

## IV.F ENERGY

### INTRODUCTION

This section addresses the potential construction and operational impacts of the proposed project upon energy resources. The analysis identifies the utility companies that provide electricity and natural gas services to the Specific Plan area, describes the existing consumption, the nature and location of related infrastructure, and the demand of electricity, and natural gas within the Specific Plan area.

### ENVIRONMENTAL SETTING

#### Petroleum

California consumes approximately two million barrels of oil per day, or ten percent of the total United States oil consumption.<sup>1</sup> California is also one of the top producers of petroleum in the nation, with drilling operations primarily concentrated in Kern and Los Angeles Counties. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California oil refineries also process large volumes of Alaskan and foreign crude oil received at ports in Los Angeles, Long Beach, and the San Francisco Bay Area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports. Led by Saudi Arabia and Ecuador, foreign suppliers now provide more than two-fifths of the crude oil refined in California. However, California's dependence on foreign oil remains less than the national average.<sup>2</sup>

Petroleum supplies for the Specific Plan area are generally purchased by individual users such as residents and employees. There are no petroleum refineries, pipelines, or gasoline stations within the Specific Plan area. The nearest petroleum refinery is in El Segundo, approximately nine miles west of the Specific Plan area. The nearest gasoline station is in the City of South Gate and is approximately one-half mile east of the Specific Plan area.

#### Electricity

The City of Los Angeles Department of Water and Power (LADWP) provides electricity to the portion of the Specific Plan area within the City of Los Angeles, and Southern California Edison (SCE) provides electricity to the Annexation Area of the Specific Plan area.

#### LADWP

LADWP supplies more than 24 million megawatt-hours (MWh) of electricity a year to approximately 1.4 million residential and business customers.<sup>3</sup> LADWP owns and operates the majority of its generation, transmission, and distribution infrastructure, which include natural gas-fueled generation stations, coal-fired generating stations, nuclear-fueled generation stations, large hydroelectric generation stations, renewable resources, and distributed generation. **Table IV.F-1** shows LADWP's power supply mix. The

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<sup>1</sup>United States Department of Energy, Energy Information Administration, State Energy Consumption, Price and Expenditure Estimates, Total Petroleum Consumption Estimates by Sector (2006) website, [http://www.eia.doe.gov/emeu/states/hf.jsp?incfile=sep\\_sum/plain\\_html/sum\\_use\\_tot.html](http://www.eia.doe.gov/emeu/states/hf.jsp?incfile=sep_sum/plain_html/sum_use_tot.html), accessed August 3, 2010.

<sup>2</sup>United States Department of Energy, Energy Information Administration, State Energy Profiles website, [http://tonto.eia.doe.gov/state/state\\_energy\\_profiles.cfm?sid=CA](http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CA), accessed August 3, 2010.

<sup>3</sup>City of Los Angeles Department of Water and Power, Our Service and History website, <http://www.ladwp.com/ladwp/cms/ladwp001870.jsp>, accessed August 3, 2010.

net maximum and dependable plant capacities of all generating stations used by LADWP are 7,266 and 6,991 mega-watts (MW), respectively.<sup>4</sup> LADWP transmission and distribution system infrastructure includes 3,655 miles of transmission lines, 8,789 miles of overhead distribution lines, and 2,242 miles of underground distribution lines.<sup>5</sup>

<b>TABLE IV.F-1: LADWP POWER SOURCE MIX</b>	
<b>Power Source</b>	<b>Percentage of Mix</b>
Coal-Fired	44
Natural Gas	26
Renewables	14
Nuclear	9
Large Hydroelectric	7
Total	100
<b>SOURCE:</b> Los Angeles Department of Water and Power, <i>LADWP Quick Facts and Figures</i> , <a href="http://www.ladwp.com/ladwp/cms/ladwp000509.jsp">http://www.ladwp.com/ladwp/cms/ladwp000509.jsp</a> , accessed on August 3, 2010.	

Electricity from coal-fired power sources represents approximately 44 percent of LADWP’s power supply. The Navajo and the Intermountain Generating Stations supply the LADWP coal-generated electricity. Both stations are located in the states of Arizona and Utah, respectively.<sup>6</sup>

Electricity from natural-gas-fueled power sources represents approximately 26 percent of LADWP’s power supply. The Harbor, Haynes, Scattergood, and Valley generating stations supply the LADWP with natural-gas-fueled electricity. The Harbor, Haynes, Scattergood, and Valley generating stations are owned by the LADWP and are located throughout the Los Angeles Basin.<sup>7</sup>

Electricity from nuclear-fueled power sources represents approximately nine percent of LADWP’s power supply. The Palo Verde Nuclear Generation Station supplies the LADWP with nuclear-generated electricity. The Palo Verde Nuclear Generating Station is located in Arizona.<sup>8</sup>

Electricity from large hydroelectric power sources represents approximately seven percent of the LADWP’s power supply. The Castaic Pumped Storage Power Plant and the Hoover Power Plant supply LADWP with hydroelectric-generated electricity, and are located in Castaic, California and Arizona, respectively.<sup>9</sup>

Electricity from renewable and distribution generation power sources represents approximately 14 percent of LADWP’s power supply. LADWP’s eligible renewable “small hydro” resources include the Owens Gorge, the Owens Valley and the Los Angeles Aqueduct hydroelectric plants. Other LADWP renewable resources and distributed generation include:

- Pleasant Valley Wind Project (82 MW)
- Powerex small hydro (50 MW)
- Digester gas from the Hyperion Treatment Plant used at Scattergood (22 MW)
- Solar Photovoltaics in the Los Angeles area (11 MW)
- Bradley landfill gas (6 MW)

<sup>4</sup>*Ibid.*

<sup>5</sup>City of Los Angeles Department of Water and Power, LADWP Quick Facts and Figures website, <http://www.ladwp.com/ladwp/cms/ladwp000509.jsp>, accessed on August 3, 2010.

<sup>6</sup>City of Los Angeles, Department of Water and Power, *2010 Integrated Resource Plan Draft for Public Review*, July 2010.

<sup>7</sup>*Ibid.*

<sup>8</sup>*Ibid.*

<sup>9</sup>*Ibid.*

- Penrose landfill gas (6 MW)
- Lopez Canyon landfill gas (2 MW)
- Fuel Cells (2 MW)

In 2009, LADWP's electricity generation and distribution infrastructure delivered 24.8 million MWh of electricity to its customers. LADWP commercial users consumed the most electricity in 2009, approximately 14.5 million MWh, or 59 percent, of the electricity supplied by the LADWP. LADWP residential customers consumed approximately 7.8 million MWh, or 31 percent, of electricity supplied by the LADWP in 2009. Industrial users consumed approximately 2.3 million MWh, or 9 percent, of electricity supplied by LADWP in 2009. Other LADWP customers consumed approximately 0.156 million, or 1 percent, of electricity supplied by LADWP in 2009.<sup>10</sup>

#### *Southern California Edison*

SCE is an investor-owned utility that operates within a 50,000-square-mile service area which serves 180 cities, including the unincorporated Los Angeles County community of Florence-Firestone.<sup>11</sup> SCE owns and operates the majority of its generation, transmission, and distribution infrastructure. SCE distributes power to its customers by utilizing 16 utility connections and 4,990 transmission and distribution circuits. SCE's power supply is generated from coal, nuclear, and hydroelectric power. SCE provided its customers approximately 90,008 million kilowatt hours (kWh) of electricity in 2008.<sup>12</sup>

Sources of SCE's electricity include the coal-generated electricity from the Four Corners Generating Station located in the state of New Mexico; nuclear-generated electricity from the San Onofre and the Palo Verde Nuclear Generating Stations located in San Onofre, California and the state of Arizona, respectively; and hydroelectric-generated electricity from the SCE-owned Big Creek Hydroelectric facilities (Big Creek) located in Shaver Lake, California.

The estimated electricity usage of existing uses within the Specific Plan area is shown in **Table IV.F-2**, below. The total estimated electricity usage within the Specific Plan area is 7,679,450 kWh per year. The total estimated electricity usage of existing uses within the City portion of the Specific Plan area is 6,539,750 kWh per year, or 0.03 percent of the total power provided to LADWP customers in 2009. The total estimated electricity usage of existing uses within the Annexation Area is 1,139,700 kWh per year, or 0.001 percent of the total electricity provided to SCE customers in 2009.

Existing LADWP electricity distribution infrastructure serving the City portion of the Specific Plan area includes 34.5-kilovolt (KV) overhead distribution lines along Grape Street and 103<sup>rd</sup> Street and 4.89-KV overhead distribution lines which run along 97<sup>th</sup> and 103<sup>rd</sup> Streets. In addition, LADWP operates a transformation station within the vicinity of the Specific Plan area.<sup>13</sup> Existing SCE distribution infrastructure serving the Annexation Area includes overhead distribution lines adjacent to the Specific Plan area along Alameda Street.<sup>14</sup>

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<sup>10</sup>Los Angeles Department of Water and Power, *LADWP Quick Facts and Figures*, available at: <http://www.ladwp.com/ladwp/cms/ladwp000509.jsp>, accessed August 3, 2010.

<sup>11</sup> SCE Company Overview website, <http://www.sce.com/AboutSCE/CompanyOverview>, accessed August 3, 2010.

<sup>12</sup>California Energy Commission. California Energy Consumption Database.

<sup>13</sup>Los Angeles Department of Water and Power, Manager of Environmental Assessment and Planning Charles Holloway, written Correspondence, dated June 12, 2009.

<sup>14</sup>Southern California Edison Willowbrook District, Cornelius Browning, telephone conversation, August 2, 2010.

<b>TABLE IV.F-2: ESTIMATED ELECTRICITY USAGE FROM EXISTING USES WITHIN THE SPECIFIC PLAN AREA</b>			
<b>Use</b>	<b>Units</b>	<b>Electricity Use Factor (kWh/dwelling units or square feet/year)</b>	<b>Electricity use (kWh/year)</b>
<b>City of Los Angeles Area</b>			
Jordan Downs Housing Complex	700 dwelling units	5625.50	3,937,850
Jordan Downs Recreation Center /a/	7,000 square feet	10.50	73,500
David Starr Jordan High School /b/, /c/	240,800 students	10.50	2,528,400
<b>Annexation Area</b>			
Industrial Uses	262,000 square feet	4.35	1,139,700.00
<b>Subtotal of City Area Electricity Usage</b>			<b>6,539,750</b>
<b>Subtotal of Annexation Area Electricity Usage</b>			<b>1,139,700</b>
<b>Total Electricity Usage of Existing Uses on Specific Plan area</b>			<b>7,679,450</b>
/a/ The SCAQMD miscellaneous land use type electricity usage rate of 10.50 kWh/square foot/year was used to estimate the electricity used by the existing Jordan Downs Recreation Center because there is no SCAQMD electricity usage rate specific to recreation centers. /b/ Assumed the David Starr Jordan High School is the same size as the new 240,800 square foot Southeast High School No. 2. /c/ The SCAQMD electricity usage rate for high school land uses is 10.50 kWh/square foot/year. <b>SOURCE:</b> South Coast Air Quality Handbook, 1993; TAHA, 2010.			

### Natural Gas

The Specific Plan area is served by the investor-owned Southern California Gas Company (SoCalGas), a unit of Sempra Energy. SoCalGas serves approximately 20.3 million customers through 5.7 million meters. The SoCalGas service area is 20,000 square miles and includes over 530 cities in Central and Southern California.<sup>15</sup> In 2008, approximately 5,521.9 million therms, or 533,968 million cubic feet of natural gas, was consumed within the SoCalGas service area. Residential, industrial, and commercial customers consumed 2,489 million, 1,542 million, and 874 million therms of natural gas, respectively.<sup>16,17</sup> In 2007, the average annual single- and multi-family unit used 515 therms and 312 therms of natural gas, respectively. SoCalGas anticipates average usage to decline due in part to increased energy efficiency of appliances, tighter building shells, and the impact of energy efficiency programs.<sup>18</sup>

SoCalGas natural gas supplies originate from sedimentary basins located in California, New Mexico, West Texas, the Rocky Mountains, and Western Canada. SoCalGas uses interstate pipelines to transport natural gas into its service area. These interstate pipelines are also used with the San Diego Gas and Electric Company (SDG&E). Interstate pipelines used by SoCalGas and SDG&E have a natural gas upstream capacity of 7,725 million cubic feet per day, or 218,250 million cubic feet per month.<sup>19</sup> Locally, SoCalGas distributes natural gas through an extensive network of approximately 41,500 miles of underground gas mains.

The estimated natural gas usage of the existing uses within the Specific Plan area is shown in **Table IV.F-3**. The total estimated electricity usage of existing uses within the Specific Plan area is 4,286,470 cubic feet per month, 530,101 therms per year, or 0.01 percent of the total natural gas provided to SoCalGas customers in 2008.

<sup>15</sup>Southern California Gas Company Profile website, <http://www.socalgas.com/aboutus/profile.html>, accessed August 3, 2010.

<sup>16</sup>California Energy Commission. California Energy Consumption Database.

<sup>17</sup>One therm is equal to 96.7 cubic feet.

<sup>18</sup>Southern California Gas Company, *2008 California Gas Report*, 2008.

<sup>19</sup>*Ibid.*

<b>TABLE IV.F-3: ESTIMATED NATURAL GAS USAGE FROM EXISTING USES WITHIN THE SPECIFIC PLAN AREA</b>			
<b>Use</b>	<b>Units</b>	<b>Natural Gas Usage Rate (cubic feet/dwelling unit or square feet/month)</b>	<b>Natural Gas Usage (cubic feet/month)</b>
<b>City of Los Angeles Area</b>			
Jordan Downs Housing Complex	700 dwelling units	4011.50	2,808,050
Jordan Downs Recreation Center /a/	7,000 square feet	2.90	20,300
David Starr Jordan High School /a/, /b/	240,800 square feet	2.90	698,320
<b>Annexation Area</b>			
Industrial Uses	262,000 square feet	2.90	759,800
<b>Subtotal of City Area Natural Gas Usage</b>			<b>3,526,670</b>
<b>Subtotal of Annexation Area Natural Gas Usage</b>			<b>759,800</b>
<b>Total Natural Gas Usage of Existing Uses on Specific Plan area</b>			<b>4,286,470</b>
<p>/a/ The SCAQMD natural gas usage rate of 2.90 cubic feet/square foot/month that is related to retail/shopping centers was used to estimate the natural gas usage of the existing Jordan Downs Recreation Center, David Starr Jordan High School, and industrial land uses because there is no natural gas usage rates for those land uses. The retail/shopping centers natural gas usage rate is assumed to best characterize natural gas usage of recreation centers, schools, or industrial uses.</p> <p>/b/ Assumed the David Starr Jordan High School is the same size as the new 240,800 square foot Southeast High School.</p> <p><b>SOURCE:</b> South Coast Air Quality Handbook, 1993; TAHA, 2010.</p>			

## Regulatory Framework

### State

**California Building Energy Efficiency Standards.** The California Building Energy Efficiency standards are found in Part 6 of Title 24 of the California Code of Regulations (CCR). Title 24 of the CCR comprises the State Building Standards Code and Part 6 of CCR Title 24 is the California Energy Code (CEC) that includes the building energy efficiency standards. The California Building Energy Efficiency Standards are means for buildings to achieve energy efficiency. The standards include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of systems, equipment, and appliances.

The standards include additional mandatory requirements for space conditioning (cooling and heating) water heating, and indoor and outdoor lighting systems and equipment in non-residential, high rise residential and hotel or motel buildings. Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation and water piping. In addition to the mandatory requirements, the standards call for further energy efficiency measures that can be provided through a choice between performance and prescriptive compliance approaches. In buildings designed for mixed use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy.<sup>20</sup>

**California Green Building Standards Code.** The California Green Building Standards Code (CALGreen) is found in Part 11, Title 24 of the CCR. The California Green Building Standards Code was adopted in January 2010. The 2010 edition will become effective on January 1, 2011. The purpose of CALGreen is to cause the reduction in greenhouse gas emissions, promote environmentally responsible, cost effective, healthier places to live and work; reduce energy and water consumption, and respond to directives of Governor Arnold Schwarzenegger. CALGreen identifies certain residential and

<sup>20</sup>California Energy Commission, *2005 Building Energy Efficiency Standards for Residential and Non Residential Buildings, P400-03-001F, Section 100(f)*, October 1, 2005.

non-residential buildings that are required to be designed by mandatory green building measures outlined in CALGreen. In addition, CALGreen includes voluntary measures that may be incorporated into the design of a building. Voluntary measures of the CALGreen may become mandatory if a city or county adopt them.

**AB 2075, Reducing Dependence on Petroleum.** The CEC and ARB are directed by law (2000 AB 2075) to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal is to reduce petroleum demand to 15 percent below the 2003 demand. The options include:

#### Near-Term Options

- Use more fuel efficient replacement tires with proper inflation;
- Improve fuel economy in government fleets; and
- Improve private vehicle maintenance.

#### Mid-Term Options (could be fully implemented in the 2010-2020 time frame)

- Double fuel efficiency of current model light duty vehicles to 40 miles per gallon; and
- Use natural-gas-derived Fischer-Tropsch fuel as a 33 percent blending agent in diesel.

#### Long-Term Options

- Introduce fuel cell light duty vehicles in 2012, increasing to 10 percent of new vehicle sales by 2020, and 20 percent by 2030.

#### Recommendations include:

- Adopt a recommended statewide goal of reducing demand for on-road gasoline and diesel to 15 percent below the 2003 demand level by 2020 and maintaining that level for the foreseeable future;
- Work with the California delegation and other states to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks and SUVs; and
- Establish a goal to increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030<sup>21</sup>

#### *Local*

**City of Los Angeles Municipal Code Chapter IX, Division 13.** Los Angeles Municipal Code (LAMC) Chapter IX, Division 13 contains the building regulations that pertain to energy conservation. Division 13 requires that all buildings be designed to comply with the requirements of the California Energy Code.

**City of Los Angeles Municipal Code Sections 16.10 and 16.11.** LAMC Sections 16.10 and 16.11 represent the City's Green Building Program. Developers of new developments subject to the City's Green Building Program must demonstrate intent to meet the intent of the criteria for certification at the Leadership in Energy and Environmental Design (LEED) Certified level and be reviewed and approved by the Director for LEED compliance prior to obtaining a building permit. Buildings subject to the City's Green Building Program include;

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<sup>21</sup>CEC/California Air Resources Board, *Reducing California's Petroleum Dependence, Final Adopted Joint Agency AB 2076 Report, Publication # 600-03-006F*, August 14, 2003.

- New non-residential buildings or structures of 50,000 gross square feet or more in floor area;
- New mixed-use or residential buildings of 50,000 gross square feet or more of floor area in excess of six stories;
- New mixed-use or residential building of six or fewer stories consisting of at least 50 dwelling units in a building which has at least 50,000 gross square feet of floor area, and in which at least 80 percent of the building's floor area is dedicated to residential uses;
- The alteration or rehabilitation of 50,000 gross square feet or more of floor area in an existing non-residential building for which construction costs exceed a valuation of 50 percent of the replacement cost of the existing building; or
- The alteration of at least 50 dwelling units in an existing mixed-use or residential building, which has at least 50,000 gross square feet of floor area, for which construction costs exceed a valuation of 50 percent of the replacement cost of the existing building.

**The City of Los Angeles Green LA Plan.** On May 15, 2007, Los Angeles Mayor Antonio Villaraigosa released the “Green LA – An Action Plan to Lead the Nation in Fighting Global Warming” (Green LA Plan) that has an overall goal of reducing the City of Los Angeles’ greenhouse gas emissions to 35 percent below 1990 levels by 2030. This goal exceeds the targets set by both California and the Kyoto Protocol, and is the greatest reduction target of any large United States’ city. The cornerstone of the Green LA Plan is increasing the City’s use of renewable energy to 35 percent by 2020.

## ENVIRONMENTAL IMPACTS

### Significance Thresholds

The State CEQA Guidelines Appendix G does not contain significance thresholds related to energy. However, Appendix F of the CEQA Guidelines requires that EIRs discuss energy impacts of a proposed project with a particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. Environmental impacts may include:

- The project’s energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project 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; and/or
- The project’s projected transportation energy use requirements and its overall use of efficient transportation alternatives.

### Project Design Features

The proposed project would be designed to meet the energy efficiency standards of Title 24 of the California Energy Code, CALGreen, the City’s Green Building Program, and LAMC Chapter IX, Division 13. In addition, the proposed project has been designed to meet Leadership in Energy and Environmental Design for Neighborhood Development (LEED ND) Gold certification requirements and meet LEED sustainability goals. Relevant design features that have been incorporated in the proposed project include:

- Capitalizing on public transportation to reduce vehicle usage
- On-site renewable energy source implemented as solar hot water panels on the rooftops to provide domestic hot water
- Reduction of energy consumption of infrastructure of the project by providing energy efficient street lights and traffic lights
- Installation of solar hot water panels and solar thermal installation which can be used to produce hot water, cooling in the summer, and heating in the winter (requires a larger roof area)
- Installation of energy efficient street and traffic lights

## **Analysis of Proposed Project Impacts**

### ***Petroleum***

#### *Construction*

Construction of the proposed project would occur in four phases and the buildout of all phases is anticipated to take seven years. Construction trucks and equipment would use petroleum products. However, during the construction of the proposed project, petroleum usage is not anticipated to increase the need for additional petroleum supplies. Therefore, construction of the proposed project would have a less-than-significant impact on the supply of petroleum.

#### *Operation*

The proposed project is an urban infill project that is centrally located within the City. Unlike a project developed away from the City center, residents of the proposed project would not need to drive unusual distances for employment opportunities within the region. The proposed project would be located within ten miles of major job centers at Downtown Los Angeles, Los Angeles Airport, and El Segundo. These jobs centers are accessible from the proposed project by rail (e.g. Los Angeles County Metropolitan Transportation Agency Blue and Green Lines), freeway (Interstates 105 and 110), and bus transit. Based on this assessment, the proposed project would not generate uncommonly long vehicle trips requiring wasteful or inefficient use of petroleum. Since the project is centrally located within the City and accessible to job centers within the region, it would not result in the wasteful or inefficient use of petroleum. Therefore, operation of the proposed project would have a less-than-significant impact on petroleum.

### ***Electricity***

The Specific Plan area currently includes properties that are within unincorporated areas of Los Angeles County and served by SCE. As part of the proposed project, these properties would be annexed into the City of Los Angeles and be brought within the service area of the LADWP.

#### *Construction*

A temporary increase in electricity usage associated with the construction workers and activities on-site is anticipated. However, the increase in electricity usage associated with construction workers and activities relative to the operation of the proposed project is temporary and nominal. Therefore, construction of the proposed project would have a less-than-significant impact on the supply and distribution infrastructure of electricity.

Operation

As shown in **Table IV-F-4**, the estimated electricity usage by the proposed project is approximately 19.1 giga-watt hours (GWh) per year.<sup>22</sup> Given that the existing electricity usage within the Specific Plan area is approximately 7.68 GWh per year, the estimated net electricity usage of the proposed project is approximately 11.40 GWh per year.

LADWP would need to review the project developer’s electrical drawings and load schedules, before making determination whether or not it may provide electricity service to the proposed project through existing infrastructure within the vicinity of the Specific Plan area. Also, the LADWP has determined that the proposed project would require an on-site transformation facility to supply electricity to existing and future loads within the Specific Plan Area.<sup>23</sup> Therefore, the proposed project would result in a potentially significant impact related to electricity without mitigation.

<b>TABLE IV.F-4: ESTIMATED ELECTRICITY USAGE OF THE PROPOSED PROJECT</b>			
<b>Use</b>	<b>Units</b>	<b>Electricity Usage Factor (kWh/sq ft/year)</b>	<b>Electricity Use (kWh/year)</b>
Residential	1,800 dwelling units	5625.50	10,125,900
Commercial/Retail	210,000 square feet	13.55	2,845,500
Mixed Uses	20,000 square feet	13.55	271,000
David Starr Jordan Downs High School /a/, /b/	240,800 square feet	10.50	2,528,400
High School Expansion /b/, /c/	80,000 square feet	10.50	840,000
Elementary School /b/, /c/	80,000 square feet	5.90	472,000
Family Resource Center /d/	50,000 square feet	10.50	525,000
Joint-use gymnasium /d/	17,000 square feet	10.50	178,500
Pool Facility /d/	3,000 square feet	10.50	31,500
Commercial/Light Industrial	292,000 square feet	4.35	1,270,200
<b>Total Electricity Usage</b>			<b>19,088,000</b>
<b>Less Existing Usage of Existing Uses Within City Portion of LADWP</b>			<b>(7,679,450)</b>
<b>Net Electricity Usage</b>			<b>11,408,550</b>
/a/ Assumed the David Starr Jordan High School is the same size as the new 240,800 square foot Southeast High School. /b/ The SCAQMD electricity usage rate for high school and elementary school land uses is 10.50 kWh/square foot/year and 5.90 kWh/square foot/year, respectively. /c/ The square footage was obtained from the Master Plan Horizontal and Public Investments, Residential and Commercial Development – Draft Cost Study for Jordan Downs Development /d/ There SCAQMD miscellaneous electricity usage rate was used to estimate electricity usage for the Family Resource Center, Joint-use gym, and the pool facility because there are no other appropriate usage rates for the aforementioned uses. <b>SOURCE:</b> Davis Langdon, <i>Master Plan Horizontal and Public Investments, Residential and Commercial Development – Draft Cost Study for Jordan Downs Development Los Angeles, California</i> , March 31, 2010.			

The proposed project would comply with the State Building Energy Efficiency Standards, CALGreen, the City’s Green Building Program, and LAMC Chapter IX, Division 13 and incorporate project design features to achieve a LEED-ND Gold certification. The aforementioned State and local energy efficiency and green building regulations and the LEED-ND project design features are intended to ensure that buildings would achieve energy efficiency and reduce energy consumption. Hence, the proposed project’s compliance with State and local energy building regulations and incorporation of the LEED-ND project design features would result in the efficient use and minimal waste of electricity. Therefore, a wasteful or inefficient use of electricity would not occur.

<sup>22</sup>There are 1,000,000 kilowatts in a gigawatt.

<sup>23</sup>Los Angeles Department of Water and Power, Manager of Environmental Assessment and Planning Charles Holloway, written Correspondence, dated June 12, 2009.

## **Natural Gas**

### *Construction*

Natural gas is not anticipated to be used during construction activities associated with the proposed project. However, natural gas pipelines would be encountered during construction earth-moving activities such as excavation and trenching. HACLA and the construction company would contact SoCalGas prior to commencing any earth-moving activities to avoid any impacts on existing natural gas distribution infrastructure. Therefore, construction of the proposed project would have a less-than-significant impact on the supply and distribution infrastructure of natural gas.

### *Operation*

As shown in **Table IV-F-5**, the estimated natural gas usage by the proposed project is approximately 10 million cubic feet per month, or 121.1 million cubic feet per year. The estimated net natural gas usage of the proposed project is approximately 5.8 million cubic feet per month, or 69.9 million cubic feet per year. SoCalGas has determined that it could supply natural gas to the proposed project without any significant impact to the environment.<sup>24</sup> Therefore, the proposed project would have a less-than-significant impact on the supply of natural gas.

The number and size of natural gas connections from the Specific Plan area to the SoCalGas' natural gas distribution system and other off-site distribution facilities may not have the capacity to supply the additional natural gas that would be demanded by the proposed project. Additional natural gas connections and/or improvements to the existing off-site natural gas distribution facilities could be required in order for the SoCalGas to adequately serve the proposed project. Therefore, the proposed project would result in a potentially significant impact on the local natural gas distribution infrastructure.

The proposed project would comply with the State Building Energy Efficiency Standards, CALGreen, the City's Green Building Program, and LAMC Chapter 4, Article 1, Division 13 and incorporate project design features to achieve a LEED-ND Gold certification. The aforementioned State and local energy efficiency and green building regulations and the LEED-ND project design features are intended to ensure that buildings would achieve energy efficiency and reduce energy consumption. This would result in the efficient use and minimal the waste of natural gas. Therefore, wasteful or inefficient use of natural gas would not occur.

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<sup>24</sup>Southern California Gas Company, Pipeline Planning Assistant Debra Wilson, written Correspondence, dated June 22, 2010.

<b>TABLE IV.F-5: ESTIMATED NATURAL GAS USAGE OF THE PROPOSED PROJECT</b>			
<b>Use</b>	<b>Units</b>	<b>Natural Gas Usage Rate (cubic feet/dwelling unit or square feet/month)</b>	<b>Natural Gas usage (cubic feet/month)</b>
Residential	1,800 dwelling units	4011.50	7,220,700
Commercial/Retail	210,000 square feet	2.90	609,000
Mixed Uses	20,000 square feet	2.90	58,000
David Starr Jordan Downs High School /a/	240,800 square feet	2.90	698,320
High School Expansion /b/, /c/	80,000 square feet	2.90	232,000
Elementary School /b/, /c/	80,000 square feet	2.90	232,000
Family Resource Center /c/	50,000 square feet	2.90	145,000
Joint-use gymnasium /c/	17,000 square feet	2.90	49,300
Pool Facility /c/	3,000 square feet	2.90	8,700
Light Industrial Uses /c/	292,000 square feet	2.90	846,800
<b>Total Natural Gas Usage</b>			<b>10,099,820</b>
<b>Less Existing Usage of Existing Uses Within Specific Plan Area</b>			<b>(4,286,470)</b>
<b>Net Natural Gas Usage</b>			<b>5,813,350</b>
<p>/a/ Assumed the David Starr Jordan High School is the same size as the new 240,800 square foot Southeast High School.                      /b/ The square footage was obtained from the Master Plan Horizontal and Public Investments, Residential and Commercial Development – Draft Cost Study for Jordan Downs Development                      /c/ There SCAQMD retail/shopping centers natural gas usage rate of 2.90 cubic feet/square feet/month, was used to estimate electricity usage for the Family Resource Center, Joint-use gym, and the pool facility and light industrial uses because there are no other appropriate usage rates for the aforementioned uses.  <b>SOURCE:</b> Davis Langdon, <i>Master Plan Horizontal and Public Investments, Residential and Commercial Development – Draft Cost Study for Jordan Downs Development Los Angeles, California, March 31, 2010.</i></p>			

## CUMULATIVE IMPACTS

### *Petroleum*

Cumulative impacts on petroleum would be evaluated in the context of the nine related projects identified in Chapter III Environmental Setting of this Draft EIR. As previously mentioned, the proposed project was determined to have less-than-significant impacts upon the supply of petroleum. Therefore, impacts related to the supply of petroleum would not be considered cumulatively considerable.

### *Electricity*

Cumulative impacts on electricity would be evaluated within the context of the LADWP service area. Of the nine related projects, only two are within the service area of the LADWP: the Wattstar Theatre and Education Center and a Public High School.

**Table IV.F-6** shows the estimated electricity usage of the proposed project and related projects within the LADWP service area. The proposed project and related projects would use 12,175,890 kWh per year of electricity. The LADWP has determined that the cumulative effect of the proposed project and other new or added loads (i.e., electricity demand of related projects) would require that near term and/or future additions to the LADWP electricity distribution system to be made.<sup>25</sup> Therefore, the proposed project’s impact on the supply of electricity would be cumulatively considerable.

<sup>25</sup>Los Angeles Department of Water and Power, Manager of Environmental Assessment and Planning Charles Holloway, written Correspondence, dated June 12, 2009.

<b>TABLE IV.F-6: ESTIMATED ELECTRICITY USAGE OF THE PROPOSED PROJECT AND TWO RELATED PROJECTS</b>			
<b>Related Project</b>	<b>Units</b>	<b>Electricity Generation Factor (kWh/unit/year)</b>	<b>Electricity Generation (kWh/year)</b>
Wattstar Theatre/a/	20,800 Square feet	10.50	218,400
Wattstar Education Center	12,000 Square feet	12.95	155,400
Public High School	37,480 Square Feet	10.5	393,540
<b>Total Estimated Electricity Usage of the Related Projects</b>			<b>767,340</b>
<b>Electricity Usage by Proposed Project</b>			<b>11,408,550</b>
<b>Total Electricity Usage by the Proposed and Related Projects</b>			<b>12,175,890</b>
/a/. Assuming that there are 20 square feet of space per seat. <b>SOURCE:</b> South Coast Air Quality Handbook, 1993; TAHA, 2010.			

The proposed project and the related projects would comply with California Energy Efficiency Standards and CALGreen. The aforementioned State energy efficiency and green building regulations are intended to ensure that buildings would achieve energy efficiency and reduce energy consumption, which would, therefore, result in the efficient use and minimal the waste of electricity. Therefore, impacts to electricity would not be cumulatively considerable.

**Natural Gas**

**Table IV.F-7** shows the estimated natural gas usage of the proposed project and related projects within the LADWP service area. As shown, the proposed project and related projects would use approximately 10,524,279 cubic feet of natural gas per month, or 126.2 million cubic feet per year. The proposed project would proportionally use more natural gas, approximately 67 percent, than the related projects served by the SoCalGas. However, as previously mentioned, the proposed project was determined to have less-than-significant impacts upon the supply of natural gas. Therefore, impacts related to the supply of natural gas would not be considered cumulatively considerable.

The related projects are anticipated to increase the volume of natural gas demanded from the SoCalGas distribution system. Existing natural gas connections and off-site distribution facilities serving the related projects may need to be improved and/or additional natural gas connections may need to be constructed in order for SoCalGas to adequately supply the related projects with natural gas. Since the proposed project could also require improvements to the SoCalGas distribution system, cumulative impacts are anticipated. Therefore, impacts on the distribution of natural gas would be considered cumulatively considerable.

The proposed project and the related projects would comply with California Energy Efficiency Standards and CALGreen. The aforementioned State energy efficiency and green building regulations are intended to ensure that buildings would achieve energy efficiency and reduce energy consumption, which would therefore result in the efficient use and minimal the waste of natural gas. Therefore, impacts to natural gas would not be cumulatively considerable.

<b>TABLE IV.F-7: ESTIMATED NATURAL GAS USAGE OF THE PROPOSED PROJECT AND NINE RELATED PROJECTS</b>			
<b>Related Project</b>	<b>Units</b>	<b>Natural Gas Usage Rate (cubic feet/dwelling unit or square feet/month)</b>	<b>Natural Gas usage (cubic feet/month)</b>
Wattstar Movie Theater – City of Los Angeles /a/	20,800 Square Feet	2.9	60,320
Wattstar -- Education Center	12,000 Square feet	2.9	34,800
Public High School	37,480 Square Feet	2.9	108,692
Shopping Center	600,000 Square feet	2.9	1,740,000
Shopping Center	50,000 Square feet	2.9	145,000
<b>Mixed Use Development</b>			
Retail Center	18,090 Square Feet	2.9	52,461
Townhouses	47 Dwelling units	4011.5	188,541
East Los Angeles College Firestone Campus	418,900 Square feet	2.9	1,214,810
LAUSD Elementary School No. 9	57,950 Square Feet	2.9	168,055
Single-Family Housing	120 Dwelling units	6655	798,600
Single-Family Housing	30 Dwelling units	6655	199,650
<b>Total Estimated Natural Gas Usage of Related Projects</b>			<b>4,710,929</b>
<b>Estimated Natural Gas by Proposed Project</b>			<b>5,813,350</b>
<b>Total Natural Gas Usage by the Proposed and Related Projects</b>			<b>10,524,279</b>
/a/ Assuming that there are 20 square feet of space per seat. <b>SOURCE:</b> Sanitation Districts of Los Angeles County and TAHA, 2010.			

**MITIGATION MEASURES**

***Petroleum***

No mitigation measures are necessary.

***Electricity***

- E1** HACLA shall coordinate with LADWP to determine the specific on-site electricity transformation facility requirements for the proposed project.
- E2** HACLA shall coordinate with LADWP to determine if any required improvements to the LADWP electricity distribution system are needed to accommodate the proposed project. HACLA shall create a fund to finance the costs of infrastructure improvements to the electricity distribution system to accommodate the proposed project. The type, quantity, and costs of any required infrastructure improvements shall be set forth in a Memorandum of Understanding (MOU) that shall be agreed on by HACLA and LADWP.
- E3** HACLA shall incorporate into building and electrical plans any necessary on-site transformation facility infrastructure and be subject to review and approval by the LADWP prior to construction.
- E4** HACLA shall incorporate into the guidelines of the Specific Plan electrical generating solar panels for streetscape pedestrian lighting, gateway lighting, and other passive outdoor lighting.

### ***Natural Gas***

- E5** HACL A shall coordinate with SoCalGas to determine if any required improvements to the SoCalGas natural gas distribution system are needed to accommodate the proposed project. HACL A shall create a fund to finance the costs of infrastructure improvements to the SoCalGas natural gas distribution system to accommodate the proposed project. The type, quantity, and costs of the infrastructure improvements shall be in agreed on in accordance with SoCalGas' policies and extension rules on file with the California Public Utilities Commission at the time contractual agreements are made.
- E6** Building and natural gas connection plans shall be subject to review and approval by the SoCalGas prior to construction.
- E7** HACL A shall set aside a percentage of roof floor area for installation of water-heating solar panels.

### **LEVEL OF SIGNIFICANCE AFTER MITIGATION**

#### ***Petroleum***

No mitigation measures were necessary because the proposed project would have a less-than-significant impact on petroleum supplies. In addition, the proposed project's impact on petroleum supplies would not be cumulatively considerable.

#### ***Electricity***

Implementation of Mitigation Measures **E1** through **E4** would ensure that adequate electricity distribution infrastructure is in place to accommodate the proposed project and reduce proposed project's impacts on LADWP's electricity distribution infrastructure to a less-than-significant level. Consequently, the proposed project's impact on electricity distribution infrastructure would not be cumulatively considerable.

#### ***Natural Gas***

Implementation of Mitigation Measures **E5** through **E7** would ensure that adequate natural gas distribution infrastructure is in place to accommodate the proposed project and reduce the proposed project's impact on SoCalGas' natural gas distribution infrastructure to a less-than-significant level. Consequently, the proposed project's impact on natural gas distribution infrastructure would not be cumulatively considerable.