

APPENDIX E

Energy Assessment

MEMORANDUM

To: Meghan Karadimos, Kimley-Horn and Associates
From: Olivia Chan, Kimley-Horn and Associates
Date: May 3, 2023
Subject: Sierra Distribution Facility – Energy Assessment

1.0 Purpose

The purpose of this technical memorandum is to evaluate potential short- and long-term energy consumption impacts of the Sierra Distribution Facility Project (Project). The purpose of this Energy Technical Memorandum is to evaluate the potential construction and operational energy consumption associated with the Project and determine the level of impact the Project would have on the environment.

2.0 Project Location and Setting

The Project site is located in northern Fontana, in San Bernardino County (County). The Project site is comprised of six parcels (Assessor's Parcel Numbers [APNs]: 1119-241-10, -13, -18, -25, -26, and -27). The Project site is located at the northeast corner of the intersection of Sierra Avenue and Clubhouse Drive within the City and is bounded to the north and south by existing warehouse/industrial buildings, to the west by Sierra Avenue and residential development, and to the east by Mango Avenue and a landfill.

The Project site is bound to the west by Sierra Avenue, to the east by Mango Avenue, and Windflower Avenue enters the Project site from Sierra Avenue. The proposed Project site is presently developed with four commercial/industrial buildings ranging from 5,000 to 25,000 square feet in size. The northwestern quadrant is developed with one building and is utilized as a wooden pallet facility. The northeastern quadrant is developed with one building and is utilized as a carnival attraction repair facility with truck trailer parking. The southwestern quadrant is developed with one building and open-graded gravel pavements and is utilized for truck trailer storage. The southeastern quadrant is developed with one building and is utilized as a storage facility. The existing buildings are single-story, metal-framed structures and are assumed to be supported on conventional shallow foundations with concrete slab-on-grade floors. Ground surface cover consists mainly of open graded gravel and

exposed soil, with AC or PCC pavements surrounding the buildings. Little to no vegetation exists on site. Few large trees are present between the northwest and northeast quadrants.

According to available historical sources, the Project site was historically undeveloped vacant land as early as 1896 and was developed in phases from 1982 to 1990. The Project site was historically occupied by light industrial businesses including: All American Pipe & Steel Distribution; Days Express Inc.; Anderson Trucking Services; Apollo Amusement; San Gabriel Valley Lumber & Milling; S.J. Steel Inc.; Active Steel, Inc.; and National Pallets (1987-Present). The Project site is currently occupied by the following businesses:

1. San Gabriel Valley Lumber & Milling, 6075 Sierra Avenue. This portion of the Project site is located on the northwest and is used for manufacturing of wood molding and repair/ sale of wooden pallets. This property was developed in late 1980s and houses a metal structure and a mobile office.
2. 5975 Sierra Ave./ 16899 Windflower Avenue. This parcel is located on the southwest portion and is currently unoccupied. This property was last occupied by Anderson Trucking Services for storage and distribution of furniture & was developed in early 1980s and houses a metal structure.
3. Davis Partners, 17010 Windflower Avenue. This parcel is located on the northeast portion and is currently used for repair of carnival rides. This property was developed in the late 1980s and houses two attached metal structures.
4. Aluma Systems, 17051 Windflower Avenue. This parcel is located on the southeast portion and is currently used for repair and rent of steel and aluminum scaffolding. This property was developed in 1990 and houses a large metal structure. Two stormwater catch basins are present at this property.

1.2 Project Description

The Project involves the development of a 398,514-square foot¹ warehouse building within an approximately 18.3-acre site, with associated facilities and improvements including approximately 10,000 square feet of office space, vehicle parking, loading dock doors, trailer parking, onsite landscaping, and related onsite improvements. The Project would have a Floor Area Ratio (FAR) of 0.45 and can have a maximum FAR of 0.60. Future occupant(s) of the building are not known at this time.

¹ The analysis herein is based on trip generation for a total of 395,034 square feet. The nominal increase in proposed square footage would not result in appreciable increases in operational energy use.

The single building for the Project would maintain a typical height of 43 feet with a maximum height not to exceed 45.5 feet. The maximum building height allowed is approximately 75 feet. The building elevations would be articulated with varying depths of recesses with windows. The paint scheme includes a variable grey and white paint scheme to minimize the bulk and scale of the building with a decorative paint feature in the recesses along the side (east and west) and rear (north) elevations of the building. The dock doors (54) would be centered on the south side of the building.

Land Use and Zoning

The Project is consistent with the City's General Plan land use designation and the zoning. The Project site's industrial land use designation is I-L: Light Industrial and the zoning is M-1: Light Industrial. I-L: Light Industrial (0.1 to 0.6 FAR) allows for employee-intensive uses, including business parks, research and development, technology centers, corporate and support office uses, clean industry, supporting retail uses, truck and equipment sales and related services. Warehouses that are designed in ways that limit off-site impacts are also permitted.

General uses permitted (either by right, minor use permit, or conditional use permit) under the industrial zoning districts (Light Industrial [M-1]) includes manufacturing, food processing, service and repair, storage and open yards, warehousing uses, retail sales, restaurants and bars, administrative and professional offices, educational, and miscellaneous uses.

Landscaping

Landscaping would be provided on approximately 19.8 percent (78,795 square feet) of the Project site. Landscaping would be installed in all areas not devoted to buildings, parking, traffic, and specific user requirements, in accordance with the City's Zoning and Development Code Section 30-551 which specifies landscape design guidelines for industrial zoning districts.

Project Circulation and Parking

Currently, the Project site is accessible from Windflower Avenue via Sierra Avenue. There is currently not access between the Project site and Mango Avenue.

Regional Project access would be from State Route 210 (SR-210) via the officially designated local truck route, Sierra Avenue. Local access would be provided via Sierra Avenue and Mango Avenue. Project site ingress and egress would be via four driveways: one 40-foot (southerly) driveway and one 35-foot (northerly) driveway on Sierra Avenue and one 40-foot (southerly) driveway and one 35-foot (northerly) driveway on Mango Avenue. Trucks would enter the site via northbound Sierra Avenue and exit the site via southbound Mango Avenue. Mango Avenue intersects with Sierra Lakes Parkway

which reconnects with Sierra Avenue. Trucks would access southbound Sierra Avenue from this point to reach SR-210 and regional destinations beyond.

The Project would provide 132 parking stalls, 81 trailer stalls, and 37 tractor trailer stalls. Additionally, a total of 54 dock doors would be provided. Parking stalls would be provided as follows:

<ul style="list-style-type: none"> ▪ Standard = 98 stalls ▪ ADA Standard = 5 stalls ▪ ADA Van = 1 stall ▪ EV ADA Van = 1 stall 	<ul style="list-style-type: none"> ▪ EV Charging Only = 21 stalls ▪ EV ADA = 1 stalls ▪ EV Ambulance = 0 stalls ▪ Carpool/Vanpool/EV = 5 stalls
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The Project would require a 34-foot right-of-way dedication for Mango Avenue.

Project Phasing and Construction

The Project is anticipated to be developed in one phase. Should the Project be approved, construction is anticipated to occur over a duration of approximately 15 months, commencing in summer of 2024; the facility would be operational in fall of 2025. New construction would include: (1) demolition, (2) grading/removal of concrete, (3) building construction, (4) paving, (5) architectural coating, (6) landscaping, and the applicable off-site improvements conditioned by the City consisting of standard curb and gutter improvements.

Grading and Utilities

The following describes grading and utility work to be completed for the Project. The Project site is relatively flat but would require grading to achieve the needed slopes and contour to facilitate building design and connections to existing utilities. The existing site topography generally slopes downward to the south at a gradient of 3± percent. The Project site would maintain the same general drainage pattern and would be graded to conduct runoff to the new drainage facilities that would be constructed as part of the Project. It is anticipated that the site would be graded to balance on-site, eliminating the need for off-site soils hauling.

Overhead SCE powerlines are present along the northern, southern, and western property lines of the Project site. The overhead powerlines would be removed from their existing location and undergrounded. The applicant would work with SCE to tie into, relocate, and extend services into the site as required.

4.0 Energy Conservation

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

In addition, the California Natural Resources Agency finalized updates to the CEQA Guidelines in December 2018. CEQA Guidelines Section 15126.2(b) treats “wasteful, inefficient, or unnecessary” energy consumption as a significant environmental impact. As a result, energy thresholds have been incorporated into Appendix G of the CEQA Guidelines. This technical memorandum has been prepared to assess energy impacts in accordance with Appendix G of the CEQA Guidelines.

Environmental Setting

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

Electricity Service

Southern California Edison (SCE) provides electrical services to the City of Fontana (City) through State-regulated public utility contracts. Over the past 15 years, electricity generation in California has undergone a transition. Historically, California has relied heavily on oil- and gas-fired plants to generate electricity. Spurred by regulatory measures and tax incentives, California’s electrical system has become more reliant on renewable energy sources; including cogeneration, wind energy, solar energy, geothermal energy, biomass conversion, transformation plants, and small hydroelectric plants. Unlike petroleum production, electricity generation is not usually tied to the location of the fuel source and can be delivered great distances via the electrical grid. The generating capacity of a unit of electricity is expressed in megawatts (MW). Net generation refers to the gross amount of

energy produced by a unit, minus the amount of energy the unit consumes. Generation is typically measured in megawatt-hours (MWh), kilowatt-hours (kWh), or gigawatt-hours (GWh).

Natural Gas Services

Southern California Gas Company (SoCalGas) provides natural gas services to the City and San Bernardino County (County). Natural gas is a hydrocarbon fuel found in reservoirs beneath the Earth's surface and is composed primarily of methane (CH₄). It is used for space and water heating, process heating and electricity generation, and as transportation fuel. Use of natural gas to generate electricity is expected to increase in coming years because it is a relatively clean alternative to other fossil fuels (e.g., oil and coal). In California and throughout the western United States, many new electrical generation plants fired by natural gas are being brought online. Thus, there is great interest in importing liquefied natural gas from other parts of the world. California's natural gas-fired electric generation increased by 5.5 percent in 2021, accounting for 50.2 percent of in-state generation.²

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

Energy Usage

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy usage in California was 6,922.8 trillion BTUs in 2020 (the most recent year for which this specific data is available).³ Of California's total energy usage, the breakdown by sector is 34.0 percent transportation, 24.6 percent industrial, 19.6 percent commercial, and 21.8 percent residential.⁴ Electricity and natural gas in California are generally consumed by stationary users such as residences, commercial, and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-

² California Energy Commission, *2021 Total System Electric Generation*, <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation>, accessed August 26, 2022.

³ U.S. Energy Information Administration, *Table F33: Total energy consumption, price, and expenditure estimates, 2020*, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=CA, accessed August 26, 2022.

⁴ U.S. Energy Information Administration, *California State Profile and Energy Estimates, California Energy Consumption by End-Use Sector, 2020*, <https://www.eia.gov/state/?sid=CA#tabs-2>, accessed August 26, 2022.

related energy use. In 2021, taxable gasoline sales (including aviation gasoline) in California accounted for 13,060,407,775 gallons of gasoline.⁵

The electricity consumption attributable to the County from 2010 to 2020 is shown in Table 1: Electricity Consumption in San Bernardino County 2010-2020. As indicated in Table 1, energy consumption in the County increased steadily between 2010 and 2020 with a slight decrease in 2019.

Table 1: Electricity Consumption in San Bernardino County 2010-2020	
Year	Electricity Consumption (in millions of kilowatt hours)
2010	13,481
2011	13,730
2012	14,348
2013	14,374
2014	14,731
2015	14,731
2016	14,946
2017	15,282
2018	15,376
2019	15,316
2020	15,969

Source: California Energy Commission, *Electricity Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed August 26, 2022.

The natural gas consumption attributable to the County from 2010 to 2020 is shown in Table 2: Natural Gas Consumption in San Bernardino County 2010-2020. Natural gas consumption in the County fluctuated with increases and decreases occurring annually.

Table 2: Natural Gas Consumption in San Bernardino County 2010-2020	
Year	Natural Gas Consumption (in millions of therms)
2010	492
2011	504
2012	486
2013	503
2014	453
2015	470
2016	494

⁵ California Department of Tax and Fee Administration, *January 2022 – Motor Vehicle Fuel 10 Year Reports*, <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>, accessed August 26, 2022.

Year	Natural Gas Consumption (in millions of therms)
2017	493
2018	500
2019	547
2020	527

Source: California Energy Commission, *Natural Gas Consumption by County*, <http://www.ecdms.energy.ca.gov/>, accessed August 26, 2022.

Automotive fuel consumption in the County from 2011 to 2021 is shown in Table 3: Automotive Fuel Consumption in San Bernardino County 2011-2021. As shown in Table 3, on-road automotive fuel consumption in the County relatively decreased from 2011 to 2013 and increased from 2013 to 2019. Gasoline fuel consumption decreased in 2020 and increased in 2021. Heavy-duty vehicle fuel consumption decreased from 2011 to 2012 and increased from 2013 to 2021 with a light decrease in 2018.

Year	On-Road Automotive Fuel Consumption (gallons)	Heavy-Duty Vehicle/Diesel Fuel Consumption (Construction Equipment) (gallons)
2011	829,043,622	223,450,227
2012	823,824,155	221,468,396
2013	823,575,913	231,100,540
2014	833,908,390	233,757,358
2015	862,282,542	236,687,334
2016	886,951,688	251,535,041
2017	894,270,493	263,723,118
2018	894,127,745	259,783,109
2019	894,821,914	261,139,639
2020	763,765,305	265,477,739
2021	869,262,611	272,787,528

Source: California Air Resources Board, EMFAC2021.

5.0 Regulatory Setting

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

5.1 State of California

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

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

The 2016 Standards improved upon the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential buildings are 28 percent more energy efficient and nonresidential buildings are 5 percent more energy efficient than under the 2013 Standards. Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features.

The 2019 Standards improve upon the 2016 Standards. Under the 2019 Title 24 standards, residential buildings are about 7 percent more energy efficient, and when the required rooftop solar is factored in for low-rise residential construction, residential buildings that meet 2019 Title 24 standards use about 53 percent less energy than those built to meet the 2016 standards.

On August 11, 2021, the CEC adopted the 2022 Energy Code. In December, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. Among other updates like strengthened ventilation standards for gas cooking appliances, the 2022 Energy Code includes updated standards in three major areas:

- New electric heat pump requirements for residential uses, schools, offices, banks, libraries, retail, and grocery stores.

- The promotion of electric-ready requirements for new homes including the addition of circuitry for electric appliances, battery storage panels, and dedicated infrastructure to allow for the conversion from natural gas to electricity.
- The expansion of solar photovoltaic and battery storage standards to additional land uses including high-rise multifamily residences, hotels and motels, tenant spaces, offices, (including medical offices and clinics), retail and grocery stores, restaurants, schools, and civic uses (including theaters auditoriums, and convention centers).

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary measures (CALGreen Tier 1 and Tier 2) that local governments may adopt which encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code was adopted in 2019 and went into effect January 1, 2020. The CEC has approved the 2022 California Green Building Standards Code it will take effect January 1, 2023. Projects whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.⁶

California Public Utilities Commission Energy Efficiency Strategic Plan

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

⁶ California Energy Commission. 2022. *2022 Building Energy Efficiency Standards*, <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

Renewable Portfolio Standard

In 2002, California established its Renewable Portfolio Standard program with the goal of increasing the annual percentage of renewable energy in the state’s electricity mix by the equivalent of at least 1 percent of sales, with an aggregate total of 20 percent by 2017. The California Public Utilities Commission subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code Section 399.15(b)(1)). Then-Governor Schwarzenegger signed Executive Order S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. In September 2009, then-Governor Schwarzenegger continued California’s commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the California Air Resources Board under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. In September 2010, the California Air Resources Board adopted its Renewable Electricity Standard regulations, which require all of the State’s load-serving entities to meet this target. In October 2015, then-Governor Brown signed into legislation Senate Bill 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Signed in 2018, SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

5.2 County of San Bernardino**San Bernardino County Regional Greenhouse Gas Reduction Plan**

In response to statewide GHG reduction initiatives, the San Bernardino Associated Governments (formerly SANBAG, now known as SBCOG), cooperated to compile an inventory of GHG emissions and an evaluation of reduction measures to be adopted by the cities partnering within SBCOG. Reduction measures in the GHG Reduction Plan (GHGRP) are targeting GHG goals for the year 2030. Several of the measures and policies mentioned in the GHGRP for the City of Fontana are from the General Plan. The policies listed in the GHGRP range from broadly supporting energy efficiency and sustainability to policies closely tied to specific GHG reduction measures.

5.3 City of Fontana

City of Fontana General Plan

The City of Fontana’s General Plan Update outlines the concerns of the community and the means of addressing those concerns. General Plan policies that relate to energy include the following:

Chapter 9 Community Mobility and Circulation

Goal 5: Fontana’s commercial and mixed-use areas include a multifunctional street network that ensures a safe, comfortable, and efficient movement of people, goods, and services to support a high quality of life and economic vitality.

Policy 5-1: Provide a transportation network that is compatible with the needs of commerce and those who live, work and shop in mixed-use areas.

Policy 5-2: Encourage mixed use and commercial developments that support walking, bicycling, and public transit use while balancing the needs of motorized traffic to serve such developments.

Chapter 12 Sustainability and Resilience

Goal 2: Government facilities and operations are models of resource efficiency.

Policy 2-1: Incorporate goals into the City Code for resource efficiency in municipal facilities and operations.

Policy 2-2: Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste.

Goal 3: Renewable sources of energy, including solar and wind, and other energy-conservation strategies are available to city households and businesses.

Policy 3-1: Promote renewable energy programs for government, Fontana businesses, and Fontana residences.

Goal 5: Green building techniques are used in new development and retrofits.

Policy 5-1: Promote green building through guidelines, awards and nonfinancial incentives.

Goal 6: Fontana is a leader in energy-efficient development and retrofits.

Policy 6.1: Promote energy-efficient development in Fontana.

Policy 6.2: Meet or exceed state goals for energy-efficient new construction.

City of Fontana Zoning and Development Code

Fontana Municipal Code (MC) Section 30-528, Resource Conservation establishes a guideline by which the City can implement the goals and policies of the general plan, which recognize the presence of sustainability and resilience in new development. This portion of the code recognizes energy resources to be encouraged to incorporate passive and active solar systems into site and building design and as required by the latest California Building Code.⁷

City of Fontana Industrial Commerce Center Sustainability Standards Ordinance

The City approved and adopted the Industrial Commerce Center Sustainability Standards Ordinance (Ordinance No. 1891) on April 12, 2022. It is applicable to all warehouse uses throughout the City, including the Project. The Ordinance will meet and exceed all state and federal environmental standards and would foster the balancing of public health and quality of life issues with the economic and employment opportunities that the goods movement provides the City and its residents.

6.0 CEQA Thresholds and Methodology

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

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

The impact analysis focuses on the three sources of energy that are relevant to the proposed Project: electricity, natural gas, and transportation fuel for vehicle trips associated with the Project as well as the fuel necessary for Project construction. The analysis of the Project’s electricity and natural gas use is based on the California Emissions Estimator Model (CalEEMod), which quantifies energy use for occupancy. The results of CalEEMod are included in the Project’s Air Quality Assessment, prepared by Kimley-Horn (2022). Modeling related to Project energy use was based primarily on the default

⁷ City of Fontana. 2022. *City of Fontana Municipal Code – Section 30-528*. https://library.municode.com/ca/fontana/codes/zoning_and_development_code?nodeId=CH30ZODECO_ARTVIIIINZODI_DIV2DEST_S30-528RECO (accessed September 2022).

settings in CalEEMod. The amount of operational fuel use was estimated using CalEEMod outputs for the Project and CARB Emissions Factor (EMFAC) 2021 computer program for typical daily fuel use in San Bernardino County. Construction fuel was calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry.

7.0 Impacts and Mitigation Measures

Threshold 7.1 Would the project result in wasteful, inefficient, or unnecessary consumption of energy resources?

Energy consumption associated with the proposed Project is summarized in [Table 4: Project and Countywide Energy Consumption](#). [Table 4](#) demonstrates that the Project's net increase in electricity usage (subtracting estimated energy use from existing uses) would constitute approximately 0.0113 percent of typical annual electricity usage, and approximately 0.0014 percent of typical annual natural gas consumption for the County. Construction-related on- and off-road automotive fuel consumption (i.e., fuel consumed during construction) would constitute 0.0303 percent of diesel and 0.0047 percent of gasoline consumption. During operations, the net increase in on-road automotive fuel consumption (i.e., fuel consumed from operational vehicle trips to and from the Project site) would constitute 0.0388 percent of diesel and 0.0086 percent of gasoline of Countywide automotive fuel consumption.

Construction-Related Energy

During construction, the Project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during grading, paving, and building construction. Fuel energy consumed during construction would be temporary in nature and would not represent a significant demand on energy resources. Some incidental energy conservation would occur during construction through compliance with State requirements that equipment not in use for more than five minutes be turned off. Pursuant to the Fontana Industrial Commerce Center Sustainability Standards Ordinance, Project construction equipment would also be required to comply with the latest Environmental Protection Agency and California Air Resources Board (CARB) engine emissions standards and use reasonable best efforts to deploy the highest rated CARB Tier technology that is available at the time of construction (Sec. 9-74). These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. In addition, the Fontana Industrial Commerce Center

Sustainability Standards Ordinance requires the use of electric-powered hand tools, forklifts, and pressure washers and prohibits the use of diesel-powered generators except in the case of emergency or to establish temporary power during construction. Due to increasing transportation costs and fuel prices, contractors and owners also have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Table 4.6-4: Project and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption	San Bernardino County Annual Energy Consumption ^{1,2}	Percentage Increase Countywide
Operational Electricity and Natural Gas			
<i>Electricity</i>			
Project Consumption	2,065,903 kWh		
Existing Consumption	255,893 kWh		
Net Consumption	1,810,010	15,968,515,536 kWh	0.0113%
<i>Natural Gas</i>			
Project Consumption	8,142 therms		
Existing Consumption	965 therms		
Net Consumption	7,177 therms	527,236,428 therms	0.0014%
Automotive Fuel Consumption³			
<i>Project Construction^{4,5}</i>			
Diesel	83,747 gallons	276,240,500 gallons	0.0303%
Gasoline	40,578 gallons	867,249,800 gallons	0.0047%
<i>Operations</i>			
Diesel			
Project	268,681 gallons		
Existing	161,399 gallons		
Net Diesel	107,282 gallons	276,240,500 gallons	0.0388%
Gasoline			
Project	93,973 gallons		
Existing	19,781 gallons		
Net Gasoline	74,192 gallons	867,249,800 gallons	0.0086%
Source: Kimley-Horn. 2023. <i>Sierra Distribution Facility – Energy Assessment</i> , Table 4.			
Notes:			
1. The Project increases in electricity and natural gas consumption are compared with the total consumption in San Bernardino County in 2020.			
2. The Project increases in automotive fuel consumption are compared with the countywide fuel consumption (projected) in 2022.			
3. Countywide fuel consumption is from the California Air Resources Board EMFAC2021 model.			
4. Construction fuel consumption is based equipment and load factors from California Emissions Estimator Model (CalEEMod version 2020.4.0).			
5. The estimated construction fuel consumption is based on the Project's construction equipment list timing/phasing, and hours of duration for construction equipment, as well as vendor, hauling, and construction worker trips.			

Substantial reductions in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to produce than non-recycled materials. The incremental increase in the use of energy bound in construction

materials such as asphalt, steel, concrete, pipes and manufactured or processed materials (e.g., lumber and gas) would not substantially increase demand for energy compared to overall local and regional demand for construction materials. It is reasonable to assume that production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest in minimizing the cost of doing business.

As indicated in [Table 4](#), the overall diesel fuel consumption during construction of the Project would be 83,747 gallons and gasoline consumption would be 40,578 gallons, which would constitute a nominal percentage (0.0303 percent and 0.0047 percent, respectively) of fuel use in the County. As such, Project construction would have a minimal effect on the local and regional energy supplies. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or state. Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. A less than significant impact would occur in this regard.

Operational Energy

Energy Demand

Transportation Energy Demand. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NTSA) is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. [Table 4](#) provides an estimate of the daily fuel consumed by vehicles traveling to and from the Project site. As indicated in [Table 4](#), Project operations are estimated to consume approximately 107,282 additional gallons of diesel fuel and 74,192 additional gallons of gasoline fuel per year in comparison to existing uses, which would constitute approximately 0.0388 percent and 0.0086 percent, respectively, of Countywide automotive fuel consumption. The Project would not result in any unusual characteristics that would result in excessive long-term operational fuel consumption. On-site motorized operational equipment would be zero emissions and not require the use of fossil fuel), pursuant to the Fontana Industrial Commerce Center Sustainability Standards Ordinance. Supporting the State's goal of zero emissions on-road vehicles, and pursuant to the Fontana Industrial Commerce Center Sustainability Standards Ordinance, the Project would install a total of 23 EV parking spaces. Fuel consumption associated with vehicle trips generated by the

Project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

Building Energy Demand. Operations of the Project would result in a net increase of approximately 1,810,010 kWh of electricity per year and approximately 7,177 therms of natural gas per year. The Project would be required to comply with Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances; water, space heating, and cooling equipment; building insulation and roofing; and lighting. In addition, the Fontana Industrial Commerce Center Sustainability Standards Ordinance requires that all buildings are solar-ready, the use of light-colored roofing material over office spaces, and cool surface treatments in all drive aisles and parking areas. Implementation of the Title 24 standards and compliance with the Fontana Industrial Commerce Center Sustainability Standards Ordinance significantly reduces energy usage. Furthermore, the electricity provider, SCE, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 50 percent of total procurement by 2030. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. The increase in reliance of such energy resources further ensures projects will not result in the waste of the finite energy resources.

As indicated in Table 4, operational energy consumption would represent approximately 0.0113 percent of electricity consumption over the current Countywide usage. The Project would adhere to all federal, state, and local requirements for energy efficiency, including the Title 24 standards. As such, the Project would not result in the inefficient, wasteful, or unnecessary consumption of building energy.

Conclusion. As shown in Table 4, the increase in electricity and automotive fuel consumption constitutes a minimal percentage (less than one percent) of existing consumption. For the reasons described above, the Project would not place a substantial demand on regional energy supply or require significant additional capacity, or significantly increase peak and base period electricity demand. Thus, the Project would not cause a wasteful, inefficient, and unnecessary consumption of energy during Project construction, operation, and/or maintenance, or preempt future energy development or future energy conservation. A less than significant impact would occur.

Threshold 7.2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

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

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

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

The San Bernardino County RGHGRP establishes a series of energy efficiency related goals intended to reduce greenhouse gas (GHG) emissions based on the AB 32 Scoping Plan. Those applicable to the Project are Renewables Portfolio Standard for Building Energy Use, Assembly Bill 1109 Energy Efficiency Standards for Lighting, Electricity Energy Efficiency, and Commercial Energy Efficiency Requirements.

In addition, the Project would be required to comply with all applicable standards of the Fontana Industrial Commerce Center Sustainability Standards Ordinance and final documentation of compliance would be subject to review and approval prior to issuance of applicable permits. Standards include alternative energy measures that require all building rooftops to be solar-ready, zero emission on-site motorized operational equipment, a minimum of 10 percent of all passenger vehicles to be electric vehicle ready, and at least 5 percent of all passenger vehicle parking spaces to be equipped with working electric vehicle charging stations. The Project would not conflict with any of the federal, state, or local plans for renewable energy and energy efficiency. Because the Project would comply with Parts 6 and 11 of Title 24 and with RGHGRP measures, no conflict with existing

energy standards and regulations would occur. Therefore, impacts associated with renewable energy or energy efficiency plans would be considered less than significant.

8.0 References

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California Department of Tax and Fee Administration, *April 2020 – Motor Vehicle Fuel 10 Year Reports*, <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>.

California Public Utilities Commission, *Energy Efficiency Strategic Plan*, 2011.

City of Fontana, *Industrial Commerce Center Sustainability Ordinance (Ordinance No. 1891)*, Fontana Municipal Code Article V Section 9-70, April 2022

Southern California Edison, *The Clean Power and Electrification Pathway*, https://newsroom.edison.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/166/files/20187/g17-pathway-to-2030-white-paper.pdf.

U.S. Energy Information Administration, *Table F32: Total energy consumption, price, and expenditure estimates*, 2019, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=CA.

U.S. Energy Information Administration, *California State Profile and Energy Estimates*, <https://www.eia.gov/state/?sid=CA>.

Appendix A

Energy Data

Construction Fuel Consumption

On-Site Diesel ¹ (off-road construction Equipment)	MTCO ₂ e	Gallons of Fuel ⁴	Current County Fuel	Percent
Demolition	34	3,373		
Site Preparation/Grading	157	15,463		
Infrastructure	77	7,583		
Building Construction	202	19,881		
Paving & Architectural Coating	49	4,816		
Total	519	51,116	276,240,500	0.0185%

Off-Site Diesel ¹ (on-road construction trips)	MTCO ₂ e	Gallons of Fuel ⁴	Current County Fuel	Percent
Demolition	47	4,664		
Site Preparation/Grading	0	0		
Infrastructure	79	7,824		
Building Construction	204	20,143		
Paving & Architectural Coating	0	0		
Total	331	32,631	276,240,500	0.0118%

Off-Site Gasoline ²	MTCO ₂ e	Gallons of Fuel ⁴	Current County Fuel	Percent
Demolition	1	146		
Site Preparation/Grading	5	620		
Infrastructure	94	10,724		
Building Construction	242	27,415		
Paving & Architectural Coating	15	1,673		
Total	357	40,578	867,249,800	0.0047%

Total Diesel Fuel		83,747	276,240,500	0.0303%
Total Gasoline Fuel		40,578	867,249,800	0.0047%
Total Construction Fuel	1,208	124,325		

Construction Phase ³	Demolition			Site Preparation			Grading		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)
2024	34	47	1	39	0	2	118	0	4
2025									
Total	34	47	1	39	0	2	118	0	4

Construction Phase ³	Infrastructure			Building Construction			Architectural Coating & Paving		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)
2024	77	79	94				49	0	15
2025				202	204	242			
Total	77	79	94	202	204	242	49	0	15

Notes:

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

² Fuel used for worker trips assumed to be gasoline.

³ MTCO₂e rates from CalEEMod (3.0 Construction Details).

⁴ For CO₂e emissions, see Chapter 13 (page 94); Conversion Ratios: Climate Registry, General Reporting Protocol, 2016.

Construction Water Energy

Daily Soil Disturbance ¹	4	acres
Days of Soil Disturbance ²	43	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	11,110	kWh/MG
Total Construction Water	0.45	million gallons
Construction Water Energy	5,050	kWh
	0.0050	GWh

Notes:

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

² Number of days of construction with soil-disturbing equipment per CalEEMod (3.0 Construction Detail).

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

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

Operational Fuel

Vehicle Type	Percent ¹	Annual VMT ²	MPG ³	Annual Fuel (Gallons)	Fuel Type	SB County Gallons ⁴	RS Percent
Passenger Cars (Gasoline)	0.65	2,029,810	21.6	93,973	Gas	867,249,800	0.0108%
Light/Medium Trucks	0.94	2,937,921	17.2	170,809	Diesel	276,240,500	
Heavy Trucks/Other	0.19	597,016	6.1	97,872	Diesel	276,240,500	
Total Diesel	1.13	3,127,377		268,681			0.0973%

Total

Land Use ⁵	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Unrefrigerated Warehouse	0.6490	0.0000	0.0000	0.0000	0.0000	0.8660	0.0000	0.0734	0.0000	0.0000	0.0000	0.0000	0.1909

Notes:

- ¹ Percent of vehicle trip distribution based on fleet mix from CalEEMod (4.4 Fleet Mix).
- ² Total annual operational VMT based on mitigated annual VMT from CalEEMod (4.2 Trip Summary Information).
- ³ Average fuel economy derived from Department of Transportation.
- ⁴ Total annual county fuel per EMFAC 2017 model of projected operational fuel usage.

Electricity/Natural Gas Energy

	Project Annual Energy	San Bernardino County Annual Energy ³	Percentage Increase
Electricity (kWh/yr)	2,065,903	15,968,515,536	0.0129%
Natural Gas (kBTU/yr)	814,248	52,723,642,800	0.0015%
Natural Gas (therms/yr)	8,142	527,236,428	0.00154437%

Land Use	Electricity ¹ (kWh/yr)	Natural Gas ² (kBTU/yr)
	Unmitigated	Unmitigated
General Office Building	91,900	34,300
Unrefrigerated Warehouse	900,239	779,948
Parking Lot	109,165	0
<i>Water Energy</i>	<i>964,599</i>	0
Total Energy	2,065,903	814,248

Notes:

¹ Electricity use per CalEEMod (5.3 Energy by Land Use).

² Natural Gas use per CalEEMod (5.2 Natural Gas by Land Use).

³ County total energy values from California Energy Commission energy reports available through ecdms.energy.ca.gov. (year 2020)

Operational Water Energy

Unmitigated Indoor	73.2	million gallons
Indoor Energy Intensity Factor ¹	13,021	kWh/MG
Unmitigated Outdoor	1	million gallons
Outdoor Energy Intensity Factor ²	11,110	kWh/MG
Operational Water Energy	964,599	kWh

Land Use ³	Unmitigated (MG)	
	Indoor	Outdoor
General Office Building	1	1
Unrefrigerated Warehouse	72	0
Total Operational Water	73	1

Notes:

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

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

³ Operational water use values per CalEEMod (7.2 Water by Land Use).

Operational Fuel - Existing

Vehicle Type	Percent ¹	Annual VMT ²	MPG ³	Annual Fuel (Gallons)	Fuel Type	SB County Gallons ⁴	RS Percent
Passenger Cars (Gasoline)	0.24	427,279	21.6	19,781	Gas	867,249,800	0.0023%
Light/Medium Trucks	0.34	624,945	17.2	36,334	Diesel	276,240,500	
Heavy Trucks/Other	0.42	762,895	6.1	125,065	Diesel	276,240,500	
		1,815,119		161,399			0.0584%

Total

Land Use ⁵	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Unrefrigerated Warehouse	0.2354	0.0000	0.0000	0.0000	0.0000	0.1848	0.0000	0.1595	0.0000	0.0000	0.0000	0.0000	0.4203

Notes:

- ¹ Percent of vehicle trip distribution based on fleet mix from CalEEMod (4.4 Fleet Mix).
- ² Total annual operational VMT based on mitigated annual VMT from CalEEMod (4.2 Trip Summary Information).
- ³ Average fuel economy derived from Department of Transportation.
- ⁴ Total annual county fuel per EMFAC 2017 model of projected operational fuel usage.

Operational Water Energy - Existing

Mitigated Indoor	11.1	million gallons
Indoor Energy Intensity Factor ¹	13,021	kWh/MG
Mitigated Outdoor	0	million gallons
Outdoor Energy Intensity Factor ²	11,110	kWh/MG
Operational Water Energy	144,533	kWh

Land Use ³	Unmitigated (MG)		Mitigated (MG)	
	Indoor	Outdoor	Indoor	Outdoor
Unrefrigerated Warehouse	11	0	11	0
Total Operational Water	11	0	11	0

Notes:

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

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

³ Operational water use values per CalEEMod (7.2 Water by Land Use).

Electricity/Natural Gas Energy - Existing

	Mitigated Project Annual Energy	San Bernardino County Annual Energy ³	Percentage Increase
Electricity (kWh/yr)	255,893	15,968,515,536	0.0016%
Natural Gas (kBTU/yr)	96,480	52,723,642,800	0.0002%
Natural Gas (therms/yr)	965	527,236,428	0.00018299%

Land Use	Electricity ¹ (kWh/yr)		Natural Gas ² (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Unrefrigerated Warehouse	111,360	111,360	96,480	96,480
<i>Water Energy</i>	<i>144,533</i>	<i>144,533</i>	<i>0</i>	<i>0</i>
Total Energy	255,893	255,893	96,480	96,480

Notes:

¹ Electricity use per CalEEMod (5.3 Energy by Land Use).

² Natural Gas use per CalEEMod (5.2 Natural Gas by Land Use).

³ County total energy values from California Energy Commission energy reports available through ecdms.energy.ca.gov. (year 2020)