4.4 ENERGY

INTRODUCTION

This section analyzes the Project’s potential impacts on three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section evaluates whether the current and planned energy supplies are adequate to meet the Project’s forecasted energy consumption. In addition, CEQA and Appendix F of the CEQA Guidelines require consideration of Project energy implications, the conservation of energy and avoidance of wasteful, inefficient and unnecessary energy consumption. This section uses information from the Western Electricity Coordinating Council website, the Los Angeles Department of Water and Power (“LADWP”) website, the California Energy Commission (“CEC”) website, the Southern California Gas Company website, and the 2016 California Gas Report. This section utilizes the Vermont Corridor Development Project Utility Infrastructure Technical Report: Water, Wastewater and Energy (“Infrastructure Technical Report: Energy”), prepared by KPFF Consulting Engineers, August 16, 2017. The Utility Infrastructure Technical Report: Water, Wastewater and Energy is included as Appendix 4.16-1 to this Draft EIR.

ENVIRONMENTAL SETTING

Existing Conditions

Electricity

LADWP is responsible for providing power supply to the City while complying with County, State, and Federal regulations.

Regional

LADWP’s Power system is the nation’s largest municipal electric utility, and serves a 465-square-mile area in Los Angeles. The system supplies more than 26 million megawatt-hours (“MWh”) of electricity per year for the City of Los Angeles’ 1.4 million residential and business customers. LADWP has over 7,460 megawatts (“MW”) of generation capacity from a diverse mix of energy sources, including Renewable energy, Natural Gas, Nuclear, Large Hydro, coal and other sources. The distribution network includes 6,800 miles of overhead distribution lines and 3,597 miles of underground distribution cables.1

Local

LADWP provides electrical service in the City, including the Project Sites. LADWP generates power from a variety of different sources that include approximately 23 percent from renewable energy, approximately 4 percent from hydroelectric, approximately 17 percent from natural gas, approximately 10 percent from nuclear energy, and other fuels. LADWP utilizes renewable energy sources and is committed to meeting the requirement of the Renewable Portfolio Standard (“RPS”) Enforcement Program to use at least 33 percent of the state’s energy from renewables by 2020.2 Eligible renewable

resources include biodiesel, biomass, hydroelectric and small hydro, Los Angeles Aqueduct hydro power plants, digester gas, fuel cells, geothermal, landfill gas, municipal solid waste, ocean thermal, ocean wave and tidal current technologies, renewable derived biogas, multi-fuel facilities using renewable fuels, solar photovoltaic, solar thermal electric, wind, and “other renewables.” LADWP provides electricity service to over 3.9 million residents in its service area, encompassing the City and parts of the Owens Valley. LADWP obtains electricity from various generating sources that use renewable energy, coal, natural gas, nuclear, hydroelectric facilities, and renewable resources (including solar and wind farms) to generate power. Current installed generation capacity is approximately 7,460 MW of power.

Based on available substructure maps from the City of LA Bureau of Engineering’s online Navigate LA database, the Project Sites receive electric power service from LADWP via an existing underground conduit in Vermont Avenue.

**Energy and Load Factor**

Electricity can be measured in two ways: power, which is the rate of energy being consumed (i.e., watts, kilowatts, or megawatts), or energy, which is the amount of energy consumed per unit time (i.e., watt-hours), which is defined as (“kWhr”). The formula for determining how energy is consumed is the following:

\[
\text{Energy (watt-hours)} = \text{Power (watts)} \times \text{time (hours)}
\]

A load factor is the ratio of the average load in kilowatts supplied during a designated period to the peak or maximum load in kilowatts occurring in that period. The formula for determining the load factor is the following:

\[
\text{Load Factor (\%)} = \left( \frac{\text{kwh} \div \text{hours} \div \text{kw}}{1} \right) \times 100\%
\]

The existing 30,788 and 13,325 square foot office buildings, and seven-story parking structure on Site 1 are served by two existing 200 ampere, 240/120 volt, three phase, four watt (200A, 240/120V, 3 PH, 4 W) LADWP electrical lines, two existing 600A 120/240V, 1 PH, 3 W electrical lines, and one 400A, 240V, 3 PH, 4 W electrical line. The existing 154,793 and 52,000 square foot office buildings, and two-story parking structure on Site 2 are served by an existing 4,000A, 480/277 V, 3 PH, 4 W LADWP electrical line and an 800A, 480/277 V, 3 PH, 4 W electrical line. The existing 29,292 square foot building on Site 3 is served by an existing 1,000-1,600 A, 208 V, 3 PH, 4 W LADWP electrical line.

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5. Renewable energy sources include biomass and waste (6 percent), geothermal (1 percent), small hydroelectric (1 percent), solar (1 percent), and wind (14 percent).

**Project Sites**

Site 1 consists of an existing two-story office building, a one-story office with rooftop parking, two surface parking lots, and a parking structure. Site 2 consists of an existing 12-story building, a four-story building, and a parking structure. Site 3 consists of a 4-story building and surface parking lot.

Electricity demand estimates have been prepared based on the existing building program and are summarized in Table 4.4-1 (Estimated Existing Electricity Demand), below.

<table>
<thead>
<tr>
<th>Existing Use Description</th>
<th>Annual Average Demand Rate (kWhr/unit/year)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Structure Size (sf)</th>
<th>Average Yearly Demand (kWhr/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-Story Office</td>
<td>13.32/sf</td>
<td>30,788 sf</td>
<td>410,096</td>
</tr>
<tr>
<td>One-Story Office</td>
<td>13.32/sf</td>
<td>13,325 sf</td>
<td>177,489</td>
</tr>
<tr>
<td>Seven-Story Parking</td>
<td>6.74/sf</td>
<td>235,248 sf</td>
<td>1,585,572</td>
</tr>
<tr>
<td>Structure</td>
<td></td>
<td></td>
<td><strong>Subtotal</strong></td>
</tr>
<tr>
<td><strong>Site 2</strong></td>
<td></td>
<td></td>
<td>2,173,157</td>
</tr>
<tr>
<td>Twelve-Story Office</td>
<td>13.32/sf</td>
<td>154,793 sf</td>
<td>2,061,842</td>
</tr>
<tr>
<td>Four-Story Office</td>
<td>13.32/sf</td>
<td>52,000 sf</td>
<td>692,640</td>
</tr>
<tr>
<td>2-Story Parking Structure</td>
<td>6.74/sf</td>
<td>14,010 sf</td>
<td>94,427</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Subtotal</strong></td>
</tr>
<tr>
<td><strong>Site 3</strong></td>
<td></td>
<td></td>
<td>2,848,909</td>
</tr>
<tr>
<td>Four-Story Office</td>
<td>13.32/sf</td>
<td>29,292 sf</td>
<td>390,169</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Subtotal</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>390,169</td>
</tr>
<tr>
<td><strong>Total Existing Electricity Demand</strong></td>
<td></td>
<td></td>
<td><strong>5,412,235</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup> CalEEmod version 2016.3.1 was used to calculate the electricity demand based on land use. See Appendix 4.2-1 to this Draft EIR.


**Natural Gas**

Southern California Gas Company (“SoCal Gas”) is responsible for providing natural gas supply to the County and City and is regulated by the California Public Utilities Commission and other state and federal agencies.

**Regional**

SoCal Gas is the principal distributor of natural gas in Southern California, providing retail and wholesale customers with transportation, exchange and storage services and also procurement services to most retail core customers. SoCal Gas is a gas-only utility and, in addition to serving the residential, commercial, and industrial markets, provides gas for enhanced oil recovery (“EOR”) and electric generation (“EG”) customers in Southern California. SoCal Gas’ natural gas system is the nation’s largest natural gas
distribution utility and serves a 20,000 square-mile area in Central and Southern California. The system supplies natural gas to 21.6 million customers through 5.9 million meters in more than 500 communities.7

Most natural gas consumed in Southern California is produced out of state.8 SoCalGas serves approximately 21.6 million customers in more than 500 communities.9 The availability of natural gas is based upon present conditions of gas supply and regulatory policies because SoCalGas is under the jurisdiction of the California Public Utilities Commission (“CPUC”) and federal regulatory agencies. In addition, SoCalGas makes available to its customers, energy efficiency programs with rebates and incentives for the purpose of reducing natural gas consumption.

SoCalGas obtains its gas resources from several sedimentary basins, including: the San Juan Basin in New Mexico, the Permian Basin in West Texas, Rocky Mountain, western Canada, and California.10

**Southwestern United States Gas Supplies**

Natural gas obtained from the Southwestern United States, especially the San Juan Basin in New Mexico, provides the majority of gas sold by SoCalGas. This gas is delivered to the Southern California region through the El Paso Natural Gas Company and the Transwestern Pipeline Company pipelines. The conventionally produced gas supplies from the San Juan Basin peaked in 1999 and have been declining at an annual rate of 3.0 percent, with an increase in the rate of decline in recent years. The Permian Basin has provided additional supplies, although increasing demand in Mexico for natural gas may reduce this supply source. There is currently a proposal to construct a North-South Pipeline from SoCalGas’ Adelanto compressor station near Victorville down to the Moreno pressure limiting station in Moreno Valley.11

**Rocky Mountain Gas Supplies**

Natural gas obtained from the Rocky Mountain sources is considered to be a viable alternative to the traditional source of natural gas in the Southwestern United States. These natural gas supplies are delivered to the Southern California region through the Kern River Gas Transmission Company’s pipeline. Access to Rocky Mountain gas is also available through pipeline interconnections with the San Juan Basin. Rocky Mountain gas has increasingly flowed to Midwestern and Pacific Northwest markets.12

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8 2016 California Gas Report, Table 1-SCG, page 96
10 The California Gas and Electric Utilities, 2016 California Gas Report, website:
11 Ibid.
12 Ibid.
Canadian Gas Supplies

Natural gas obtained from Canada and delivered to Southern California is not expected to change significantly. Only a small share of Southern California gas supplies come from Canada due to the high cost of transport.\(^{13}\)

Biogas

There is growing interest regarding biogas\(^{14}\) production potential in SoCalGas’ service territory from the following activities:

- non-hazardous-waste landfills,
- landfill diversion of organic waste material,
- wastewater treatment,
- concentrated animal feeding operations, and
- food/green waste processing.

When biogas is conditioned/upgraded to pipeline quality specifications it can be interconnected to a gas utility’s pipeline and distributed to a specific customer. Biomethane may also be consumed on-site for a variety of uses, including electrical power generation from internal combustion engines, fuel cells, and turbines, or as a fuel source for natural gas vehicles. Currently, there are instances where biogas is being vented naturally or flared to the atmosphere, which wastes this valuable renewable resource. In January 2014, the CPUC approved SoCalGas’ application to offer a Biogas Conditioning/Upgrading Services Tariff, which would meet the current and future needs of biogas producers seeking to upgrade their biogas for beneficial use.\(^{15}\)

Local

Based on substructure maps provided by the City, the Project Sites receive natural gas service via a SoCalGas operated 2-inch service on the east side of Vermont Avenue and a 6-inch service on the north side of 6th Street.

Project Sites

Site 1 consists of an existing two-story office building, a one-story office with rooftop parking, two surface parking lots, and a parking structure. Site 2 consists of an existing 12-story building, a four-story building, and a parking structure. Site 3 consists of a 4-story building and surface parking lot. The existing on-site natural gas system supplies the natural gas needs to these structures through the existing service described above.

\(^{13}\) Ibid., page 80.

\(^{14}\) Biogas is a mixture of methane and carbon dioxide produced by the bacterial degradation of organic matter.

Natural gas demand estimates have been prepared based on the existing equipment program and are summarized in Table 4.4-2 (Estimated Existing Natural Gas Demand), below.

<table>
<thead>
<tr>
<th>Existing Use Description</th>
<th>Annual Average Demand Rate (KBTU/unit/year)</th>
<th>Structure Size (sf)</th>
<th>Average Yearly Demand (KBTU/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1 Two-Story Office</td>
<td>10.46/sf</td>
<td>30,788 sf</td>
<td>322,042</td>
</tr>
<tr>
<td>One-Story Office</td>
<td>10.46/sf</td>
<td>13,325 sf</td>
<td>139,380</td>
</tr>
<tr>
<td>Seven-Story Parking Structure</td>
<td>0</td>
<td>235,248 sf</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>461,422</strong></td>
</tr>
<tr>
<td>Site 2 Twelve-Story Office</td>
<td>10.46/sf</td>
<td>154,793 sf</td>
<td>1,619,134</td>
</tr>
<tr>
<td>Four-Story Office</td>
<td>10.46/sf</td>
<td>52,000 sf</td>
<td>543,920</td>
</tr>
<tr>
<td>2-Story Parking Structure</td>
<td>0</td>
<td>14,010 sf</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>2,163,054</strong></td>
</tr>
<tr>
<td>Site 3 Four-Story Office</td>
<td>10.46/sf</td>
<td>29,292 sf</td>
<td>306,394</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>306,394</strong></td>
</tr>
<tr>
<td><strong>Total Existing Gas Demand</strong></td>
<td></td>
<td></td>
<td><strong>2,930,870</strong></td>
</tr>
</tbody>
</table>

*a CalEEmod version 2016.3.1 was used to calculate the natural gas demand based on land use. See Appendix 4.2-1 of this Draft EIR. Source: KPFF, 2017.*

**Transportation Energy**

According to the CEC, transportation accounts for nearly 37 percent of California’s total energy consumption and roughly 37 percent of the State’s greenhouse gas emissions. In 2015, California consumed 14.92 billion gallons of gasoline and 2.36 billion gallons of diesel fuel. Petroleum-based fuels currently account for approximately 92 percent of California’s transportation energy sources. California is currently working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs from the transportation sector, and reduce vehicle miles traveled (“VMT”). Overall, gasoline consumption in California has declined and the CEC predicts that the demand for gasoline will continue to decline over the next 10 years. Eventually, there will be an increase in the use of alternative fuels, such as natural gas, biofuels, and electricity.

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17 California Board of Equalization, Net Taxable Gasoline Gallons 10 Year and Net Taxable Diesel Gallons 10 Year Report.
Regulatory Framework

**Federal**

No federal regulations related to electricity and natural gas infrastructure and transportation energy are applicable to the Project.

**State**

The CEC and CPUC have jurisdiction over Investor Owned Utilities ("IOUs") in California. The CEC also collects information for LADWP.

**Senate Bill 1389**

Senate Bill 1389 (Public Resources Code Sections 25300-25323) requires the CEC to develop an integrated plan for electricity, natural gas, and transportation fuels. The CEC must prepare and update policy recommendations every two years to conserve these resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state’s economy, and protect the public health and safety. The most recently completed report, the *2015 Integrated Energy Policy Report*, addresses strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan. The report analyzes and discusses the following:

- building energy efficiency standards;
- the impact of drought on California’s energy system;
- achieving 50 percent renewables by 2030;
- Renewable Action Plan status;
- the California Energy Demand Forecast;
- the Natural Gas Outlook;
- methane emissions;
- the Transportation Energy Demand Forecast;
- Alternative and Renewable Fuel and Vehicle Technology Program benefits updates;
- landscape-scale planning efforts;
- transmission projects;
- the California Independent System Operator energy imbalance market;
- the Desert Renewable Energy Conservation Plan;
- climate change vulnerability and adaptation options;
- update on electricity infrastructure in Southern California;
- an update on trends in California’s sources of crude oil; and
4.4 Energy

- an update on California’s nuclear plants.\(^\text{19}\)

**2015 Clean Energy and Pollution Reduction Act**

In 2015, the State enacted legislation intended to improve air quality, provide aggressive reductions in energy dependency, and boost the employment of renewable power. The 2015 Clean Energy and Pollution Reduction Act, also known as Senate Bill (SB) 350, requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. SB 350 establishes annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses by January 1, 2030.

**Energy Efficiency Act (AB 802)**

The Energy Efficiency Act (AB 802) provides aggressive directives to increase the energy efficiency of existing buildings, requires that access to building performance data for nonresidential buildings be provided by energy utilities and encourages pay-for-performance incentive-based programs. This paradigm shift will allow California building owners a better and more effective way to access whole-building information and at the same time will help address climate change, and deliver cost-effective savings for ratepayers.

**Energy Efficiency Act (AB 793)**

The Energy Efficiency Act (AB 793) is intended to promote and provide incentives to residential or small and medium-sized business utility customers that acquire energy management technology for use in their home or place of business. AB 793 requires energy utilities to develop a plan to educate residential customers and small and medium business customers about the incentive program.\(^\text{20}\)

**Title 24 of the California Code of Regulations**

Title 24 of the California Code of Regulations (“CCR”) is the California Building Code which governs all aspects of building construction. Included therein are standards mandating energy efficiency measures for new construction that are updated every three years to allow new energy efficiency technologies to be considered. These energy measures are known as the State Building Energy Efficiency Standards. The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those in the Title 24 guidelines.

**California Green Building Standards Code**

The 2016 California Green Building Standards Code, referred to as CALGreen, became effective on January 1, 2017. CALGreen sets minimum standards that all new structures must meet to reduce the State’s overall carbon output. Local jurisdictions retain the administrative authority to exceed the new CALGreen


standards. The CALGreen standards are set forth in Part 11 of Title 24 of the California Code of Regulations.

CALGreen requires new buildings to reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and includes low pollutant emitting finish materials. CALGreen’s mandatory measures establish a minimum for green construction practices and incorporate environmentally responsible buildings into the everyday fabric of California cities.

CALGreen has mandatory measures as well as more stringent, voluntary provisions that have been placed in the appendix for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use in buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

Key optional measures are included in a two-tiered system designed to allow jurisdictions to adopt codes that go beyond the State mandatory provisions. The non-residential tiers include increased reduction in energy usage by 15 or 30 percent and increased reduction in potable water use, parking for clean air vehicles, cool roofs, construction waste diversion, use of recycled materials, and use of low-emitting resilient flooring and thermal insulation.

**Western Electricity Coordinating Council and the North American Electric Reliability Council**

The Western Electricity Coordinating Council (“WECC”) is a voluntary consortium of electrical power providers that is responsible for coordinating and promoting electricity reliability from the Canadian provinces of Alberta and British Columbia in the north of its jurisdiction to the northern Mexican State of Baja California in the south of its jurisdiction, and the 14 western states of the United States.\(^{21}\) The LADWP is a member of the WECC. The WECC has implemented Standard BAL-STD-002-0 to require reliable operation of the power system while ensuring adequate generating capacity at all times. As a means of ensuring power system reliability, the LADWP maintains an extra reserve margin of power generation resources in the event of a power system disturbance. In order to determine how much extra generation reserves are needed, the LADWP adheres to the WECC Reliability Standard. WECC Standard BAL-STD-002-0 requires its providers to:

- Supply requirements for load variations;
- Replace generating capacity and energy lost due to forced outages of generation or transmission equipment;
- Meet on-demand obligations; and
- Replace energy lost due to curtailment of interruptible imports.

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The 2016 California Gas Report presents a comprehensive outlook for natural gas requirements and supplies for California through the year 2035. This report is prepared in even-numbered years, followed by a supplemental report in odd-numbered years, in compliance with California PUC Decision D.95-01-039. The below projections in the California Gas Report are for long-term planning and do not necessarily reflect the day-to-day operational plans of the utilities.

California natural gas demand, including volumes not served by utility systems, is expected to decrease at a rate of 1.4 percent per year from 2016 to 2035. The forecast decline is due to a combination of moderate growth in the Natural Gas Vehicle (“NGV”) market and across-the-board declines in all other market segments: residential, commercial, electric generation, and industrial markets.

Residential gas demand is expected to decrease at an annual average rate of 0.5 percent. Demand in the commercial market is expected to decline at an annual rate of 1.0 percent, and demand in the industrial market (non-refinery) is expected to decrease at an annual rate of 1.7 percent. Aggressive energy efficiency programs make a significant impact in managing growth in the residential, commercial, and industrial markets. Gas demand in the refinery industrial market sector is forecast to decline approximately 0.34 percent per year.

The electricity generation sector includes all commercial/industrial cogeneration, Enhanced Oil Recovery (“EOR”) -related cogeneration, and non-cogeneration electric generation. The forecast of electric generation (“EG”) load is subject to a high degree of uncertainty. Forecast uncertainty is in large part due to load sensitivity to weather conditions, the expiration of existing contracts with cogeneration facilities, and the construction and retirement of power plants and transmission lines. Additionally, many once through cooling (“OTC”) plants in California are scheduled to either retire or repower during the forecasted period. These are mostly gas-fired thermal plants, located near the coast, that use ocean water for cooling.

For electricity demand in California, SoCalGas relies on the CEC California Energy Demand 2016-2026 Revised/Final Forecast, dated January 2016. SoCalGas selected the Mid Energy Demand scenario with the Mid Additional Achievable Energy Efficiency (“AAEE”) scenario. For the first time in CEC forecasts, the Mid AAEE scenario shows a declining, long-term, state-wide energy demand; per the forecasts, Southern California energy demand will decline at a faster rate than that of Northern California.

SoCalGas engages in a number of energy efficiency and conservation programs designed to help customers identify and implement ways to benefit environmentally and financially from energy efficiency investments. Programs administered by SoCalGas include services that help customers evaluate their energy efficiency options and adopt recommended solutions, as well as simple equipment retrofit improvements, such as rebates for new hot water heaters.

Local

County of Los Angeles

The Los Angeles County Board of Supervisors adopted the Los Angeles County Green Building Standards Code (Title 31). The 2016 CalGreen Standards, as published by the California Building Standards Commission, are adopted and incorporated, by reference, into Title 31. Title 31 will improve public health,

safety, and general welfare by enhancing the design and construction of buildings through sustainable building concepts that reduce negative environmental impacts. This includes a reduction in energy, water, and other natural resources, and minimizing solid waste.

City of Los Angeles

Los Angeles Green Building Code

The following types of projects are subject to the Los Angeles Green Building Code:

- All new buildings (residential and non-residential);
- All additions (residential and non-residential); and
- Alterations with building valuations over $200,000 (residential and non-residential).

The Los Angeles Green Building Code is based on the 2016 CALGreen Standards.

2016 Final Power Integrated Resource Plan

On January 13, 2017, LADWP adopted the 2016 Power Integrated Resource Plan (“IRP”), which provides a 20-year roadmap to guide LADWP in meeting the future energy needs by forecasting demand for energy and determine how that demand will be met by executing new projects and replacement projects and programs. The IRP is an update of the 2015 IRP, and provides the required reliability and necessary flexibility to adapt to economic, environmental, and regulatory conditions. Major changes from the 2015 IRP include Senate Bill 350, which was signed into law requiring a 55 percent renewable portfolio standard by 2030 and increasing to 65 percent by 2036; the completion of the Maximum Distribution Renewable Energy Penetration Study (“MDRPES”); and a natural gas prices and renewable energy costs have been revised downwards compared to the 2014 IRP.23

The 2016 IRP incorporates updates to reflect the latest load forecast, fuel price, and projected renewable price forecasts, and other numerous modeling assumptions. This IRP considers a 20-year planning horizon to guide LADWP as it executes major new and replacement projects and programs. The overriding purpose is to provide a framework to assure the future energy needs of LADWP customers are met in a manner that balances the following key objectives: maintaining a high level of electric service reliability; keeping energy rates competitive; and exercising environmental stewardship.24

ENVIRONMENTAL IMPACTS

Methodology

The environmental impacts of the Project with respect to energy are determined based on the proposed increase in electricity, natural gas, and fuel demand relative to the capacity of existing and proposed infrastructure. Existing energy demands are compared to the Project’s current energy demands and electricity and natural gas infrastructure capacity, including planned improvements associated with the Project.

Thresholds of Significance

Appendix G to the State CEQA Guidelines does not address impacts to energy supplies or utilities. The County has identified the following question with respect to energy, which is used as the significance threshold in this Draft EIR:

- Would the project create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

An affirmative answer to this question would represent a significant impact.

In addition, although not a significance threshold, Appendix F to the State CEQA Guidelines provides that, in order to assure that energy implications are considered in project decisions, EIRs shall include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, or unnecessary consumption of energy. The means of achieving this goal shall include:

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

Analysis with respect to Appendix F is also provided in this Section.

Project Design Elements

The Project would incorporate sustainability features set forth in the County and City Green Building Ordinances. Such features would include the following measures, or equivalent measures capable of achieving the same results at minimum:

- Installation of energy efficient heating and cooling systems, equipment, and control systems;
- Installation of efficient lighting and lighting control systems;
- Installation of light colored “cool” roofs to more effectively reflect the sun’s energy from the roof’s surface to reduce the roof surface temperature, and use of shade structures to reduce the heat island effect;
- Incorporation of energy saving features into building design (e.g., use of passive controls, shading, solar energy, ventilation, appropriate building materials), as appropriate;
- Prohibition of HVAC, refrigeration, and fire suppression equipment that contains banned chlorofluorocarbons; and
- Use of Energy Star appliances.

Impact Analysis

Threshold 4.4-1: Would the project create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
4.4 Energy

Construction

Electricity

Electrical power would be consumed to construct the new buildings and facilities of the Project. Typical uses include temporary power for lighting, equipment, and construction trailers. Based on preliminary estimates provided by the prospective general contractors, temporary construction power demands were determined for the Project Sites. Over the course of construction total electricity consumption is estimated to be approximately 5,250,000 kWhr for Site 1, approximately 1,600,000 kWhr for Site 2, and approximately 800,000 kWhr for Site 3. The corresponding annual temporary construction power estimates would be 2,625,000 kWhr/yr for Site 1, 1,800,000 kWhr/yr for Site 2, and 400,000 kWhr/yr for Site 3. While these construction estimates are slightly higher than the existing consumption estimates for all three sites, they would be temporary in nature and they would be within available capacity as they are within the projected consumption associated with operation of the Project, as discussed under Operation below. Furthermore, as discussed below, this level of consumption has been determined to be within the available capacity of the electrical generation system. Therefore, impacts on electricity supply associated with short-term construction activities would be less than significant.

Natural Gas

No natural gas usage is expected to occur during construction. Therefore, impacts on natural gas supply associated with short-term construction activities would not occur.

Construction impacts associated with the Project’s electrical and gas infrastructure upgrades would primarily be confined to trenching and other activities required to connect the Project buildings with supply lines that are typically located within the adjacent roadway right-of-way. Infrastructure improvements would comply with all applicable LADWP, SoCal Gas, and City requirements, which would minimize impacts to existing energy systems and to adjacent properties. To reduce any temporary pedestrian access and traffic impacts during any necessary off-site energy infrastructure improvements, a construction management plan would be implemented as discussed in Section 4.14, Transportation, of this Draft EIR to ensure safe pedestrian and vehicular travel. Specifically, the construction management plan would include closure information, detour plans, protection barriers, and flag men to ensure pedestrian and vehicular safety. Therefore, Project impacts on energy infrastructure associated with construction activities would be less than significant.

Transportation Energy

Construction of the Project is anticipated to occur over an approximately five-year period between 2018 and 2023. Phase 1 would begin in 2018 and last approximately three years, during which Sites 1 and 3 would be redeveloped. Site 1 construction, including construction of the Replacement Shatto Structure, would last throughout that period. Site 3 construction would last approximately 20 months beginning in 2019 and concluding in 2020. Phase 2 construction, which is the reuse and redevelopment of Site 2, would begin in year 2021 after completion of Phase 1 and the relocation of existing County employees on Site 2 to Site 1, and conclude in year 2023.

During construction of the Project, short-term transportation-related energy consumption would result primarily from petroleum-based fuels used to power off-road construction vehicles and equipment on the Project Site, construction workers traveling to and from the Project Site, and delivery and haul truck trips.

The transportation fuel required by construction workers would depend on the total number of worker trips estimated for the duration of construction activity. Based on construction plans prepared for the Project, there could be a maximum of 225 construction workers at Site 1 at the peak when finishing of the Site 1 Tower overlaps with the construction of the Replacement Shatto Structure. Caltrans found that the statewide average fuel economy for all vehicle types (automobiles, trucks, and motorcycles) is projected at 22.711 miles per gallon (mpg) and the worst-case estimate for diesel trucks is projected at 6.178 mpg in 2015, and 22.816 miles per gallon (mpg) and the worst-case estimate for diesel trucks is projected at 6.272 mpg in 2020.\(^\text{26}\)

**Site 1**

Assuming all construction worker vehicles have an average fuel economy consistent with the Caltrans projected 2015 average for mpg for gasoline and diesel, based on the maximum projected number of workers during each phase, and on Site 1’s estimated construction VMT of 5.91 million, including worker and delivery trips, Site 1 construction would use approximately 260,072 gallons of gasoline.\(^\text{27}\) Construction on Site 1 would also use approximately 14,675 gallons of diesel, assuming heavy-duty construction equipment (such as haul route trucks) is primarily diesel-fueled.\(^\text{28}\) In 2014, California consumed a total of 343,568 thousand barrels (or 10.822 billion gallons) of gasoline for transportation and 2.36 billion gallons of diesel fuel.\(^\text{29}\) This would represent 0.0002 percent of the statewide gasoline consumption and 0.0006 percent of the statewide diesel consumption. The expected gasoline and diesel fuel gas for Site 1 construction would be negligible compared with statewide supplies and would be accommodated by local or regional suppliers and vendors.

**Site 2**

Assuming all construction worker vehicles have an average fuel economy consistent with the Caltrans projected 2020 average for mpg for gasoline and diesel, based on the maximum projected number of workers during each phase, and on Site 2 construction’s estimated VMT of 2.08 million, Site 2 construction would use approximately 91,200 gallons of gasoline.\(^\text{30}\) Construction on Site 2 would use approximately 7,659 gallons of diesel, assuming heavy-duty construction equipment (such as haul route trucks) is


\(^{27}\) 5,906,515 VMT / 22.711 mpg = 260,072 gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.

\(^{28}\) 90,660 VMT / 6.178 mpg = 14,675 gallons of diesel fuel. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.


\(^{30}\) 2,080,823 VMT / 22.816 mpg = 91,200 gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.
primarily diesel-fueled. This would represent 0.0008 percent of the statewide gasoline consumption and 0.0003 percent of the statewide diesel consumption. The expected gasoline and diesel fuel gas for Site 2 construction would be negligible compared with statewide supplies and would be accommodated by local or regional suppliers and vendors.

Site 3

Assuming all construction worker vehicles have an average fuel economy consistent with the Caltrans projected 2015 average for mpg for gasoline and diesel, based on the maximum projected number of workers during each phase, and on Site 3 construction’s estimated VMT of 554,029, Site 3 construction would use approximately 24,395 gallons of gasoline. Construction on Site 3 would use approximately 10,181 gallons of diesel, assuming heavy-duty construction equipment (such as haul route trucks) is primarily diesel-fueled. This would represent 0.0002 percent of the statewide gasoline consumption and 0.0004 percent of the statewide diesel consumption. The expected gasoline and diesel fuel gas for Site 3 construction would be negligible compared with statewide supplies and would be accommodated by local or regional suppliers and vendors.

Compliance with Regulations

With regard to truck trips for hauling demolition material and exported soil, the County and City have adopted plans and regulations including the Los Angeles County Green Building Standards Code (County Code Title 31), and the City of Los Angeles Green Building Code which require the reduction, recycling, and reuse of solid waste generated in their respective jurisdictions. The Project’s compliance with these regulations would further reduce the number of trips and fuel required to transport construction debris and exported soil, and in turn would reduce the unnecessary consumption of energy.

With compliance with Title 31 and the Los Angeles Green Building Code, impacts regarding transportation energy would be less than significant.

Operation

Electricity

The Project would increase the demand for electricity resources. The estimated projected electrical loads are provided in Table 4.4-3 (Estimated Proposed Electricity Demand), below.

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31 48,040 VMT / 6.272 mpg = 7,659 gallons of diesel fuel. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.

32 554,029 VMT / 22.711 mpg = 24,395 gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.

33 62,900 VMT / 6.178 mpg = 10,181 gallons of diesel fuel. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.
### Table 4.4-3

**Estimated Proposed Electricity Demand**

<table>
<thead>
<tr>
<th>Proposed Use Description</th>
<th>Average Yearly Use (kWhr/unit/year)(a)</th>
<th>Structure Size (sf)</th>
<th>Average Yearly Demand (kWhr/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>13.86/sf</td>
<td>6,350 sf</td>
<td>88,011</td>
</tr>
<tr>
<td>Restaurant</td>
<td>447.90/sf</td>
<td>3,650 sf</td>
<td>1,634,835</td>
</tr>
<tr>
<td>Parking Structure</td>
<td>6.74/sf</td>
<td>800,002 sf</td>
<td>5,392,013</td>
</tr>
<tr>
<td>Office</td>
<td>13.32/sf</td>
<td>461,000 sf</td>
<td>6,140,520</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td>13,255,379</td>
</tr>
<tr>
<td><strong>Site 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>13.86/sf</td>
<td>7,500 sf</td>
<td>103,950</td>
</tr>
<tr>
<td>Residential: Apt</td>
<td>3,116.54/du</td>
<td>246 du</td>
<td>766,668</td>
</tr>
<tr>
<td>Parking Structure</td>
<td>6.74/sf</td>
<td>116,324 sf</td>
<td>784,024</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td>1,654,642</td>
</tr>
<tr>
<td><strong>Site 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>4,579/sf</td>
<td>72 du</td>
<td>329,688</td>
</tr>
<tr>
<td>Community Recreation Center</td>
<td>13.32/sf</td>
<td>13,200 sf</td>
<td>175,824</td>
</tr>
<tr>
<td>Parking Structure</td>
<td>6.74/sf</td>
<td>51,591 sf</td>
<td>347,723</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td>853,235</td>
</tr>
<tr>
<td><strong>Total Proposed Electricity Demand</strong></td>
<td></td>
<td></td>
<td>15,763,256</td>
</tr>
<tr>
<td><strong>Total Existing Electricity Demand</strong></td>
<td></td>
<td></td>
<td>5,412,235</td>
</tr>
<tr>
<td><strong>Net Increase in Electricity Demand</strong></td>
<td></td>
<td></td>
<td>10,351,023</td>
</tr>
</tbody>
</table>

(a) CalEEmod version 2016.3.1 was used to calculate the electricity demand based on land use. Source: KPFF, 2017.

Will Serve letter requests were sent to LADWP for each Project Site to determine if there is sufficient capacity to serve each Project Site. LADWP confirmed that it has sufficient facilities in the area to serve the Project (all 3 Sites). As shown in Exhibit 4 to Appendix 4.16-1 to this Draft EIR, LADWP indicated that service can be provided to Site 1 (LADWP Metropolitan Service Planning letter dated November 18 2016); Site 2 (LADWP letter dated January 6, 2017); and Site 3 (LADWP Metropolitan Service Planning letter dated December 13, 2016). Thus, impacts related to electrical services would be less than significant.

**Natural Gas**

The Project would increase the demand for natural gas resources. The estimated projected electrical loads are provided in Table 4.4-4 (Estimated Proposed Natural Gas Demand), below.

Will serve letter requests were sent to the SoCal Gas for each Project Site to determine if there is sufficient capacity to serve each Project Site. Based on the response from the SoCal Gas (Exhibit 5 to Appendix 4.16-1), SoCal Gas confirmed that it has sufficient facilities in the area to serve the Project (all 3 Project Sites). Thus, impacts related to natural gas would be less than significant.
Table 4.4-4
Estimated Proposed Natural Gas Demand

<table>
<thead>
<tr>
<th>Proposed Use Description</th>
<th>Average Yearly Use (KBTU/unit/year)(^a)</th>
<th>Structure Size (sf)</th>
<th>Average Yearly Demand (KBTU/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>1.65/sf</td>
<td>6,350 sf</td>
<td>10,478</td>
</tr>
<tr>
<td>Restaurant</td>
<td>2,310/sf</td>
<td>3,650 sf</td>
<td>8,431,500</td>
</tr>
<tr>
<td>Parking Structure</td>
<td>0</td>
<td>800,002 sf</td>
<td>0</td>
</tr>
<tr>
<td>Office</td>
<td>10.46/sf</td>
<td>461,000 sf</td>
<td>4,822,060</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>13,264,038</td>
</tr>
<tr>
<td>Site 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>1.65/sf</td>
<td>7,500 sf</td>
<td>12,375</td>
</tr>
<tr>
<td>Residential: Apt</td>
<td>8,257/du</td>
<td>246 du</td>
<td>2,031,222</td>
</tr>
<tr>
<td>Parking Structure</td>
<td>0</td>
<td>116,324 gsf</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>2,043,597</td>
</tr>
<tr>
<td>Site 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>18,229/sf</td>
<td>72 du</td>
<td>1,312,488</td>
</tr>
<tr>
<td>Community Recreation</td>
<td>10.46/sf</td>
<td>13,200 sf</td>
<td>138,072</td>
</tr>
<tr>
<td>Center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Structure</td>
<td>0</td>
<td>51,591 sf</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>1,450,560</td>
</tr>
<tr>
<td>Total Proposed Natural Gas Demand</td>
<td></td>
<td></td>
<td>16,758,195</td>
</tr>
<tr>
<td>Total Existing Natural Gas Demand</td>
<td></td>
<td></td>
<td>2,930,870</td>
</tr>
<tr>
<td>Net Increase in Natural Gas Demand</td>
<td></td>
<td></td>
<td>13,827,325</td>
</tr>
</tbody>
</table>

\(^a\) CalEEmod version 2016.3.1 was used to calculate the natural gas demand based on land use.


**Transportation Energy**

The Project Sites are served by Metro, DASH, and Foothill Transit bus lines including Metro Local 20 and Metro Rapid 720 which run on Wilshire Boulevard, and Metro Local 204 and Metro Rapid 754 which run on Vermont Avenue. The Project Sites are also served by the Metro Rail Red and Purple Lines from the Metro Rail Wilshire/Vermont Station located at the northeast corner of Wilshire Boulevard and Vermont Avenue. The entrance to the Wilshire/Vermont Station is located approximately 700 feet south of Site 2, 1000 feet south of Site 1 and 1700 feet south of Site 3. The Metro Red and Purple Lines provide access to the regional rail transit system, including the Metro Blue, Gold, Orange and Exposition Lines, and to regional and commuter rail lines, including Metrolink and Amtrak, through Union Station. All of these options provide residents, employees, and guests with various public transportation opportunities and potentially reduce vehicle miles traveled, resulting in a reduction in the consumption of petroleum-based fuels.

**Site 1**

Transportation fuels, primarily gasoline and diesel, would be provided by local or regional suppliers. Based
on Site 1’s estimated net VMT of 8.17 million per year,\textsuperscript{34} and assuming that Site 1’s mix of vehicle types (automobiles, trucks, and motorcycles) have an average fuel economy of 22.816 mpg for 2020,\textsuperscript{35} approximately 357,912 gallons of fuel would be required in a year.\textsuperscript{36} In 2014, California consumed a total of 343,568 thousand barrels (or 10.822 billion gallons) of gasoline for transportation.\textsuperscript{37} This would represent less than 0.003 percent of the statewide gasoline consumption. Furthermore, alternative-fueled electric, and hybrid vehicles, to the extent these types of vehicles would be used by visitors to Site 1, would reduce Site 1 development’s consumption of gasoline and diesel. As such, impacts regarding transportation energy use on Site 1 would be less than significant.

\textbf{Site 2}

Transportation fuels, primarily gasoline and diesel, would be provided by local or regional suppliers. Based on Site 2’s estimated net VMT of 568,062 million per year,\textsuperscript{38} and assuming that Site 2’s mix of vehicle types (automobiles, trucks, and motorcycles) have an average fuel economy of 22.816 mpg,\textsuperscript{39} approximately 24,898 gallons of fuel would be required in a year.\textsuperscript{40} This would represent less than 0.0002 percent of the statewide gasoline consumption. Furthermore, alternative-fueled electric, and hybrid vehicles, to the extent these types of vehicles would be used by visitors to Site 2, would reduce Site 2 development’s consumption of gasoline and diesel. As such, impacts regarding transportation energy use on Site 2 would be less than significant.

\textbf{Site 3}

Transportation fuels, primarily gasoline and diesel, would be provided by local or regional suppliers. Based on Site 3’s estimated net VMT 701,238 million per year,\textsuperscript{41} and assuming that Site 3’s mix of vehicle types (automobiles, trucks, and motorcycles) have an average fuel economy of 22.816 mpg,\textsuperscript{42} approximately

\textsuperscript{34} Operational VMT derived from the Air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.
\textsuperscript{36} \(8,166,117 \text{ VMT} / 22.816 \text{ mpg} = 357,912 \text{ gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.}
\textsuperscript{38} Operational VMT derived from the Air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.
\textsuperscript{40} \(568,062 \text{ VMT} / 22.816 \text{ mpg} = 24,898 \text{ gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.}
\textsuperscript{41} Operational VMT derived from the Air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.
30,734 gallons of fuel would be required in a year.\(^{43}\) This would represent less than 0.0003 percent of the statewide gasoline consumption. Furthermore, alternative-fueled electric, and hybrid vehicles, to the extent these types of vehicles would be used by visitors to Site 3, would reduce Site 3 development’s consumption of gasoline and diesel. As such, impacts regarding transportation energy use on Site 3 would be less than significant.

**Combined Sites**

In total, operation of the Project on Sites 1, 2, and 3 would consume approximately 413,544 gallons of fuel per year. This would represent approximately 0.0035 percent of the statewide gasoline consumption which is within the available capacity. This estimate does not take into account the use of alternative-fueled electric and hybrid vehicles and other more energy efficient vehicle types.\(^{44}\) As such, impacts of the Project regarding transportation energy would be less than significant.

**Discussion Regarding Public Resources Code Section 21100(b)(3)**

Public Resources Code Section 21100(b)(3) requires EIRs to include a discussion of 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* (emphasis added).

Appendix F of the CEQA Guidelines provides a list of energy-related items that may be included throughout the various chapters of an EIR. In addition, while not described as thresholds for determining the significance of impacts related to energy, Appendix F provides the following items that may be considered in the energy analysis to the extent relevant and applicable:

- The project’s energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project’s life cycle including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; or
- The project’s projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In addition to this Section of the Draft EIR, other sections of the Draft EIR address these subjects, including but not limited to, Section 4.2, Air Quality, Section 4.6, Greenhouse Gas Emissions, Section 4.14, Transportation, Section 4.16, Utilities, and Section 5.0, Alternatives.

Further, as noted above, Appendix F to the State CEQA Guidelines provides that, in order to assure that energy implications are considered in project decisions, EIRs shall include a discussion of the potential

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\(^{43}\) 701,238 VMT / 22.816 mpg = 30,734 gallons of gasoline. Construction VMT derived from the air quality trips and VMT model sheets, included Appendix 4.2-1 to this Draft EIR.

\(^{44}\) Each Project Site provides electric vehicle charging stations.
energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, or unnecessary consumption of energy. The means of achieving this goal shall include:

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

**Decreasing Per Capita Energy Consumption**

All new development in California is required to be designed and constructed in conformance with State Building Energy Efficiency Standards outlined in Title 24 of the CCR. As set forth in Regulatory Requirement RR EN-1, the Project would be designed and built in accordance with the 2016 standards of Title 24, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, as set forth in the Los Angeles County Green Building Standards Code (Sites 1 and 3), and LA Green Building Code (Site 2). These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and illuminated signs. In addition, as set forth in the approved Water Supply Assessment, the Project will incorporate the following conservation measures:

**Site 1**

- High Efficiency Toilets with a flush volume of 1.1 gallons per flush
- Domestic Water Heating System located in close proximity to point(s) of use: For typical office Levels- electric water heaters are provided at floors 2, 5, 8, and 11 to supply hot water to lavatories for the floor above, below, and the floor on which the heater is located; for Terrace Level - dedicated electric heater(s) is provided for Showers and Restroom Lavatories; for Ground Floor – a dedicated electric heater is provided for Restroom Lavatories
- Individual metering is provided for each retail space at Ground Level and separate metering is provided for the Office Level use (single use tenant)
- Tankless water heaters (InstaHot) are provided for all pantry sink locations.
- Drip/Subsurface Irrigation (Micro-Irrigation) is provided for 100 percent of the irrigation system
- Proper Hydro-zoning/Zoned Irrigation (groups plants with similar water requirements together)
- Drought Tolerant Plants: 50 percent of total landscaping

**Site 2**

- Proper Hydro-zoning/Zoned Irrigation (groups plants with similar water requirements together)
- Drought Tolerant Plants: 50 percent of total landscaping

**Site 3**

- Proper Hydro-zoning/Zoned Irrigation (group plants with similar water requirements together)
- Drought Tolerant Plants: 50 percent of total landscaping
The incorporation of the Title 24 standards into the Project as well as the additional conservation measures incorporated in the building design would ensure that the Project would not result in the inefficient, unnecessary, or wasteful consumption of energy.

**Decreasing Reliance on Fossil Fuels**

Most energy consumption related to fossil fuels is associated with transportation. As described in Section 4.14, Transportation and Traffic, of this Draft EIR, the Project shall develop and implement a TDM program to promote non-auto travel and reduce the use of single-occupant vehicle trips. The strategies in the TDM program may include, but are not necessarily limited to, the following:

- TDM-related information available in common area;
- Bicycle amenities such as racks and showers;
- Incentives for using alternative travel modes;
- Parking incentives; and
- Contribution to the City’s Bicycle Plan Trust Fund for implementation of bicycle improvements in the Project area.

The combined effect of the various strategies implemented as part of the TDM program would result in a reduction in peak hour trip generation by offering services, actions, specific facilities, etc., aimed at encouraging use of alternative transportation modes. For the Project, a TDM trip reduction credit of 10 percent for Site 1 office workers was assumed as an achievable but conservative estimate. Accordingly, the TDM program would be expected to result in a reduction of 301 daily trips under Phase 1, including 50 during the morning peak hour and 61 during the afternoon peak hour. The TDM program would be expected to result in a reduction of 316 daily trips upon completion of Phase 2, including 52 during the morning peak hour and 65 during the afternoon peak hour.

It should also be noted that the 2016-2040 Regional Transportation Plan/Sustainable Community Strategy states that the Project Site is located in a High Quality Transit Area (HQTA), which is defined as an area within one-half mile of a fixed guideway transit stop. The Project Sites are served by the Metro Rail Red and Purple Lines from the Metro Rail Wilshire/Vermont Station located at the northeast corner of Wilshire Boulevard and Vermont Avenue. The Project would involve a mixed-use project in a HQTA, within walking distance of existing bus lines and transit stations. In addition, as set forth in Regulatory Requirement RR EN-1, the Project would provide electric vehicle charging stations in accordance with the requirements set forth in the Los Angeles County Green Building Standards Code (Sites 1 and 3), and LA Green Building Code (Site 2), and would provide bicycle parking, which would maximize the potential for mobility and accessibility for people and reduce the overall consumption of fuel required for transportation, and would thus not result in the wasteful, inefficient, and unnecessary consumption of energy resources.

**Increasing Reliance on Renewable Energy Sources**

**LADWP Power Generation**

As previously discussed, the LADWP utilizes renewable energy sources and is committed to meeting the requirement of the RPS Enforcement Program to use are least 33 percent of the State’s energy from
4.4 Energy

Project Design

The Project would include conduit to support the installation of solar generating panels on the roof of the new office building on Site 1 to potentially provide an alternative renewable source of power for the new County office building.

The incorporation of renewable energy in the generating portfolio of LADWP, the electric service provider, to the Project, coupled with the inclusion of solar generating infrastructure within the Site 1 Project, would ensure that the Project would not result in the inefficient, unnecessary, or wasteful consumption of energy.

CUMULATIVE IMPACTS

The geographic context for the cumulative analysis of electricity is LADWP’s service area and the geographic context for the cumulative analysis of natural gas is SoCal Gas’ service area. The geographic context for transportation energy use is the City of Los Angeles. Growth within these geographies is anticipated to increase the demand for electricity, natural gas, and transportation energy, as well as the need for energy infrastructure, such as new or expanded energy facilities.

Electricity

Buildout of the Project, related projects, and additional growth forecast to occur in the City would increase electricity consumption during project construction and operation and, thus, cumulatively increase the need for energy supplies and infrastructure capacity, such as new or expanded energy facilities. LADWP forecasts that its net energy for load in the 2023 fiscal year (the project buildout year) will be 28,253 GigaWatt-hours (GWhr) of electricity. Based on the Project’s estimated net new electrical consumption of 10.35 GWhr and LADWP’s forecast of 28,253 GWhr, the Project would account for approximately 0.037 percent of LADWP’s projected net energy load for the Project’s build-out year. Furthermore, there are 115 related projects within a 2-mile radius. The related projects consist of multifamily residential, schools, hotels, theaters, and commercial uses. The total increase in energy demand for the related projects is approximately 55.53 GWhr. Combined with the proposed Project, the net increase in energy demand is approximately 65.88 GWhr. The estimated net increase in energy demand resulting from the buildout of related projects combined with the proposed project, would represent approximately 0.23 percent of the LADWPs forecast for the net energy load in the fiscal year 2023. Exhibit 8 to Appendix 4.16-

48 The Project’s electricity demand of 10,351,023 kilowatt-hours per year (kWhr, see Table 4.4-3) is equal to 10.35 GWh if considered within the LADWP’s total generating capacity for the year of 28,253 GWh.
1 of this Draft EIR provides a breakdown of the related projects and associated energy consumption. Although future development would result in the irreversible use of renewable and non-renewable electricity resources during project construction and operation which could limit future availability, the use of such resources would be on a relatively small scale and would be consistent with growth expectations for LADWP’s service area. Furthermore, like the Project, during construction and operation, other future development projects would be required to incorporate energy conservation features, comply with applicable regulations including CALGreen and State energy standards under Title 24, and incorporate mitigation measures, as necessary. Accordingly, the Project’s contribution to cumulative impacts related to electricity consumption would not be cumulatively considerable and, thus, would be less than significant.

Electricity infrastructure is typically expanded in response to increasing demand, and system expansion and improvements by LADWP are ongoing. As described in LADWP’s 2016 Power Integrated Resource Plan, LADWP would continue to expand delivery capacity as needed to meet demand increases within its service area at the lowest cost and risk consistent with LADWP’s environmental priorities and reliability standards. LADWP has indicated that the Power Integrated Resource Plan incorporates the estimated electricity requirement for the Project. The Power Integrated Resource Plan takes into account future energy demand, advances in renewable energy resources and technology, energy efficiency, conservation, and forecast changes in regulatory requirements. Development projects within the LADWP service area would also be anticipated to incorporate site-specific infrastructure improvements, as necessary. Each of the related projects would be reviewed by LADWP to identify necessary power facilities and service connections to meet the needs of their respective projects. Project applicants would be required to provide for the needs of their individual projects, thereby contributing to the electrical infrastructure in the Project area. As such, cumulative impacts with respect to electricity infrastructure would be less than significant.

**Natural Gas**

Buildout of the Project and related projects in SoCal Gas’ service area is expected to increase natural gas consumption during project construction and operation and, thus, cumulatively increase the need for natural gas supplies and infrastructure capacity. Based on the 2016 California Gas Report, the California Energy Commission estimates natural gas availability within SoCal Gas’ planning area will be approximately 1,371 million cubic feet/day in 2023. Based on the Project’s estimated net new daily natural gas consumption of 37,883 cubic feet per day and SoCal Gas’ projected 1,371 million cubic feet capacity in 2023, the Project would account for approximately .0028 percent of SoCal Gas projected additional capacity for the Project’s build-out year. There are approximately 115 related projects within a 2-mile radius. The related projects consist of multifamily residential, schools, hotels, theaters, and commercial uses. The total increase in gas demand for the related projects is approximately 286,117 cubic feet per day. Combined with the proposed project, the net increase in gas demand is approximately 324,000 cubic feet per day. The estimated net increase in gas demand resulting from the buildout of related projects combined with the proposed Project, would represent approximately 0.024 percent of the SoCalGas forecast for the peak demand in the fiscal year 2023. Exhibit 9 to Appendix 4.16-1 to this Draft EIR provides a breakdown of the related projects and associated gas consumption. SoCal Gas’ forecasts take into account projected population growth and development based on local and regional

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50 See Table 4.4-4. 1kBTU = 1 cubic foot of natural gas. Annual consumption of 13,827,325 cubic feet of natural gas converts to 37,883 cubic feet per day (13,827,325/365).
plans. Although future development projects would result in the irreversible use of natural gas resources which could limit future availability, the use of such resources would be on a relatively small scale and would be consistent with regional and local growth expectations for SoCal Gas’ service area. Furthermore, like the Project, during project construction and operation other future development projects would be expected to incorporate energy conservation features, comply with applicable regulations including CALGreen and State energy standards under Title 24, and incorporate mitigation measures, as necessary. Accordingly, the Project’s contribution to cumulative impacts related to natural gas consumption would not be cumulatively considerable and, thus, would be less than significant.

Natural gas infrastructure is typically expanded in response to increasing demand, and system expansion and improvements by SoCal Gas occur as needed. It is expected that SoCal Gas would continue to expand delivery capacity if necessary to meet demand increases within its service area. Development projects within its service area would also be anticipated to incorporate site-specific infrastructure improvements, as appropriate. As such, cumulative impacts with respect to natural gas infrastructure would be less than significant.

Transportation Energy

Development of the Project, in combination with the related projects and projected population growth in the greater City area, would increase transportation energy consumption and cumulatively increase the need for energy for transportation-related uses. Based on the Traffic Study prepared for the Project, included in Appendix 4.14-1 to this Draft EIR, there are 115 related projects anticipated in the Project area. The potential use of alternative-fueled, electric, and hybrid vehicles utilized by visitors to the Project Sites would reduce the Project’s consumption of gasoline and diesel; however, the above estimates of fuel consumption do not account for these other more energy efficient vehicle types. Therefore, this estimate is conservative.

Petroleum currently accounts for 92 percent of California’s transportation energy. However, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs from the transportation sector, and reduce VMT all of which would reduce reliance on petroleum. Therefore, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next ten years and there will be an increase in the use of alternative fuels, such as natural gas, biofuels, and electricity. Furthermore, similar to the Project, future development projects would be expected to reduce VMT by encouraging the use of alternative modes of transportation and other project features that promote the reduction of VMT. Thus, cumulative impacts related to transportation energy consumption would be less than significant.

PROJECT DESIGN FEATURES AND REGULATORY REQUIREMENTS

Project Design Features

No specific Project Design Features are relevant to energy infrastructure.

Regulatory Requirements

RR EN-1: Project construction shall comply with the County of Los Angeles Green Building Standards Code (Sites 1 and 3) and City of Los Angeles Green Building Code (Site 2).
MITIGATION MEASURES

No significant impacts to energy have been identified, and no mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts related to energy would be less than significant.