |
| 2 | California Code of Regulations, Title 24, Part 6 | Title 24, Part 6 of the California Code of Regulations establishes energy and water efficiency requirements for residential and non-residential new construction, additions to existing buildings, and alterations to existing buildings. Standards include requirements for water heating, HVAC, lighting, electrical systems, and solar design. | Consistent. The Project would meet or exceed the Title 24 energy efficiency standards in effect at the time of building permit application. |
| 3 | Assembly Bill 1109 | The Lighting Efficiency And Toxics Reduction Act (AB 1109) requires a reduction in average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018. | Consistent. The Project would meet the applicable requirements from AB 1109. |
| 4 | California Green (CalGreen) Building Standards Code Requirements | CalGreen establishes green building standards to meet the goals of AB 32. CalGreen includes standards for residential and nonresidential structures such as new buildings or portions of new buildings, additions and alterations, and all occupancies where no other state agency has the authority to adopt green building standards applicable to those occupancies. Standards include requirements for site development, indoor and outdoor water use, construction waste reduction, disposal and recycling and building maintenance and operation. | Consistent. To the extent applicable to the Project, the Project would meet the CalGreen Building Standards Code in effect at the time of building permit application. |
| Mobile Sources | | | |
| 5 | AB 1493 (Pavley Regulations) | Reduces GHG emissions in new passenger vehicles from model years 2012-2016 (Phase I) and model years 2017-2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020. | Consistent. The Project would not impair implementation of the AB 1493 regulations. |
| 6 | Low Carbon Fuel Standard (LCFS) | Establishes protocols for measuring and reducing the life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels. | Consistent. The Project would not conflict with implementation of the LCFS. |
| 7 | Advanced Clean Cars (ACC) Program | In 2012, the California Air Resources Board (CARB) adopted the ACC program to reduce criteria pollutant emissions and GHG emissions for model year vehicles 2015 through 2025. ACC includes the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulations that require manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years. | Consistent. The Project would not conflict with implementation of the ACC program. |
| 8 | SB 375 | SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. | Consistent. The Project would not conflict with the implementation of SB 375. Furthermore, the Project would be consistent with the goals of the Fresno Council of Government's (Fresno COG's) Regional Transportation Plan/Sustainable Communities Strategy, which demonstrates how the Fresno region under Fresno COG's jurisdiction will meet the emission reduction targets of SB 375. |

Abbreviations:

AB - Assembly Bill

CalGreen - California Green Building Standards Code

RPS - Renewable Portfolio Standard

SB - Senate Bill

Table B-2. Consistency with Applicable City of Fresno Renewable Energy and Energy Efficiency Strategies

Costco Commercial Center
Fresno, California

| # | Category | General Plan Policy or Objective | Category Description | Consistency Analysis |
|----|--------------------------------|---|--|---|
| 2b | Electric Vehicle Strategies | RC-8-j: Alternative Fuel Network. Support the development of a network of integrated charging and alternate fuel station for both public and private vehicles, and if feasible, open up municipal stations to the public as part of network development. | For new commercial buildings, does project provide EV charging spaces capable of supporting EV capable spaces at 4% to 10% of the parking spaces per 2019 California Green Building Standards Code (CALGREEN, Title 24, Part 11), Section 5.106.5.3 | Consistent. The Project would be consistent with this code with 45 installed EV spaces, which is 5% of the parking spaces at the site. |
| 3a | Energy Conservation Strategies | RC-5-c: GHG Reduction through Design and Operations. Increase efforts to incorporate requirements for GHG emission reductions in land use entitlement decisions, facility design, and operational measures subject to City regulation. | Does the project meet or exceed mandatory state building energy codes? If yes, does the project follow any other GreenPoint ratings such as LEED, Energy Star or others? If yes, indicate level of certification-Silver, gold, platinum if applicable? | Consistent. The Project would be consistent with this by meeting mandatory building energy codes. Costco's warehouse designs are consistent with the requirements of LEED. |
| | | Objective RC-8: Reduce the consumption of non-renewable energy resources by requiring and encouraging conservation measures and the use of alternative energy sources. | | |
| | | RC-8-a: Existing Standards and Programs. Continue existing beneficial energy conservation programs, including adhering to the California Energy Code in new construction and major renovations. | | |

Abbreviations:

AB - Assembly Bill

CalGreen - California Green Building Standards Code

EV - electric vehicle

GHG - greenhouse gas

LEED - Leadership in Energy and Environmental Design