5.5 ENERGY

Section 21100(b)(3) of CEQA requires that an EIR include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the State CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with Appendix F and G of the State CEQA Guidelines, this EIR includes relevant information and analyses that address the energy implications of the Proposed Project. This section represents a summary of the Proposed Project's anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the Proposed Project's energy implications, are discussed in greater detail elsewhere in this EIR, including Chapter 3, *Project Description*, and Sections 5.2, *Air Quality*, 5.7, *Greenhouse Gas Emissions*, and 5.13, *Transportation.*

5.5.1 Environmental Setting

5.5.1.1 REGULATORY BACKGROUND

Federal Regulations

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The Act sets increased Corporate Average Fuel Economy Standards; the Renewable Fuel Standard; appliance energy efficiency standards; building energy efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration.

State Regulations

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078 and was amended in 2006 , 2011 and 2018. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the State. Based on the 3rd quarter 2014 report, the three largest retail energy utilities provided an

average of 20.9 percent of its supplies from renewable energy sources. Since 2003, 8,248 megawatts (MW) of renewable energy projects have started operations (CPUC 2014). SB 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. SB 100 (de Leon) passed in 2018 puts California on the path to 100% fossil-fuel free electricity by the year 2045.

State Alternative Fuels Plan

AB 1007 requires the California Energy Commission (CEC) to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with CARB and in consultation with other federal, state, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce GHG emissions; and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007) proactively implements this plan (CEC 2007).

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (CCR Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Title 24, Part 6, Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings (24 CCR Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The CEC adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) "Provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy" and (2) "Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020." Title 24 Part 6 of the 2013 California Building Standards Code, the 2013 California Energy Code, went into effect on July 1, 2014, and includes energy efficiency updates (CBSC 2015). Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features.

Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards will go into effect on January 1, 2017. Under the

2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards, and nonresidential buildings are 5 percent more energy efficient than the 2013 Standards (CEC 2015a).

The 2016 standards will not achieve zero net energy. However, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

Title 24, Part 11, Green Building Standards

CALGreen (24 CCR Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2015).

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal*, above). In January 2012, CARB approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

City of Anaheim

Since 2003, Anaheim Public Utilities Department has been committed to providing customers with increasing amounts of energy from renewable resources, while reducing the consumption of non-renewable energy sources. California's ambitious energy policy goals are aimed at reducing reliance on fossil fuels and significantly lowering greenhouse gas (GHG) emissions. A key measure for achieving these goals is the State's Renewables

Portfolio Standard (RPS), which requires all utilities in the state to incrementally increase the amount of renewable energy delivered to its customers. Currently, Anaheim Public Utilities gets approximately 22% of its power from renewables.

Anaheim Public Utilities plans to increase the renewable power with resources such as wind, solar, geothermal and biogas to 50% by 2030, reduce coal power to zero as contracts expire, and doing this over the next several years to keep the impact on electric rates to a minimum.

5.5.1.2 EXISTING CONDITIONS

Electricity

Anaheim Public Utilities Department (APUD) provides electricity to the City of Anaheim, including the Project Site, serving approximately 119,000 residential and business customers. APUD's power supply comes from resources in Anaheim and across the western United States. APUD supplies more than 3.7 million megawatt-hours a year, with an annual historic system peak demand of 593 megawatts (Anaheim 2017). APUD owns the largest municipal solar photovoltaic system on top of a convention center in North America, consisting of 7,908 panels and producing 3.5 million kilowatt-hours annually, enough to power 600 homes in Anaheim. To date, 128 circuit miles of overhead power lines have been placed underground since 1990. APUD ranks in the top 25 percent of utilities nationwide for electric system reliability, indicating that the City has fewer and shorter power outages than 75 percent of utilities nationwide.

Gas

Southern California Gas Company (SCG) provides gas service in the City of Anaheim and has facilities throughout the City, including the Project Site.

5.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

E-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

E-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

These impacts will be addressed in the following analysis.

5.5.3 Plans, Programs, and Policies

Regulatory Requirements

RR AIR-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building and Energy Efficiency Standards were effective starting

January 1, 2017, and the 2019 Building and Energy Efficiency Standards will become effective January 1, 2020. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve zero net energy (ZNE) for residential buildings by 2020 and nonresidential buildings by 2030.

RR AIR-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new nonresidential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).

RR AIR-3 Construction activities will be conducted in compliance with the California Code of Regulations, Title 13, Section 2499, which requires that nonessential idling of construction equipment be restricted to five minutes or less.

5.5.4 Environmental Impacts

Based on CEQA Guidelines Appendix F, Energy Conservation, in order to ensure energy implications are considered in project decisions, CEQA identifies that EIRs include a discussion of the potential impacts of proposed projects, with particular emphasis on avoiding or reducing wasteful, unnecessary, or inefficient use of energy resources as applicable. Environmental effects may include the Proposed Project's energy requirements and its energy use efficiencies by amount and fuel type during demolition, construction, and operation; the effects of the Proposed Project on local and regional energy supplies; the effects of the Proposed Project on peak and base period demands for electricity and other forms of energy; the degree to which the Proposed Project complies with existing energy standards; the effects of the Proposed Project on energy resources; and the Proposed Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives, if applicable. This discussion is provided below.

Impact 5.5-1: The Proposed Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. [Threshold E-1]

Short-Term Construction Impacts

Construction of the Proposed Project would create temporary increased demands for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use.

Electrical Energy

The Project Site is already developed and consumes an average annual electricity demand of 619,923 kilowatt hours (kWh). Construction of the Proposed Project would require electricity use to power the construction equipment. The electricity use during construction would vary during different phases of construction, where the majority of construction equipment during demolition and grading would be gas-powered or diesel-powered, and the later construction phases would require electricity-powered, such as interior construction and architectural coatings. The Proposed Project would be constructed in one phase and should take approximately two years to complete. As the Project Site is already served by onsite electrical infrastructure, adequate

infrastructure capacity is available to accommodate the electricity demand during construction would not require additional or expanded electrical infrastructure.

The construction contractors are anticipated to minimize idling of construction equipment during construction as required by Regulatory Requirements RR AIR-3. Such required practices would limit wasteful and unnecessary energy consumption.

Gas Energy

As described above, the Proposed Project would be constructed in one phase. As a result, natural gas consumption during construction would be reduced as compared to existing conditions. The construction-related equipment would not be powered by natural gas and no natural gas demand is anticipated during construction. No new or expanded natural gas facilities or supply are anticipated.

Transportation Energy

Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. The majority of construction equipment during demolition and grading would be gas-powered or diesel-powered, and the later construction phases would utilize electricity-powered equipment. As discussed in Section 5.2 *Air Quality*, all diesel-fuel commercial motor vehicles must not idle for more than 5 consecutive minutes at any location. Impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Therefore, impacts would be less than significant.

Long-Term Impacts during Operation

Operation of the Proposed Project would create additional demands for electricity and natural gas compared to existing conditions and would result in increased transportation energy use. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor, outdoor, perimeter, and parking lot lighting.

Electrical Energy

Operation of the existing Serrano Center facility consumes electricity for various purposes, including, but not limited to heating, cooling, and ventilation of buildings, water heating, operation of electrical systems, security and control center functions, lighting, use of onsite equipment and appliances, etc. Based on the historical electricity consumption data, the existing Serrano Center consumed an average 619,923-kilowatt hours annually. Existing and proposed electricity consumption for the Project Site, Parking Lot and Other Non-Asphalt Surfaces are shown in Table 5.5-1.

Table 5.5-1 Electricity Consumption

Location	Average Annual kWh/Year		
	Existing	Proposed Project	Net Change
Project Site	571,549	288,174	-311,935
Parking Lot	48,374	19,814	-28,560
Other Non-Asphalt Surfaces	0	0	0
Total	**619,923**	**307,988**	**-311,935**

Source: CalEEMod Version 2016.3.2

Electrical service to the Proposed Project would be provided by Anaheim Public Utilities through connections to existing offsite electrical lines and new onsite infrastructure. As shown in Table 5.5-1, electricity use at the Project Site would decrease by 311,935 kWh/year, or approximately 50 percent. This is primarily due to the substantial increase in building energy efficiency associated with the new structures compared to the 1970s era structures on the Project Site.

The Proposed Project would be required to comply with the current Building Energy Efficiency Standards. The Proposed Project would be consistent with the requirements of these energy-related regulations and would not result in wasteful or unnecessary electricity demands, and actually reduces electricity demand at the site compared to existing conditions. Therefore, the Proposed Project would not result in a significant impact related to electricity.

Gas Energy

The existing Serrano Center generated an average natural gas demand of 89,729.9 kilo British thermal units (BTU) per year. Existing and proposed natural gas consumption for the Project Site is shown in Table 5.5-2. As shown, natural gas demand will increase with the Proposed Project due to higher consumption related to residential uses.

Development pursuant to the Proposed Project would result in a net increase in the natural gas demands. However, the Project Site is already served by SCG, and there are extensive and reliable gas services in the area. The availability of natural gas service is based on present gas supply and regulatory policies. As a public utility, SCG is under the auspices of the PUC and federal regulatory agencies. Should these agencies take any action that affects gas supply or the conditions under which service is available, gas service would be provided in accordance with revised conditions. No significant impacts are anticipated.

Table 5.5-2 Natural Gas Consumption

Location	Average Annual kBTU/Year		
	Existing	Proposed Project	Net Change
Project Site	89,729.9	1,023,450	933,720.1

Source: CalEEMod Version 2016.3.2

Transportation Energy

The Proposed Project would consume transportation energy during operations from the use of motor vehicles. Because the efficiency of the motor vehicles in use, such as the average miles per gallon for motor vehicles involved with the Proposed Project are unknown, estimates of transportation energy use is assessed based on the overall VMT and related transportation energy use. The Proposed Project-related VMT would come from future residents. The total annual VMT for the existing Serrano Center is 3,130,943. The Proposed Project would decrease total annual VMT by 1,805,084 to 1,325,859, a 57 percent decrease increase from existing conditions. The City of Anaheim and its surrounding area are highly urbanized with numerous gasoline and diesel fuel facilities and infrastructure. Consequently, the Proposed Project would not result in a substantial demand for energy that would require expanded supplies or the construction of other infrastructure or expansion of existing facilities.

Level of Significance before Mitigation: Less than significant.

Impact 5.5-2: The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. [Threshold E-2]

The Proposed Project will be constructed in accordance with the California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building and Energy Efficiency Standards were effective starting January 1, 2017, and the 2019 Building and Energy Efficiency Standards will become effective January 1, 2020. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve zero net energy (ZNE) for residential buildings by 2020 and nonresidential buildings by 2030. The Proposed Project would not state or local plan for renewable energy or energy efficiency, and no significant impacts are anticipated.

Level of Significance before Mitigation: Less than significant.

5.5.5 Cumulative Impacts

The areas considered for cumulative impacts to electricity and natural gas supplies are the service areas of Anaheim Public Utilities and SCG, respectively, described above in Section 5.5.1. Systemwide electricity demand and natural gas supply and demand forecasts are provided. Other projects would generate increased electricity and natural gas demands. Anaheim Public Utilities and SCG each forecast that they will have sufficient electricity and natural gas supplies, respectively, to meet demands in their service areas. Cumulative impacts would be less than significant, and Project impacts would not be cumulatively considerable.

5.5.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.5-1, and 5.5-2.

5.5.7 Mitigation Measures

No mitigation measures are required.

5.5.8 Level of Significance After Mitigation

No significant unavoidable adverse impacts to biological resources have been identified and no mitigation measures are required.

5.5.9 References

California Energy Commission (CEC). 2015a, February 24. California Energy Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf.

———. 2015b, February 24. California Natural Gas Detailed Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/natural_gas_detailed_service_areas.pdf.

———. 2017, August. California Energy Demand Updated Forecast, 2018-2028. https://efiling.energy.ca.gov/getdocument.aspx?tn=220615.

California Gas and Electric Utilities (CGEU). 2018, July. 2018 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf.

Southern California Edison (SCE). 2017, October 27. Power Content Label: 2016. http://www.energy.ca.gov/pcl/labels/2016_labels/Southern_California_Edison-Default.pdf.

5. Environmental Analysis
ENERGY

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