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October 12, 2020

Mr. Steve Galvez
Jurupa Valley 18 LP
31938 Temecula Parkway Suite A369
Temecula, CA 92592

Subject: Jurupa Valley Storage– CEQA Energy Review, City of Jurupa Valley, CA

Dear Mr. Salem:

MD Acoustics, LLC (MD) has completed a CEQA energy review for the proposed Jurupa Valley Storage located east of the Interstate 15 freeway between 68th Street and River Drive in Jurupa Valley, California. The project proposes to develop approximately 6.2 acres with an 188,024 square foot self-storage facility. The facility would include approximately 1,399 square feet of office space, 1,594 square feet of apartment, and 185,031 square feet of self-storage use.[1]

1.0 Existing Energy Conditions

Overview

California's estimated annual energy use as of 2019 included:

- Approximately 277,704 gigawatt hours of electricity;[2]
- Approximately 2,136,907 million cubic feet of natural gas per year (for the year 2018)[3]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015)[4].

As of 2018, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.8 percent transportation;
- Approximately 23.2 percent industrial;
- Approximately 18.1 percent residential; and

[1] Per the Jurupa Valley Air Quality and Greenhouse Gas Impact Study (air quality and greenhouse gas analysis) prepared for the proposed project by MD (October 7, 2020), the proposed project is anticipated to be built in two phases. Phase 1 is to include 141,722 square feet of self-storage facility with the remaining approximately 46,302 square feet being that of recreational vehicle (RV) storage spaces. Phase 2 of the proposed project would convert the 46,302 square feet of RV Spaces into another self-storage facility building. As the total storage facility use square footage remains the same in each phase of the proposed project (RV Spaces converted to self-storage building of same size in Phase 2), the air quality and greenhouse gas analysis only modeled the buildout (Phase 2) square footage and uses as it shows the worst-case construction and operational emissions. The buildout (Phase 2) would also show the worst-case energy use for the proposed project and this Energy analysis utilizes the data provided in the air quality and greenhouse gas analysis.

[2] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2020. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation.

[3] Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] August 31, 20020. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

[4] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/

- Approximately 18.9 percent commercial.[5]

California's electricity in-state generation system generates approximately 200,475 gigawatt-hours each year. In 2019, California produced approximately 72 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 9 percent) and the U.S. Southwest (approximately 19 percent). Natural gas is the main source for electricity generation at approximately 42.97 percent of the total in-state electric generation system power as shown in Table 1 below.

Table 1: Total Electricity System Power (California 2019)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	Total California Energy Mix (GWh)	Total California Power Mix
Coal	248	0.12%	219	7,765	7,985	10.34%	8,233	2.96%
Natural Gas	86,136	42.97%	62	8,859	8,921	11.55%	95,057	34.23%
Nuclear	16,163	8.06%	39	8,743	8,782	11.37%	24,945	8.98%
Oil	36	0.02%	0	0	0	0.00%	36	0.01%
Other (Petroleum Coke/Waste Heat)	411	0.20%	0	11	11	0.01%	422	0.15%
Large Hydro	33,145	16.53%	6,387	1,071	7,458	9.66%	40,603	14.62%
Unspecified Sources of Power	0	0.00%	6,609	13,767	20,376	26.38%	20,376	7.34%
Renewables	64,336	32.09%	10,615	13,081	23,696	30.68%	88,032	31.70%
Biomass	5,851	2.92%	903	33	936	1.21%	6,787	2.44%
Geothermal	10,943	5.46%	99	2,218	2,318	3.00%	13,260	4.77%
Small Hydro	5,349	2.67%	292	4	296	0.38%	5,646	2.03%
Solar	28,513	14.22%	282	5,295	5,577	7.22%	34,090	12.28%
Wind	13,680	6.82%	9,038	5,531	14,569	18.87%	28,249	10.17%
Total	200,475	100.00%	23,930	53,299	77,229	100.00%	277,704	100.00%

Notes:
[1] Source: California Energy Commission. 2019 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel among the 50 states and accounted for one-fifth of the nation's jet fuel consumption in 2018.

[5]U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] January 16, 2020 https://www.eia.gov/state/?sid=CA#tabs-2

- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation.
- In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California's net electricity generation[6].

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nations most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons, within a service area encompassing approximately 50,000 square miles.[7] SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers.[8] Table 2 identifies SCE's specific proportional shares of electricity sources in 2018.

Table 2: SCE 2018 Power Content Mix

Energy Resources	2018 SCE Power Mix
Eligible Renewable	36%
Biomass & Waste	1%
Geothermal	8%
Small Hydroelectric	1%
Solar	13%
Wind	13%
Coal	0%
Large Hydroelectric	4%
Natural Gas	17%
Nuclear	6%
Other	0%
Unspecified Sources of power*	37%
Total	100%

Notes:
[1] https://www.energy.ca.gov/sites/default/files/2020-01/2018_PCL_Southern_California_Edison.pdf
*Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Natural Gas

[6] State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020.] http://www.eia.gov/state/?sid=CA#tabs2.
[7] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory
[8] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[9]

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available (2016) shows the transportation sector emits 41 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[10,11] Petroleum comprises about 92 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[12]

2.0 Regulatory Background

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy,

[9] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/
[10] CARB. California Greenhouse Gas Emissions Inventory – 2018 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm
[11] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA
[12] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation

and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[13]

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

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

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

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and

[13] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The recently-approved 2017 Integrated Energy Policy Report Updated (2017 IEPR) was published in April 2018, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.[14]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California Building Standards Code (Title 24)

<u>California Building Energy Efficiency Standards (Title 24, Part 6)</u>

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating

[14] California Energy Commission. Final 2017 Integrated Energy Policy Report. April 16, 2018. https://www.energy.ca.gov/2017_energypolicy/

specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

The Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges. HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Assembly Bill 32

In 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective.

Assembly Bill 1493/Pavley Regulations

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025. The components of the Advanced Clean Cars program include 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) regulation, which requires 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.[15]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NO_X) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan

[15] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

3.0 Evaluation Criteria and Methodology

Evaluation Criteria

<u>CEQA Guidelines for Energy</u>

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on energy resources, the type, level, and impact of energy use by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on January 1, 2019. A significant impact would occur if the project would:

(a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation; or

(b) Conflict with or obstruct a state local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2016.3.2 Daily and Annual Outputs contained in Jurupa Valley Air Quality and Greenhouse Gas Impact Study (air quality and greenhouse gas analysis) prepared for the proposed project by MD (October 7, 2020), was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

4.0 Energy Review

Construction Energy Demand

The construction schedule is anticipated to occur between December 2021 and March 2022 and be completed in one phase.[16] Staging of construction vehicles and equipment will occur on-site.

Construction Equipment Electricity Usage Estimates

As stated previously, electrical service will be provided by the SCE. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[17], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with an 188,024 square foot self-storage facility on approximately 6.2 acres over the course of approximately four months. Based on Table 3, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $1,744.86. Furthermore, as of April 13, 2020, SCE's general service rate schedule (GS-1) is approximately $0.09 per kWh of electricity.[18] As shown in Table 3, the total electricity usage from Project construction related activities is estimated to be approximately 19,387 kWh.

Table 3: Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	188.024	4	$1,744.86

Cost per kWh	Total Project Construction Electricity Usage (kWh)
$0.09	19,387

*Assumes the project will be under the GS-1 General Service rate under SCE.

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of approximately 4 months
- All construction equipment was assumed to run on diesel fuel

[16] As stated in the air quality and greenhouse gas analysis, in order to be consistent with the TIA's opening year of 2020 and the project applicant's construction timeline of approximately five months, project construction was modeled as beginning mid-July 2020 and ending mid-December 2020. Although this construction start date has passed, this represents a more conservative worst-case analysis as emissions generally get cleaner over time due compliance with regulations etc.

[17] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

[18] Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doclib/public/regulatory/historical/electric/2020/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1_2020.pdf

- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input from the air quality and greenhouse gas analysis (MD Acoustics 2020), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2013 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 4 shows the results of the analysis of construction equipment.

Table 4: Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Grading	20	Excavators	1	8	158	0.38	480	519
	20	Graders	1	8	187	0.41	613	663
	20	Rubber Tired Dozers	1	8	247	0.4	790	854
	20	Tractors/Loaders/Backhoes	3	8	97	0.37	861	931
Building Construction	63	Cranes	2	7	231	0.29	938	3,194
	63	Forklifts	5	8	89	0.2	712	2,425
	63	Generator Sets	2	8	84	0.74	995	3,387
	63	Tractors/Loaders/Backhoes	5	7	97	0.37	1,256	4,278
	63	Welders	2	8	46	0.45	331	1,128
Paving	20	Pavers	2	8	130	0.42	874	944
	20	Paving Equipment	2	8	132	0.36	760	822
	20	Rollers	2	8	80	0.38	486	526
Architectural Coating	20	Air Compressors	1	6	78	0.48	225	243
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**19,914**

Notes:
[1]Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

As presented in Table 4, project construction activities would consume an estimated 19,914 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 119,717 VMT.

Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analysis (MD Acoustics 2020) using information generated using CARB's 2017 EMFAC model (see Appendix A for details). An aggregate fuel efficiency of 30.13 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 5 shows that an estimated 3,819 gallons of fuel would be consumed for construction worker trips.

Table 5: Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	20	15	14.7	4,410	30.13	146
Building Construction	63	114	14.7	105,575	30.13	3,504
Paving	20	15	14.7	4,410	30.13	146
Architectural Coating	2	23	14.7	676	30.13	22
Total Construction Worker Fuel Consumption						**3,819**

Notes:
[1]Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Construction Vendor/Hauling Fuel Estimates

Tables 6 and 7 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 19,562 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 8.93 mpg for medium heavy duty trucks and 6.51 for heavy heavy duty trucks (see Appendix A for details). Tables 6 and 7 show that an estimated 2,191 gallons of fuel would be consumed for vendor and hauling trips.

Table 6: Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	20	0	6.9	0	8.93	0
Building Construction	63	45	6.9	19,562	8.93	2,191
Paving	20	0	6.9	0	8.93	0
Architectural Coating	20	0	6.9	0	8.93	0
Total Construction Worker Fuel Consumption						**2,191**

Notes:
[1] Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 7: Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	20	0	20	0	6.51	0
Building Construction	63	0	20	0	6.51	0
Paving	20	0	20	0	6.51	0
Architectural Coating	20	0	20	0	6.51	0
Total Construction Worker Fuel Consumption						**0**

Notes:
[1]Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately eight-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Operation Energy Demand

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of customers. The site is located is in an urbanized area at the east of the Interstate 15 freeway between 68th Street and River Drive in the City of Jurupa Valley. Furthermore, there are existing transit services, provided by RTA, approximately 0.49 mile walking distance of the proposed Project site. The nearest transit service is Riverside Transit Route 3, with a stop along 68th Street at Moon River.

Using the CalEEMod output from the air quality and greenhouse gas analysis (MD Acoustics 2020), it is assumed that an average trip for autos and light trucks was assumed to be 16.6 miles and 3- 4-axle trucks were assumed to travel an average of 6.9 miles[19]. In order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 20 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[20]

The proposed project would generate approximately 284 trips per day.[21] The vehicle fleet mix was used from the CalEEMod output from the air quality and greenhouse gas analysis (MD Acoustics 2020). Table 8 shows that an estimated 69,720 gallons of fuel would be consumed per year for the operation of the proposed project.

Table 8: Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	155	16.6	2,573	30.95	83.13	30,344
Light Truck	Automobile	11	16.6	183	26.47	6.90	2,518
Light Truck	Automobile	53	16.6	880	24.72	35.59	12,991
Medium Truck	Automobile	33	6.9	228	5.97	38.14	13,921
Light Heavy Truck	2-Axle Truck	4	6.9	28	13.53	2.04	745
Light Heavy Truck 10,000 lbs +	2-Axle Truck	2	6.9	14	13.88	0.99	363
Medium Heavy Truck	3-Axle Truck	5	6.9	35	9.22	3.74	1,366
Heavy Heavy Truck	4-Axle Truck	20	6.9	138	6.74	20.47	7,473
Total		284	284	--	4,077	16.44	191.01
Total Annual Fuel Consumption							**69,720**

Notes:
[1]Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by SCE) and natural gas (provided by Southern California Gas Company). Operation of the proposed project would involve the use of energy for heating, cooling and equipment operation. These facilities would comply with all applicable California Energy Efficiency Standards and 2019 CALGreen Standards.

[19] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-O (home-other) or C-O (commercial-other).
[20] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2020). See Appendix A for EMFAC output.
[21] As stated in the air quality and greenhouse gas analysis prepared for the proposed project, the proposed project does not have a project-specific Traffic Impact Analysis. Per other similar self-storage facilities, the vehicle trips associated with the proposed project are based upon the ITE 10th Trip Generation Manual for land use code 151 Mini-Warehouse. The trip generation rate used is 1.51 trips per thousand square foot, which would equate to the project generating a total of approximately 284 vehicle trips per day.

The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analysis (MD Acoustics 2020) and are provided in Table 9.

Table 9: Project Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Unrefrigerated Warehouse - No Rail	381,689
Total	381,689

Electricity Demand	kWh/year
Unrefrigerated Warehouse - No Rail	443,737.0
Total	443,737

Notes:
[1] Taken from the CalEEMod 2016.3.2 annual output in Jurupa Valley Storage Air Quality and Greenhouse Gas Impact Study prepared for the proposed project by MD Acoustics (October 7, 2020).
[2] Per the Jurupa Valley Storage Air Quality and Greenhouse Gas Impact Study, CalEEMod does not have a self-storage facility land use in its database. Therefore, per other similar projects, the self-storage use was modeled as Unrefrigerated Warehouse – No Rail (ITE 152).

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or “plug-in” energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State’s Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by the SCE and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State’s Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in the air quality and greenhouse gas analysis (MD Acoustics 2020), the proposed project would be consistent with both the Western Riverside Council of Governments (WRCOG) Subregional Climate Action Plan (WRCOG Subregional CAP) and the CARB Climate Change Scoping Plan.

5.0 Conclusions

As supported by the preceding analyses, neither construction nor operation of the Project would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. Therefore, impacts related to wasteful energy use would be less than significant. Further, the energy demands of the project can be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California.

The Project has been designed in compliance with California's Energy Efficiency Standards and 2019 CALGreen Standards. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

MD is pleased to provide this CEQA Energy review. If you have any questions regarding this analysis, please don't hesitate to call us at (805) 426-4477.

Sincerely,
MD Acoustics, LLC

Mike Dickerson

Mike Dickerson, INCE
Principal

Appendix A

CARB EMFAC 2017

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2021	HHDT	Aggregate	Aggregate	Gasoline	81.3725634	1628.102	1.889707176	1889.707176	1776086.603	7629.442554	11553449.42	6.51	HHD
South Coast	2021	HHDT	Aggregate	Aggregate	Diesel	96726.9495	974405.7	1774.196896	1774196.896		11545819.98			
South Coast	2021	LDA	Aggregate	Aggregate	Gasoline	6276233.77	29647186	8195.759914	8195759.914	8241884.504	246181276.2	248366515	30.13	LDA
South Coast	2021	LDA	Aggregate	Aggregate	Diesel	53709.9025	254840.1	46.1245898	46124.5898		2185238.836			
South Coast	2021	LDA	Aggregate	Aggregate	Electricity	105013.549	525424.1	0	0		4192834.836			
South Coast	2021	LDT1	Aggregate	Aggregate	Gasoline	695145.897	3200417	1009.571346	1009571.346	1009999.543	26066042.38	26075562.75	25.82	LDT1
South Coast	2021	LDT1	Aggregate	Aggregate	Diesel	406.399031	1419.826	0.42819713	428.1971296		9520.378718			
South Coast	2021	LDT1	Aggregate	Aggregate	Electricity	3691.83415	18421.42	0	0		147589.5362			
South Coast	2021	LDT2	Aggregate	Aggregate	Gasoline	2144804.15	10052342	3441.716707	3441716.707	3457561.278	81991235.59	82539629.16	23.87	LDT2
South Coast	2021	LDT2	Aggregate	Aggregate	Diesel	12472.425	61718.11	15.84457068	15844.57068		548393.5724			
South Coast	2021	LDT2	Aggregate	Aggregate	Electricity	16651.9689	84424.2	0	0		552985.8715			
South Coast	2021	LHDT1	Aggregate	Aggregate	Gasoline	172430.216	2568953	598.0686059	598068.6059	809349.9359	6230805.225	10720475.04	13.25	LHDT1
South Coast	2021	LHDT1	Aggregate	Aggregate	Diesel	109610.028	1378756	211.28133	211281.33		4489669.812			
South Coast	2021	LHDT2	Aggregate	Aggregate	Gasoline	28913.8178	430772.8	111.7961286	111796.1286	201931.6877	1014315.328	2744944.158	13.59	LHDT2
South Coast	2021	LHDT2	Aggregate	Aggregate	Diesel	43242.2337	543932.9	90.13555911	90135.55911		1730628.83			
South Coast	2021	MCY	Aggregate	Aggregate	Gasoline	279209.361	558418.7	53.89538804	53895.38804	53895.38804	1958676.919	1958676.919	36.34	MCY
South Coast	2021	MDV	Aggregate	Aggregate	Gasoline	1520877.3	7026646	2808.57758	2808577.58	2854598.975	54421172.7	55643285	19.49	MDV
South Coast	2021	MDV	Aggregate	Aggregate	Diesel	29603.6659	145604.8	46.02139556	46021.39556		1222112.304			
South Coast	2021	MDV	Aggregate	Aggregate	Electricity	7250.17223	37174.04	0	0		249429.9943			
South Coast	2021	MH	Aggregate	Aggregate	Gasoline	34556.2813	3457.01	64.51935527	64519.35527	75563.3084	327720.8034	443086.5288	5.86	MH
South Coast	2021	MH	Aggregate	Aggregate	Diesel	11829.1715	1182.917	11.04395313	11043.95313		115365.7253			
South Coast	2021	MHDT	Aggregate	Aggregate	Gasoline	24683.6081	493869.6	264.5056072	264505.6072	991967.8223	1325210.138	8860357.635	8.93	MHDT
South Coast	2021	MHDT	Aggregate	Aggregate	Diesel	119075.286	1192855	727.4622151	727462.2151		7535147.497			
South Coast	2021	OBUS	Aggregate	Aggregate	Gasoline	5845.39061	116954.6	49.57947234	49579.47234	87256.58216	246477.18	555364.3745	6.36	OBUS
South Coast	2021	OBUS	Aggregate	Aggregate	Diesel	4131.13499	40389.68	37.67710982	37677.10982		308887.1946			
South Coast	2021	SBUS	Aggregate	Aggregate	Gasoline	2414.92674	9659.707	10.85210767	10852.10767	37379.67328	98099.38663	297576.5962	7.96	SBUS
South Coast	2021	SBUS	Aggregate	Aggregate	Diesel	6314.06403	72863.42	26.52756561	26527.56561		199477.2096			
South Coast	2021	UBUS	Aggregate	Aggregate	Gasoline	943.967838	3775.871	18.45610299	18456.10299	18702.89919	88729.36464	90207.45032	4.82	UBUS
South Coast	2021	UBUS	Aggregate	Aggregate	Diesel	14.1414183	56.56567	0.246796198	246.7961984		1478.085683			
South Coast	2021	UBUS	Aggregate	Aggregate	Electricity	12.1169389	48.46776	0			1072.906717			

Source: https://arb.ca.gov/emfac/emissions-inventory

Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Ca	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Gasoline	77.82251	1557.073	1.914672095	1914.672095	1984478.157	7970.981	13381402.09	**6.74**	HHD
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Diesel	108362	1118617	1982.563485	1982563.485		13373431			
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Gasoline	6542832	30915701	8178.144259	8178144.259	8226568.36	2.52E+08	254602375.4	**30.95**	LDA
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Diesel	58937.5	279973.4	48.42410045	48424.10045		2358230			
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Electricity	127532.6	637025.4	0	0		5177709			
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Gasoline	736905.6	3399512	1031.447408	1031447.408	1031847.287	27300896	27309932.68	**26.47**	LDT1
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Diesel	387.1571	1348.408	0.39987912	399.8791198		9037.122			
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Electricity	5339.042	26794.47	0	0		221507.4			
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Gasoline	2246303	10535910	3436.155557	3436155.557	3453207.618	84740129	85348125.78	**24.72**	LDT2
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Diesel	14234.59	70193.22	17.05206088	17052.06088		607996.5			
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Electricity	22589.96	114302.6	0	0		734756.1			
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Gasoline	175903.1	2620694	598.0685493	598068.5493	821513.5103	6298251	11115258.37	**13.53**	LHDT1
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Diesel	119380.7	1501659	223.444961	223444.961		4817007			
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Gasoline	30009.92	447103.1	113.5150695	113515.0695	209067.0531	1040649	2902289.397	**13.88**	LHDT2
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Diesel	47335.63	595422.7	95.55198358	95551.98358		1861640			
South Coast AQMD	2022	MCY	Aggregate	Aggregate	Gasoline	295960.1	591920.2	56.92214589	56922.14589	56922.14589	2072370	2072370.126	**36.41**	MCY
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Gasoline	1579640	7302407	2793.799561	2793799.561	2842944.316	55888916	57233722.8	**20.13**	MDV
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Diesel	33348.92	163526.3	49.14475473	49144.75473		1344806			
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Electricity	11658.48	59625.3	0	0		391944.3			
South Coast AQMD	2022	MH	Aggregate	Aggregate	Gasoline	35097.75	3511.179	64.70410395	64704.10395	76270.38211	333282.4	455641.5746	**5.97**	MH
South Coast AQMD	2022	MH	Aggregate	Aggregate	Diesel	12758.81	1275.881	11.56627815	11566.27815		122359.2			
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Gasoline	25445.41	509111.8	269.2842176	269284.2176	1009568.488	1367743	9307083.084	**9.22**	MHDT
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Diesel	123310	1231988	740.28427	740284.27		7939340			
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Gasoline	5959.443	119236.5	49.67589796	49675.89796	88138.04214	250653.5	576603.5972	**6.54**	OBUS
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Diesel	4274.499	41607.39	38.46214418	38462.14418		325950.1			
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Gasoline	2630.829	10523.32	11.7605267	11760.5267	39328.1885	107369.8	316915.9173	**8.06**	SBUS
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Diesel	6631.313	76524.43	27.5676618	27567.6618		209546.1			
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Gasoline	952.146	3808.584	18.40085629	18400.85629	18647.65249	89256	90734.08386	**4.87**	UBUS
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Diesel	14.14142	56.56567	0.246796198	246.7961984		1478.086			
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Electricity	17.11694	68.46776	0			1343.185			