3.0 Setting, Environmental Impact Analysis, Mitigation Measures

3.5 Energy, Conservation, and Sustainability

As a result of the analysis undertaken in the Initial Study for the proposed 2009 Master Plan, the LACCD determined that the proposed project may result in environmental impacts to Energy, Conservation, and Sustainability. Therefore, this issue is being carried forward for detailed analysis in this EIR. This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potential significant impacts to Energy, Conservation, and Sustainability, and to identify potential alternatives.

The analysis of Energy, Conservation, and Sustainability consists of a summary of the regulatory framework that guides the decision-making process, the existing conditions at the proposed 2009 Master Plan area, thresholds for determining if the proposed 2009 Master Plan would result in significant impacts, anticipated impacts (direct, indirect, and cumulative), mitigation measures, and level of significance after mitigation. The potential for impacts to Energy, Conservation, and Sustainability at the proposed 2009 Master Plan site have been evaluated in accordance with Appendix F of the CEQA Guidelines, the LACCD Sustainable Building Policy, and Title 24 Part 6 of the California Code of Regulations, California Energy Efficiency Standards.

Energy impacts from projects included in the 2007 Master Plan were addressed in the 2007 Master Plan EIR. Since that time, LACCD has released updated Sustainable Design Standards. For this reason, all facilities that are in the planning or construction stage throughout the campus are addressed in this section, including those that have already undergone environmental review in the 2007 Master Plan EIR. Collectively, these remaining 2007 Master Plan facilities, along with the proposed 2009 Master Plan, will be analyzed and referenced as the “project.”

3.5.1 Setting

3.5.1.1 Regulatory Setting

The following regulations and guidelines provide the framework for energy conservation and sustainability. The increased and growing demands for non-renewable energy supplies are best addressed through conservation, according to these programs and their requirements.

Federal

Federal Energy Policy and Conservation Act and Amendments

Minimum standards of energy efficiency for many major appliances were established by the U.S. Congress in the federal Energy Policy and Conservation Act (EPCA) of 1975, and have been subsequently amended by succeeding energy legislation, including the federal Energy Policy Act of 2005. The U.S. Department of Energy (DOE) is required to set appliance efficiency standards at levels that achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified.

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1 California Code of Regulations, Title 24, Division 6, Chapter 3, Sections 15000-15387. Available at http://ceres.ca.gov/topic/env_law/ceqa/guidelines/

Most recently, HR 6, the federal Energy Independence and Security Act of 2007 established new standards for a few equipment types not already subjected to a standard, and updated some existing standards. Perhaps the most significant new standard that HR 6 established is for general service lighting which will be deployed in two phases. First, by 2012-2014 (phasing in over several years), common lightbulbs will be required to use about 20-30 percent less energy than present incandescent bulbs. Second, by 2020, lightbulbs must consume 60 percent less energy than today's bulbs; this requirement will effectively phase out the incandescent lightbulb.

State

California Code of Regulations Title 24, Part 6: California Energy Code

All new construction in California must meet Title 24 energy standards (CEC, 2005). Title 24, which provides energy efficiency standards for residential and nonresidential buildings, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to incorporate new energy efficiency technologies and methods.

CEC Tier II Energy Efficiency Goals

Under State law, the California Energy Commission (CEC) is required to establish eligibility criteria, conditions for incentives, and rating standards to qualify for ratepayer-funded solar energy system incentives in California. As part of this effort, the CEC establishes energy efficiency standards for homes and commercial structures, and requires new buildings to exceed current building standards by meeting Tier Energy Efficiency goals. CEC’s Tier II Energy Efficiency goals will continue to be updated to achieve energy efficiency best practices, and are consistent with what is needed to meet the California Public Utilities Commission Strategic Plan goals of zero net-energy buildings. Currently, the CEC’s proposed guidelines for the solar energy incentive program recommend a Tier II goal for residential and commercial projects of a 30 percent reduction in building combined space heating, cooling, and water-heating energy, compared to the 2008 Title 24 Standards.

CEQA Guidelines

Section 15126.4 (a)(1) of the CEQA Guidelines states that an EIR shall describe feasible measures which could minimize significant adverse impacts, including, where relevant, inefficient and unnecessary consumption of energy.

CEQA Guidelines Appendix F, Energy Conservation, provides guidance for EIRs regarding potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy. In addition, though not described as thresholds for determining the significance of impacts, Appendix F seeks inclusion of information in the EIR addressing the following environmental impacts:

- 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.
3.0 Setting, Environmental Impact Analysis, Mitigation Measures

3.5 Energy, Conservation, and Sustainability

- 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.

**Regional**

*Los Angeles Community College District Sustainable Building Policy*

It is the policy of the LACCD to finance, plan, design, construct, manage, renovate, maintain, and decommission its facilities and buildings to be sustainable. This applies to new construction and major remodels in which the total project square footage meets the criteria given. The LEED rating system and accompanying Reference Guide shall be used as a design and measurement tool to determine what constitutes sustainable building by national standards. All facilities and buildings over 7,500 gsf of occupied space shall achieve the highest possible level of LEED certification (LACCD, 2009. See Appendix I for applicable baseline LEED building criteria).

All new construction shall exceed the current California Title 24 Part 6 energy requirements by 20 percent. For major renovation the buildings must exceed the current California Title 24 Chapter 6 energy requirements by 10 percent.

All new LEED buildings must be supplied by 50 percent of the total building energy consumption from renewable energy, with a minimum of 20 percent on-site generation of renewable energy which includes photovoltaic systems, wind turbines power, and geothermal power. Other methods that are not renewable, but are considered green sources of power (less polluting than fossil-fuel power plants), are micro-turbines, fuel cells, co-generation systems, and thermal storage systems ground-source heat pumps. To supplement the renewable energy requirement, green power may be purchased in the form of green-certified renewable energy credits (REC’s).

The LEED for New Construction and Major Renovations Version 2.2 rating system launched in October 2005. In order to achieve a certification under LEED Version 2.2, a project must achieve at least 26 LEED points out of a possible 69 total points in the following areas:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation and Design Process

*Los Angeles Department of Water and Power*

The LADWP supplies water and electricity to the community of Sylmar and LAMC. LADWP provides several rebates and programs to utility customers for the purpose of energy conservation. Non-residential rebates and programs currently offered include Commercial Lighting Efficiency
3.0 Setting, Environmental Impact Analysis, Mitigation Measures

3.5 Energy, Conservation, and Sustainability


3.5.1.2 Environmental Setting

The project site exists in the community of Sylmar, City of Los Angeles, in a predominantly low-density residential neighborhood adjacent to the San Gabriel Mountains. Most of the community of Sylmar was developed during the years immediately following World War II, which predates, and therefore would not be in compliance with, Title 24. Sylmar subsequently had another wave of development and growth in the 1980s that increased the community’s number of dwelling units by 33 percent (City of Los Angeles, 1997); this development would be in compliance with Title 24. The existing LAMC campus is in compliance with Title 24.

The community of Sylmar is subject to the phenomena of the “urban heat-island effect,” which is largely caused by the concentration of buildings and paved surfaces in urban areas. The urban heat-island effect is the increase in temperatures in urban areas that result in a greater number of days when air quality is unhealthy, or worse. The City of Los Angeles’ approach to addressing the urban heat-island effect has been to focus on better management of the urban forest to offset head-island effects, such as using trees to reduce the demand for air conditioning and cooling in buildings.

Electricity for the community of Sylmar is provided by the LADWP. LADWP has proposed a Renewable Portfolio Standard (RPS) designed to increase the amount of energy it generates from renewable power sources to 20 percent of its retail electric sales by 2010 (LADWP, 2009a). The long-term goal, as identified in the Mayor’s Climate Action Plan, is to achieve 35 percent renewable energy generation by 2020. The policy will provide a long-term framework to achieve the 35 percent goal without compromising power reliability or the financial stability of LADWP and its customers.

Eligible renewable energy resources currently comprise 14 percent of LADWP power (Table 3.5-1). Customers who participate in the LADWP Green Power for a Green LA Program can elect to purchase 100 percent renewable energy for a small premium (currently three cents per kilowatt hour).

Table 3.5-1 Current Energy Mix

<table>
<thead>
<tr>
<th>Energy Resources</th>
<th>LADWP Power (projected)</th>
<th>LADWP Green Power (projected)</th>
<th>2007 CA Power Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Renewable</td>
<td>14%</td>
<td>100%</td>
<td>10%</td>
</tr>
<tr>
<td>– Biomass &amp; waste</td>
<td>1%</td>
<td>-</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>– Geothermal</td>
<td>2%</td>
<td>-</td>
<td>2%</td>
</tr>
<tr>
<td>– Small hydroelectric</td>
<td>5%</td>
<td>25%</td>
<td>6%</td>
</tr>
<tr>
<td>– Solar</td>
<td>&lt;1%</td>
<td>-</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>– Wind</td>
<td>6%</td>
<td>75%</td>
<td>2%</td>
</tr>
<tr>
<td>Coal</td>
<td>44%</td>
<td>-</td>
<td>32%</td>
</tr>
<tr>
<td>Large Hydroelectric</td>
<td>7%</td>
<td>-</td>
<td>24%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>26%</td>
<td>-</td>
<td>31%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>9%</td>
<td>-</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>&lt;1%</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: 2009 LADWP Power Content Label (LADWP, 2009b)
3.5.2 Significance Thresholds

As noted in the Initial Study, for the purposes of this EIR, and in accordance with Appendix F of the CEQA Guidelines, an impact to energy, conservation, and sustainability is considered significant if the proposed project would:

- Cause wasteful, inefficient, and unnecessary consumption of energy during project construction, operation, maintenance, and/or removal;
- Cause preempting of future energy development or future energy conservation;
- Fail to achieve LEED™ certification for new construction; and
- Fail to exceed Title 24 Energy Efficiency Standards by 20 percent.

3.5.3 Environmental Impact Analysis

3.5.3.1 Methodology

Per Appendix F of the CEQA guidelines, energy conservation impacts were analyzed by estimating project energy requirements by amount and fuel type. This data was used to evaluate the project’s effects on energy resources and the degree to which the project complies with existing energy standards.

3.5.3.2 Campus Impacts

Construction Impacts

Unnecessary Consumption of Energy

Construction of the project would be in compliance with LACCD Sustainable Building Policy which requires LACCD to construct, renovate, and decommission its facilities and buildings in a sustainable fashion. The construction impacts on unnecessary consumption of energy related to the campus would be less than significant.

Preemption of Future Energy Development and Energy Conservation

The 2007 Master Plan and proposed 2009 Master Plan incorporate on-site renewable energy generation, energy conservation, and demand-side management features. The construction impacts on preemption of future energy development and energy conservation related to the campus would be less than significant.

LEED™ Certification for New Construction

Construction of new facilities over 7,500 gsf of occupied space shall achieve the highest possible level of LEED certification. LACCD intends to reduce energy consumption associated with the construction of the 2007 Master Plan and proposed 2009 Master Plan by diverting construction waste from disposal by 75 percent, using building materials with 20 percent recycled content, and procuring 20 percent of building materials from within the surrounding region. The construction impacts on LEED certification for new construction related to the campus would be less than significant.
Operational Impacts

Unnecessary Consumption of Energy

Operations of the project would be in compliance with LACCD Sustainable Building Policy which requires the LACCD to manage and maintain its facilities and buildings in a sustainable fashion. Specifically, all new construction is required to exceed Title 24 standards by 20 percent and all facilities and buildings over 7,500 gsf of occupied space are required to achieve a minimum LEED certification. New LEED buildings must be supplied by 50 percent of the total building energy consumption from renewable energy, with a minimum of 20 percent on-site generation of renewable energy. To supplement the renewable energy requirement, green power may be purchased in the form of green certified renewable energy credits (RECs).

Baseline electric energy demand for LAMC is estimated at 5,214 MWh annually, based on metered data received from LADWP for the period of record beginning April 2008 and ending March 2009. Under a BAU growth scenario, future electric energy demand at full build-out of the project is estimated at 7,449 MWh/yr.

Baseline natural gas usage for LAMC is estimated at 8,132 million British thermal units (MMBtu) annually, based on metered data for the 2007 calendar year. Under a BAU growth scenario, future natural gas demand at full build-out of the project is estimated at 11,617 MMBtu/yr.

Energy is used in the conveyance, treatment, and distribution of water. Therefore, there is a certain amount of “embodied energy” in every unit of water utilized by a project. According to the CEC, the typical amount of embodied electric energy in every million gallons (mg) of water in southern California is 8,900, 100, and 1,200 kWh for water supply and conveyance, treatment, and distribution, respectively (CEC, 2005). Therefore, the typical total amount of embodied electric energy in every mg of potable water is 10,200 kWh, or 10.2 MWh. Baseline water use for LAMC is estimated at 13 mg/yr, based on utility invoices for the period of record beginning July 2008 and ending December 2008. Applying the typical embodied energy factor given by the CEC yields 135 MWh/yr of electric energy required for potable water supply and conveyance, treatment, and distribution to LAMC. Under a BAU growth scenario, future water demand is estimated at 19 mg/yr, with embodied energy of 192 MWh/yr.

Energy is also required for the treatment of wastewater. According to the CEC, 2.5 MWh are typically required for the treatment of every mg of wastewater in southern California (CEC, 2005). Baseline wastewater disposal from LAMC is estimated at 4 mg/yr, based on utility invoices for the period of record beginning August 2008 and ending December 2008. Applying the typical embodied energy factor given by the CEC yields 9 MWh/yr of electric energy required for treatment of wastewater derived from LAMC. Under a BAU growth scenario, future wastewater disposal is estimated at 9 mg/yr, with embodied energy of 14 MWh/yr.

Actual future energy use is projected to be less than the estimated BAU scenario due to energy conservation design features integrated into the LAMC Master Plan. As a result, the operational impacts on unnecessary consumption of energy related to the campus would be less than significant.
3.5 Energy, Conservation, and Sustainability

**Preemption of Future Energy Development and Energy Conservation**

The 2007 Master Plan and proposed 2009 Master Plan incorporate on-site renewable energy generation, energy conservation, and demand side management features. The operational impacts on preemption of future energy development and energy conservation related to the campus would be less than significant.

**LEED™ Certification for New Construction**

In order to achieve a LEED certification under the USGBC LEED for New Construction and Major Renovations Version 2.2 protocol, a building must achieve at least 26 points out of a total 69 possible points (USGBC, 2005). Among the LEED design features incorporated in the LAMC Master Plan are optimized energy performance, on-site renewable energy, green power, public transportation access, and providing bicycle storage and changing rooms. The LEED rating for the Nursery Property is not known at this time, but is expected to be capable of achieving a LEED rating. The Eldridge Avenue Streetscape Improvements are not rated. The Family and Consumer Studies Building is designed to achieve 47 points, based on the LEED-NC Version 2.2 rating scale which qualifies the facility for LEED Gold certification. The Media Arts Center is designed to achieve 44 points, based on the LEED-NC Version 2.2 rating scale which qualifies the facility for LEED Gold Certification. The Health, Physical Education and Fitness Center Building is designed to achieve 34 points, based on the LEED-NC Version 2.2 rating scale, which would qualify the building for LEED Silver certification. Operational impacts on LEED certification for new construction related to the campus would be less than significant.

**Title 24 Energy Efficiency Standards**

The Los Angeles Community College District Sustainable Building Policy requires all new construction to exceed Title 24 standards by 20 percent. Therefore, operational impacts on Title 24 energy efficiency standards related to the campus would be less than significant.

**Cumulative Impacts**

The cumulative impacts of past, present, and probable future-related projects would result in an increase in local energy consumption. Increase in on-peak and base load electricity demand would be partially offset by on-site energy generation and energy efficiency design elements. Unless the project generates and procures enough renewable energy to satisfy 100 percent of its energy demand, the project would result in an incremental increase in the depletion of non-renewable energy resources, including coal and natural gas. Because the energy to be used by the project would meet LACCD’s energy conservation requirements, and since other new projects in the City of Los Angeles are also being encouraged to meet LEED criteria, impacts of this energy use would not be cumulatively considerable. Therefore, cumulative impacts on energy conservation and sustainability related to the campus would be less than significant.

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2 City of Los Angeles New Green Building Program. Available at http://www.lacity.org/ead/environmentla/greenbuilding/newgreenbuilding.htm/
3.5.3.3 Athletic Fields Impacts

Construction Impacts

Unnecessary Consumption of Energy
Grading of the sites would be minimized to reduce energy use, costs, and land disruption due to construction. Construction of the project would be in compliance with LACCD Sustainable Building Policy which requires the LACCD colleges to construct, renovate, and decommission their facilities and buildings in a sustainable fashion. The construction impacts on unnecessary consumption of energy related to the athletic fields would be less than significant.

Preemption of Future Energy Development and Energy Conservation
The 2007 Master Plan and proposed 2009 Master Plan incorporate on-site renewable energy generation, energy conservation, and demand-side management features, including use of solar-powered coverings for the site’s parking. The construction impacts on preemption of future energy development and energy conservation related to the athletic fields would be less than significant.

Operational Impacts

Unnecessary Consumption of Energy
Operations of the project would be in compliance with LACCD Sustainable Building Policy which requires the its colleges to manage and maintain their facilities and buildings in a sustainable fashion. Specifically, all new construction is required to exceed Title 24 standards by 20 percent. The operational impacts on unnecessary consumption of energy related to the Athletic Fields would be less than significant.

Preemption of Future Energy Development and Energy Conservation
The 2007 Master Plan and proposed 2009 Master Plan incorporate on-site renewable energy generation, energy conservation, and demand side management features. The operational impacts on preemption of future energy development and energy conservation related to the athletic fields would be less than significant.

Title 24 Energy Efficiency Standards
The Los Angeles Community College District Sustainable Building Policy requires all new construction to exceed Title 24 standards by 20 percent. Therefore, operational impacts on Title 24 energy efficiency standards related to the athletic fields would be less than significant.

Cumulative Impacts
The cumulative impacts of past, present, and probable future-related projects would result in an increase in local energy consumption. Increase in on-peak and base-load electricity demand would be partially offset by on-site solar-power energy generation. Since the project would not generate enough renewable energy to satisfy 100 percent of its energy demand, the project would result in an incremental increase in the depletion of non-renewable energy resources including coal and natural gas. Since the Athletic Fields would only use night lighting occasionally, and other electric use would be small, cumulative impacts on energy conservation and sustainability related to the athletic fields would be less than significant.
3.0 Setting, Environmental Impact Analysis, Mitigation Measures
3.5 Energy, Conservation, and Sustainability

3.5.4 Mitigation Measures for Significant Impacts
No mitigation measures are necessary

3.5.5 Level of Significance after Mitigation
Impacts would be less than significant.