Kimley»Horn

MEMORANDUM

To: Miles Eaton, Kimley-Horn and Associates

From: Olivia Chan, Kimley-Horn and Associates

Date: December 16, 2022

Subject: Gateway South 9 Warehouse – Energy Assessment

1.0 Purpose

The purpose of this technical memorandum is to evaluate potential short- and long-term energy consumption impacts of the Gateway South 9 Warehouse Project (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 the City of San Bernardino, San Bernardino County (County), California. The Project site is located at the southeast corner of the intersection of Lena Road and Norman Road and is bounded to the north by Norman Road, to the east by existing industrial use, to the south by Orange Show Road, and to the west by Lena Road. The Project site is presently developed with vehicle maintenance and storage yards.

3.0 Project Description

The Project consists of the development of a 397,400 square foot high-cube transload and short-term warehouse building. Construction is expected to begin in June 2023 and complete in June 2024.

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 San Bernardino (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).

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).[1] 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.[2] 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-related energy use. In 2021, taxable gasoline sales (including aviation gasoline) in California accounted for 13,060,407,775 gallons of gasoline.[3]

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 December 13, 2022.

Automotive fuel consumption in the County from 2011 to 2021 is shown in Table 2: Automotive Fuel Consumption in San Bernardino County 2011-2021. As shown in Table 2, 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 slight decrease in 2018.

1 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 December 13,2022.

2 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.

3 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 December 13, 2022.

Table 2: Automotive Fuel Consumption in San Bernardino County 2011-2021		
Year	On-Road Automotive Fuel Consumption (gallons)	Heavy-Duty Vehicle/Diesel Fuel Consumption (Construction Equipment) (gallons)
2011	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 2021, 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.[4]

[4] 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.

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.

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 San Bernardino 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 San Bernardino

City of San Bernardino General Plan

The City of San Bernardino'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 13 Energy and Water Conservation

Goal 13.1: Conserve scarce energy resources.

- Policy 13.1.1 Reduce the City's ongoing electricity use by 10 percent and set an example for residents and businesses to follow.
- Policy 13.1.2 Ensure the incorporation of energy conservation features in the design of all new construction and site development in accordance with State Law.
- Policy 13.1.3 Consider enrollment in the Community Energy Efficiency Program (CEEP), which provides incentives for builders who attain energy savings 30 percent above the National Model Energy Code, the Energy Star Program, which is sponsored by the United States Department of Energy and the Environmental Protection Agency and encourages superior energy efficiency by residents and businesses, or the State's Energy Efficiency and Demand Reduction Program, which offer rebates and incentives to agencies and developers who reduce energy consumption and use energy efficient fixtures and energy-saving design elements.
- Policy 13.1.4 Require energy audits of existing public structures and encourages audits of private structures, identifying levels of existing energy use and potential conservation measures.
- Policy 13.1.5 Encourage energy-efficient retrofitting of existing buildings throughout the City.

Policy 13.1.6 Consider program that awards incentives to projects that install energy conservation measures, including technical assistance and possible low-interest loans.

Policy 13.1.7 Ensure that new development consider the ability of adjacent properties to utilize energy conservation design.

Policy 13.1.8 Educate the public regarding the need for energy conservation, environmental stewardship, and sustainability techniques and about systems and standards that are currently available for achieving greater energy and resource efficiency, such as the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) standard for buildings.

Policy 13.1.9 Encourage increased use of passive and active solar and wind design in existing and new development (e.g., orienting buildings to maximize exposure to cooling effects of prevailing winds, daylighting design, natural ventilation, space planning, thermal massing and locating landscaping and landscape structures to shade buildings).

Policy 13.1.10 Consider adopting an ordinance relating to energy conservation, environmental stewardship, and sustainability for new development that incorporates the LEED standards.

Chapter 12 Natural Resources and Conservation

Goal 12.6: Reduce the amount of vehicular emissions in San Bernardino.

Policy 12.6.5 Require qualifying development to implement or participate in transportation demand management programs, which provide incentives for car pooling, van pools, and the use of public transit and employ other trip reduction techniques (consistent with the Circulation Element and South Coast Air Quality Management Plan).

Policy 12.6.7 Promote the use of public transit and alternative travel modes to reduce air emissions.

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 Greenhouse Gas Analysis, prepared by Urban Crossroads (November 18, 2022). 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 3: Project and Countywide Energy Consumption. As shown in Table 3, the Project's increase in electricity usage would constitute approximately 0.020 percent of typical annual electricity usage in the County. The Project would not require natural gas. Construction-related on- and off-road automotive fuel consumption (i.e., fuel consumed during construction) would constitute approximately 0.021 percent of diesel and approximately 0.002 percent of gasoline consumption within the County. During operations, on-road automotive fuel consumption (i.e., fuel consumed from operational vehicle trips to and from the Project site) would constitute approximately 0.014 of diesel and approximately 0.005 percent of gasoline consumption Countywide.

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. Project construction equipment would also be required to comply with the latest EPA and California Air Resources Board engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Table 3: Project and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption	San Bernardino County Annual Energy Consumption[1,2]	Percentage Increase Countywide
Operational Electricity			
Electricity Consumption	3,142,073 kWh	15,968,515,536 kWh	0.020%
Automotive Fuel Consumption[3]			
Project Construction[4,5]			
Diesel	57,670 gallons	276,240,500 gallons	0.021%
Gasoline	20,733 gallons	867,249,800 gallons	0.002%
Project Operations			
Diesel	38,416 gallons	276,240,500 gallons	0.014%
Gasoline	46,887 gallons	867,249,800 gallons	0.005%

Notes:
1. The Project's consumption of electricity and natural gas is compared with the total consumption in San Bernardino County in 2020.
2. The Project's consumption of automotive fuel is 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 2022.1).
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.

Refer to Appendix A: Energy Data for assumptions used in this analysis.

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 3, the overall diesel fuel consumption during construction of the Project would be 57,670 gallons and gasoline consumption would be 20,733 gallons, which would constitute nominal percentages (0.021 percent and 0.002 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 38,416 gallons of diesel fuel and 46,887 gallons of gasoline fuel per year, which would constitute 0.014 percent and 0.005 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. 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 proposed Project would require approximately 3,142,073 kWh of electricity per year and would not require natural gas. The proposed 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 and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards 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 3, operational energy consumption would constitute approximately 0.020 percent of Countywide electricity consumption. 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 3, the increase in electricity and automotive fuel consumption over existing conditions is minimal (less than one percent). 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.

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 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. In addition, the Project would not require natural gas to operate. 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.

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

California Air Resources Board, EMFAC2021.

California Energy Commission, *2019 Building Energy Efficiency Standards*, https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency, accessed December 13, 2022.

California Energy Commission, *Electricity Consumption by County*, http://www.ecdms.energy.ca.gov/, accessed December 13, 2022.

California Energy Commission, *2018 Total System Electric Generation*, https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2018-total-system-electric-generation, accessed December 13, 2022.

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, accessed December 13, 2022.

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

Southern California Edison, *The Clean Power and Electrification Pathway*, https://download.newsroom.edison.com/create_memory_file/?f_id=5b87f9e12cfac267c6373173&content_verified=True, accessed December 13, 2022.

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, accessed December 13, 2022.

U.S. Energy Information Administration, *California State Profile and Energy Estimates*, https://www.eia.gov/state/?sid=CA, accessed December 13, 2022.

Urban Crossroads, *Gateway South 9 Warehouse Greenhouse Gas Analysis*, November 18, 2022

Appendix A

Energy Data

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	Current County Fuel	Percent
Demolition	32	3,143		
Site Preparation/Grading	83	8,158		
Infrastructure	0	0		
Building Construction	336	33,103		
Paving & Architectural Coating	20	1,998		
Total	471	46,402	276,240,500	0.0168%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	9	917		
Site Preparation/Grading	2	149		
Infrastructure	0	0		
Building Construction	96	9,468		
Paving & Architectural Coating	7	734		
Total	114	11,268	276,240,500	0.0041%

Off-Site Gasoline[2]				
Demolition	2	257		
Site Preparation/Grading	4	400		
Infrastructure	0	0		
Building Construction	167	18,944		
Paving & Architectural Coating	10	1,133		
Total	183	20,733	867,249,800	0.0024%

Total Diesel Fuel		57,670	276,240,500	0.0209%
Total Gasoline Fuel		20,733	867,249,800	0.0024%
Total Construction Fuel	768	78,403		

Construction Phase[3]	Demolition (MTCO2e/yr)			Site Preparation (MTCO2e/yr)			Grading (MTCO2e/yr)		
	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)
2023	32	9	2				83	2	4
2024									
Total	32	9	2	0	0	0	83	2	4

Construction Phase[3]				Building Construction (MTCO2e/yr)			Architectural Coating & Paving (MTCO2e/yr)		
	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)
2023				228	65	114			
2024				108	31	53	20	7	10
Total	0	0	0	336	96	167	20	7	10

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] $MTCO_2e$ rates from CalEEMod (Urban Crossroads 2022)

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

Operations : Off-Road Equipment

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[2]	Current County Fuel	Percent
Cargo Handling Equipment	47	4,668		
Total	47	4,668	276,240,500	0.0017%

Notes:

[1] Fuel used assumed to be diesel.

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

Construction Water Energy

Daily Soil Disturbance[1]	6	acres
Days of Soil Disturbance[2]	20	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	11,110	kWh/MG
Total Construction Water	0.33	million gallons
Construction Water Energy	3,691	kWh
	0.0037	GWh

Notes:

[1] Total daily acres disturbed from offroad equipment per (AQ Analysis, Urban Crossroads 2022) and maximum SCAQMD LST values for soil-disturbing equipment.

[2] Number of days of construction with soil-disturbing equipment per CalEEMod (Urban Crossroads, 2022).

[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)	1.00	1,012,762	21.6	46,887	Gas	867,249,800	0.0054%
Light/Medium Trucks	0.40	110,140	17.2	6,403	Diesel	276,240,500	
Heavy Trucks/Other	0.60	166,802	6.1	27,345	Diesel	276,240,500	
Cargo Handling Equipment				4,668			
Total Diesel	1.00	276,942		38,416			0.0139%
Total Gasoline	1.00	1012762		46,887			0.0054%

Passenger Vehicles				
LDA	LDT1	LDT2	MCY	MDV
0.5623	0.0467	0.2239	0.0201	0.1470

Trucks							
LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
0.1342	0.0362	0.0000	0.0000	0.0000	0.0000	0.2273	0.6023

Notes:

[1] Percent of vehicle trip distribution based on fleet mix in GHG Analysis (Table 4-4 and Table 4-5).

[2] Total annual operational VMT based on mitigated annual VMT from CalEEMod .

[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

Mitigated Indoor	91.9	million gallons
Indoor Energy Intensity Factor[1]	13,021	kWh/MG
Mitigated Outdoor	1	million gallons
Outdoor Energy Intensity Factor[2]	11,110	kWh/MG
Operational Water Energy	1,210,440	kWh

Land Use[3]	Unmitigated (MG)		Mitigated (MG)	
	Indoor	Outdoor	Indoor	Outdoor
Unrefrigerated Warehouse	92	1	92	1
User Defined Industrial	0	0	0	0
Parking Lot	0	0	0	0
Non Asphalt Surfaces	0	0	0	0
Total Operational Water	92	1	92	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 (Urban Crossroads, 2022).

Elecricity/Natural Gas Energy

	Mitigated Project Annual Energy	San Bernardino County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	3,142,073	15,968,515,536	0.0197%
Natural Gas (kBTU/yr)	0	52,723,642,800	0.0000%
Natural Gas (therms/yr)	0	527,236,428	0.00000000%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Unrefrigerated Warehouse	1,835,473	1,835,473	0	0
User Defined Industrial	0	0	0	0
Parking Lot	96,160	96,160	0	0
Non Asphalt Surfaces	0	0	0	0
Water Energy	*1,210,440*	*1,210,440*	0	0
Total Energy	3,142,073	3,142,073	0	0

Notes:

[1] Electricity use per CalEEMod (Urban Crossroads 2022).

[2] Natural Gas use per CalEEMod (Urban Crossroads 2022).

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