

# **UC DAVIS**

## **LARGE SOLAR POWER PLANT**

Tiered Initial Study and  
Negative Declaration

The following Initial Study has been prepared in compliance with CEQA.

**Prepared By:**

**ENVIRONMENTAL STEWARDSHIP AND SUSTAINABILITY**

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**State Clearinghouse No. 2013082003**

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## **1 PROJECT INFORMATION**

Project title:

UC Davis Large Solar Power Plant

Project location:

University of California, Davis  
Yolo County and Solano County

Lead agency's name and address:

The Regents of the University of California  
1111 Franklin Street  
Oakland, CA 94607

Contact person:

A. Sidney England, Assistant Vice Chancellor for Environmental  
Stewardship and Sustainability, 530-752-2432

Project sponsor's name and address:

Environmental Stewardship and Sustainability  
University of California  
One Shields Avenue  
436 Mrak Hall  
Davis, CA 95616-8678

Location of administrative record:

See lead agency.

Identification of previous documents relied upon for tiering purposes:

This environmental analysis is tiered from the Environmental Impact Report (EIR) for the UC Davis 2003 Long Range Development Plan (2003 LRDP) (State Clearinghouse No. 2002102092). The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives through the 2015-16 academic year. Section 2.2 provides additional information about the tiering process. The 2003 LRDP and its EIR are available for review at the following locations:

- UC Davis Environmental Stewardship and Sustainability in 436 Mrak Hall on the UC Davis campus
- Reserves at Shields Library on the UC Davis campus
- Yolo County Public Library at 315 East 14<sup>th</sup> Street in Davis
- Solano County Public Library, 1150 Kentucky Avenue, Fairfield, CA 94533
- Online at [http://sustainability.ucdavis.edu/progress/commitment/environmental\\_review/index.html](http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html)

## **2 INTRODUCTION**

### **2.1 INITIAL STUDY**

Pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining whether an EIR, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The CEQA Guidelines require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

### **2.2 TIERING PROCESS**

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects that implement the program. This environmental document incorporates by reference the discussions in the 2003 LRDP EIR (the Program EIR) and concentrates on project-specific issues. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the Program EIR and by incorporating those analyses by reference.

Section 15168(d) of the State CEQA Guidelines provides for simplifying the preparation of environmental documents on individual parts of the program by incorporating by reference analyses and discussions that apply to the program as a whole. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

This Initial Study is tiered from the UC Davis 2003 LRDP EIR in accordance with Sections 15152 and 15168 of the CEQA Guidelines and Public Resources Code Section 21094. The 2003 LRDP EIR is a Program EIR that was prepared pursuant to Section 15168 of the CEQA Guidelines. The 2003 LRDP is a comprehensive land use plan that guides physical development on campus to accommodate projected enrollment increases and expanded and new program initiatives through the 2015-16 academic year. The 2003 LRDP EIR analyzes full implementation of uses and physical development proposed under the 2003 LRDP, and it identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth.

By tiering from the 2003 LRDP EIR, this Tiered Initial Study will rely on the 2003 LRDP EIR for the following:

- a discussion of general background and setting information for environmental topic areas;
- overall growth-related issues;
- issues that were evaluated in sufficient detail in the 2003 LRDP EIR for which there is no significant new information or change in circumstances that would require further analysis; and
- assessment of cumulative impacts.

This Initial Study will evaluate the potential environmental impacts of the proposed project with respect to the 2003 LRDP EIR to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Section 6 of this document, and based on the analysis contained in this Initial Study, it has been determined that the proposed project would not result in any potentially significant impacts that cannot be mitigated to less-than-significant levels or that were not adequately addressed by the 2003 LRDP EIR.

The project would result in one new potentially significant impact that was not previously identified in the 2003 LRDP EIR, but implementation of an identified project-specific mitigation measure would reduce this impact to a less-than-significant level. Therefore, preparation of a Negative Declaration is appropriate (the Negative Declaration is presented in Appendix A).

This Initial Study concludes that potentially significant project impacts are addressed by the measures that have been adopted as part of the approval of the 2003 LRDP. Therefore, those 2003 LRDP EIR mitigation measures that are related to, and may reduce the impacts of, this project will be identified in this Initial Study. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they do not need to be readopted, but rather are incorporated as part of the project. The benefits of these mitigation measures will be achieved independently of considering them as specific mitigation measures of this project. Nothing in this Initial Study in any way alters the obligations of the campus to implement the LRDP mitigation measures.

### **2.3 PUBLIC AND AGENCY REVIEW**

This Initial Study was circulated for public and agency review from July 12, 2013 to August 12, 2013. Copies of this document, the 2003 LRDP, and the 2003 LRDP EIR were available for review at the following locations:

- UC Davis Environmental Stewardship and Sustainability in 436 Mrak Hall on the UC Davis campus
- Reserves at Shields Library on the UC Davis campus
- Yolo County Public Library at 315 East 14th Street in Davis
- Solano County Public Library, 1150 Kentucky Avenue, Fairfield, CA 94533
- Online at [http://sustainability.ucdavis.edu/progress/commitment/environmental\\_review/index.html](http://sustainability.ucdavis.edu/progress/commitment/environmental_review/index.html)

Comments on this Initial Study were due by 5:00 PM on August 12, 2013 and could have been e-mailed to [environreview@ucdavis.edu](mailto:environreview@ucdavis.edu) or sent to:

A. Sidney England  
Assistant Vice Chancellor – Environmental Stewardship and Sustainability  
University of California  
One Shields Avenue  
436 Mrak Hall  
Davis, CA 95616

During the 30-day comment period, three letters were received. Copies of the letters are provided in Appendix B. The letters raised no new significant environmental issues. The letter from Central Valley Regional Water Quality Control Board raised no specific environmental issues and listed standard project requirements that could be applicable to development projects. The letter from the Central Valley Flood Protection Board stated that a permit would be needed for a project affecting the nearby levee with construction or planting activities. The letter from the Yocha Dehe Wintun Nation requested a visit to the site. A site visit was conducted on August 12, 2013 and the representative from the Yocha Dehe Wintun Nation indicated that no additional cultural resources coordination would be needed for the project.

## **2.4 PROJECT APPROVALS**

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental document and approving the proposed project. It is anticipated that the Board of Regents of the University of California (The Regents) will consider approval of the proposed amendment to the LRDP to accommodate the Project in September 2013. Additional approvals necessary to implement the Project (business agreements with development partner(s) and project design approval) are within the delegated approval levels of the Chancellor of the UC Davis campus and could take place in Fall 2013.

## **2.5 ORGANIZATION OF THE INITIAL STUDY**

This Initial Study is organized into the following sections:

**Section 1 – Project Information:** provides summary background information about the proposed project, including project location, lead agency, and contact information.

**Section 2 – Introduction:** summarizes the Initial Study's relationship to the 2003 LRDP EIR, the scope of the document, the project's review and approval processes, and the document's organization.

**Section 3 – Project Description:** includes a description of the proposed project, including the need for the project, the project's objectives, and the elements included in the project.

**Section 4 – Consistency with the 2003 LRDP:** describes the consistency of the proposed project with the 2003 LRDP and 2003 LRDP EIR.

**Section 5 – Environmental Factors Potentially Affected:** identifies which environmental factors, if any, involve at least one significant or potentially significant impact that has not been previously addressed in the 2003 LRDP EIR and cannot be reduced to a less-than-significant level.

**Section 6 – Determination:** indicates whether impacts associated with the proposed project are significant, and what, if any, additional environmental documentation is required.

**Section 7 – Evaluation of Environmental Impacts:** contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed project with respect to the 2003 LRDP EIR. This section also presents a background summary for each resource area, the standards of significance, relevant impacts and mitigation measures from the 2003 LRDP EIR, and an explanation of all checklist answers.

**Section 8 – References:** lists references used in the preparation of this document.



**Section 9 – Agencies and Persons Consulted:** provides the names of individuals contacted in preparation of this document.

**Section 10 – Report Preparers:** lists the names of individuals involved in the preparation of this document.

**Appendix A –Negative Declaration:** presents the Negative Declaration for the project.

**Appendix B–Comments and Comment Responses:** presents comments received and responses to comments for the project.

### 3 PROJECT DESCRIPTION

#### 3.1 REGIONAL LOCATION

The approximately 5,300 acre UC Davis campus is located in Yolo and Solano Counties approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis (see Figure 1). The campus is comprised of four campus units: the central campus, the south campus, the west campus, and Russell Ranch. Most academic and extracurricular activities occur within the central campus. The central campus is bounded generally by Russell Boulevard to the north, State Route 113 (SR 113) to the west, Interstate 80 (I-80) and the Union Pacific Railroad tracks to the south, and A Street to the east. The south campus is located south of I-80 and north of the South Fork of Putah Creek. The west campus is bounded by SR 113 to the east, Putah Creek to the south, Russell Boulevard to the north, and extends approximately one-half mile west of County Road 98. The south and west campus units are contiguous with the central campus, and are used primarily for Teaching and Research Fields. The approximately 1,600 acre Russell Ranch portion of the campus lies to the west, separated from the west campus by approximately one and one-half miles of privately owned agricultural land. Russell Ranch was purchased in 1990 for campus uses including large-scale agricultural and environmental research, study of sustainable agricultural practices, and habitat mitigation. Russell Ranch is bordered roughly by County Road 96 on the east, Putah Creek on the south, Covell Boulevard on the north, and Russell Boulevard and privately owned agricultural land on the west and northwest.

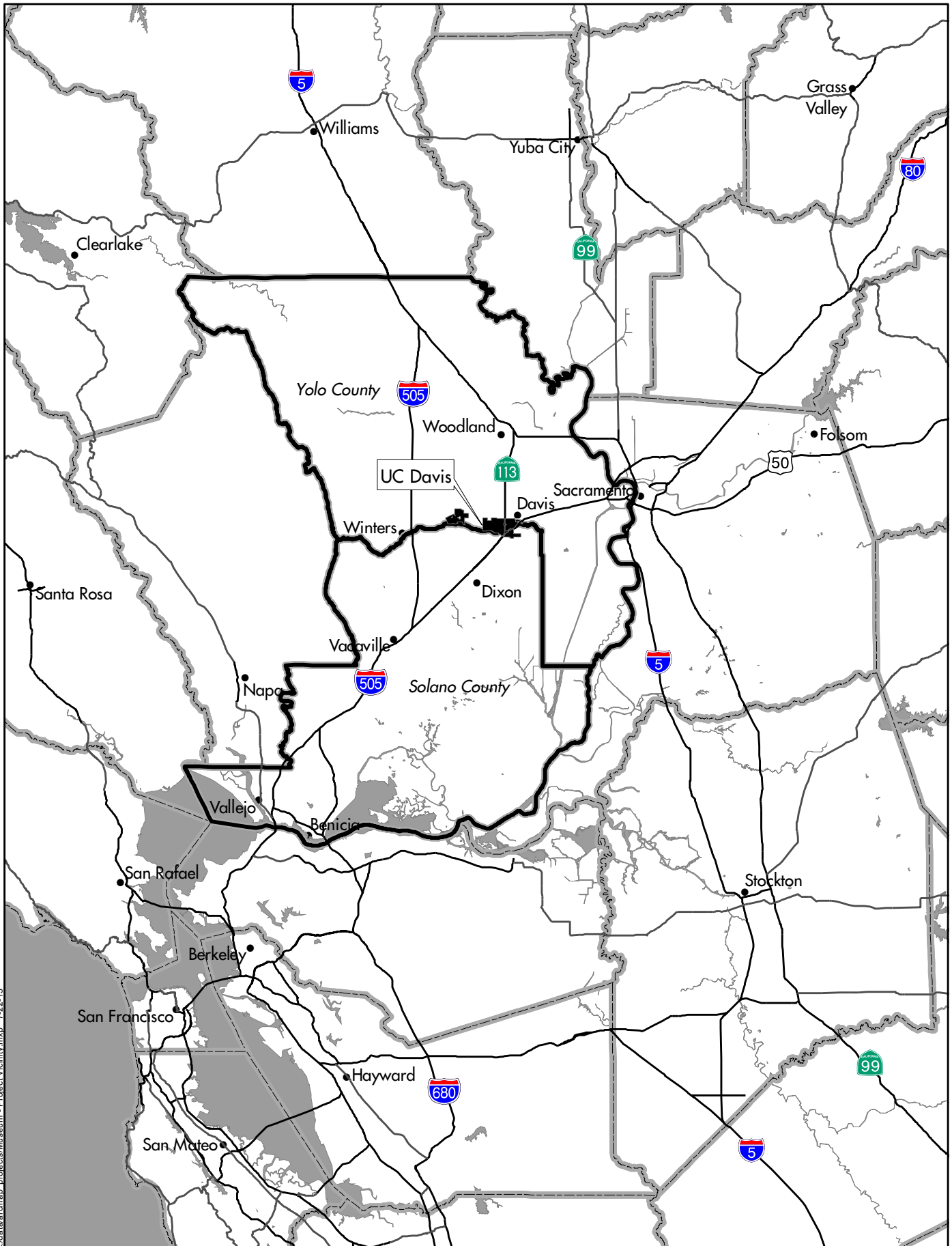
#### 3.2 PROJECT OVERVIEW

UC Davis proposes to construct a new solar photovoltaic facility for electricity generation. The proposed Large Solar Power Plant (LSPP) project is planned for up to 70 acres and would help the campus meet demand for electricity and achieve goals for reducing greenhouse gas emissions. The site (Figure 2), on the South Campus in Solano County, is south of Interstate 80 and approximately ½ mile east of Old Davis Road along the north levee of Putah Creek on land used for agricultural production. The solar panels would be installed in rows to maximize solar efficiency while allowing maintenance access on paths between the rows. The installation would include concrete footings for some accessory equipment and piers driven directly into the ground would support the solar panels approximately one to five feet above the ground.

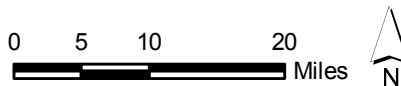
The proposed project would be constructed and operated by a third-party developer through a power purchase agreement which would allow installation of solar facilities on the 70 acres in one or more phases to provide a solar project with capacity of 7 to 14 megawatts (MW). Electricity generation from the project would provide up to 11% of the current total campus yearly demand for electricity and would reduce campus greenhouse gas emissions.

The proposed site is designated as *Teaching and Research Fields* for agricultural uses in the UC Davis 2003 Long Range Development Plan (LRDP) (Figure 3). The proposed electricity generation project would not be consistent with the *Teaching and Research Fields* designation. In conjunction with reviewing the environmental effects of the project, the University would amend the 2003 LRDP land use designation to a *Support* land use designation so that the proposed electricity generation activities would be consistent with the amended LRDP.

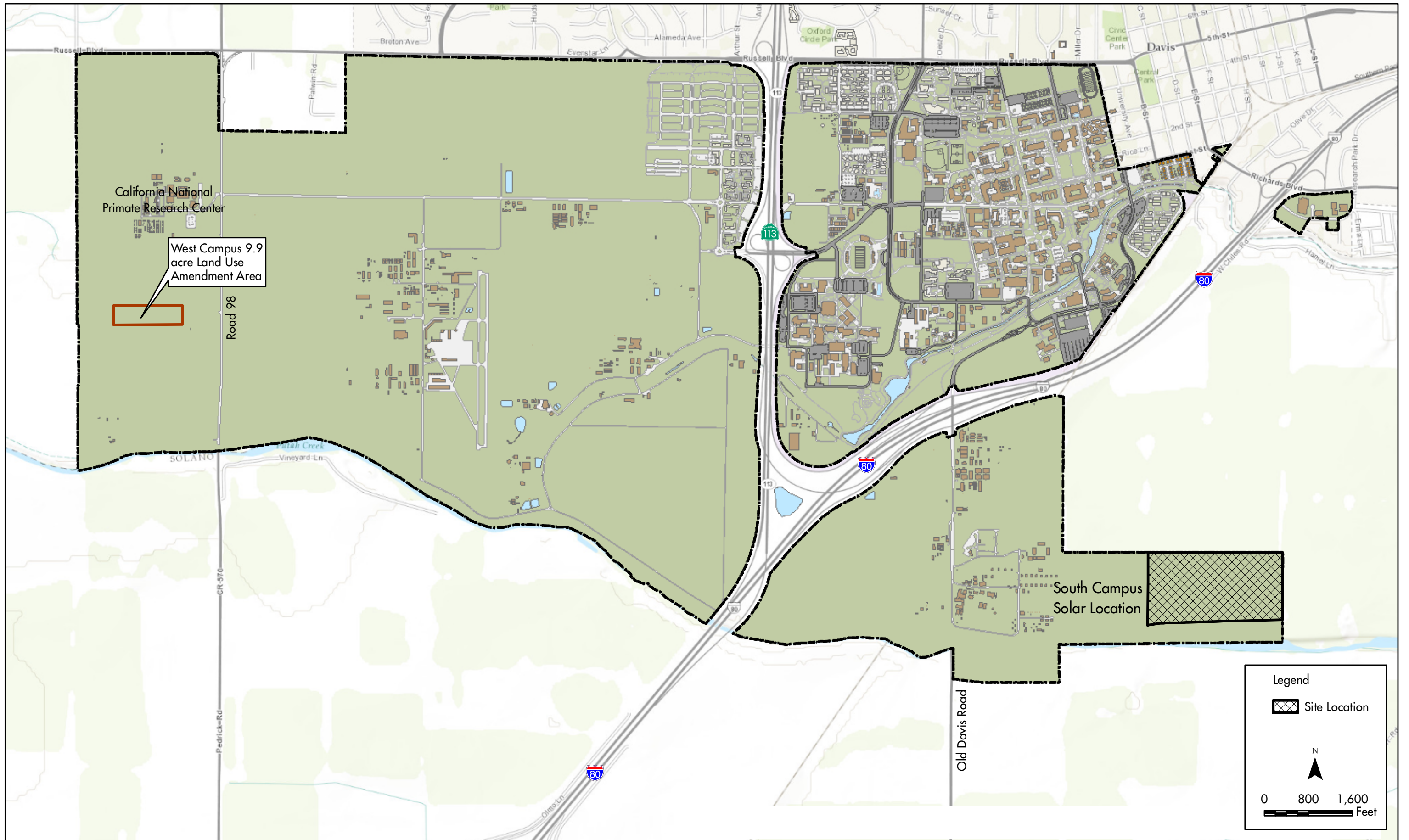
The 2003 LRDP anticipated development projects at UC Davis would convert approximately 745 acres of agricultural land to developed uses by 2015-16. The University desires maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land previously identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to re-designate other



c:\data\map\_projects\Museum - Project\vicinity.mxp 7-22-13

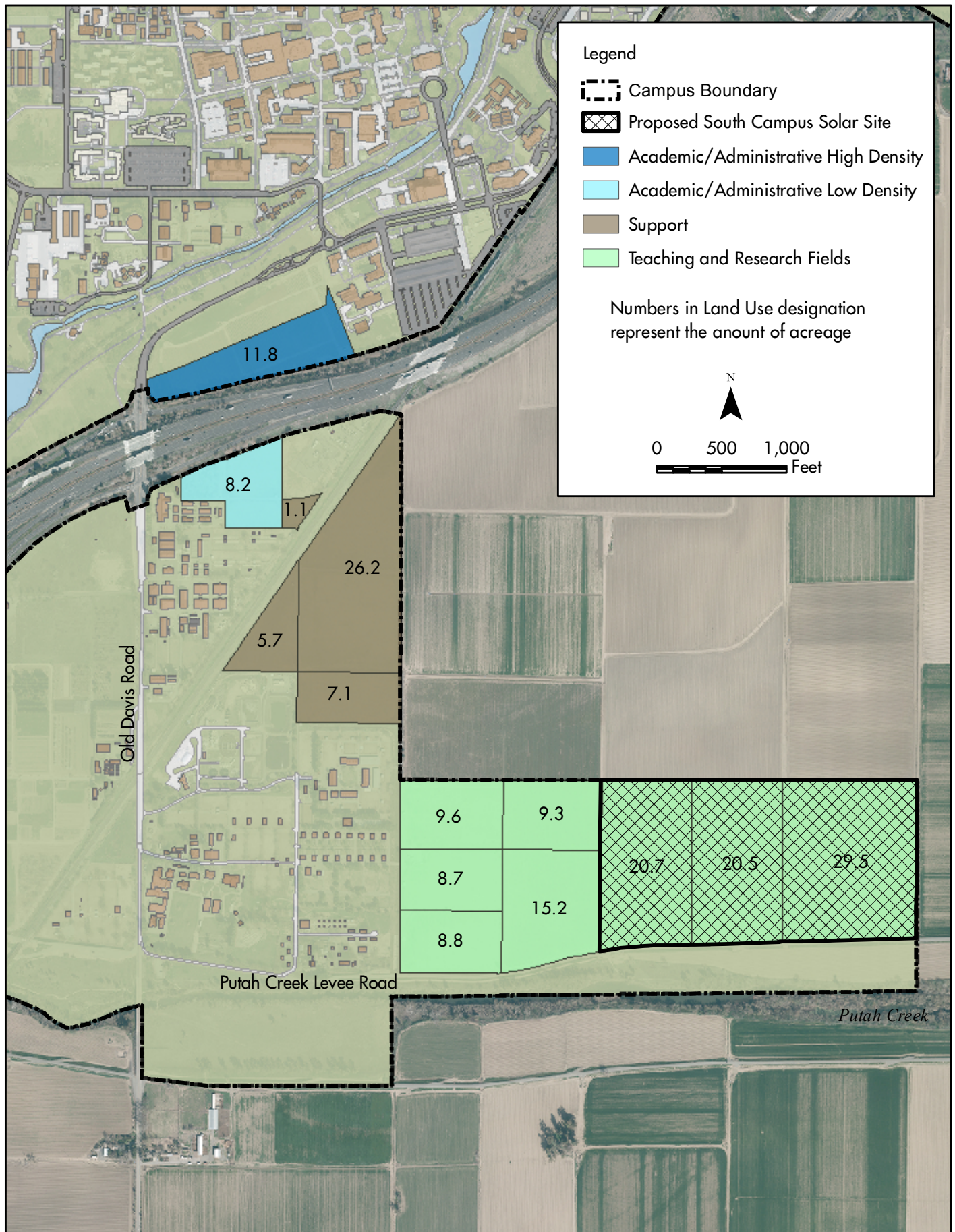


**Figure 1**  
**UC Davis Location**

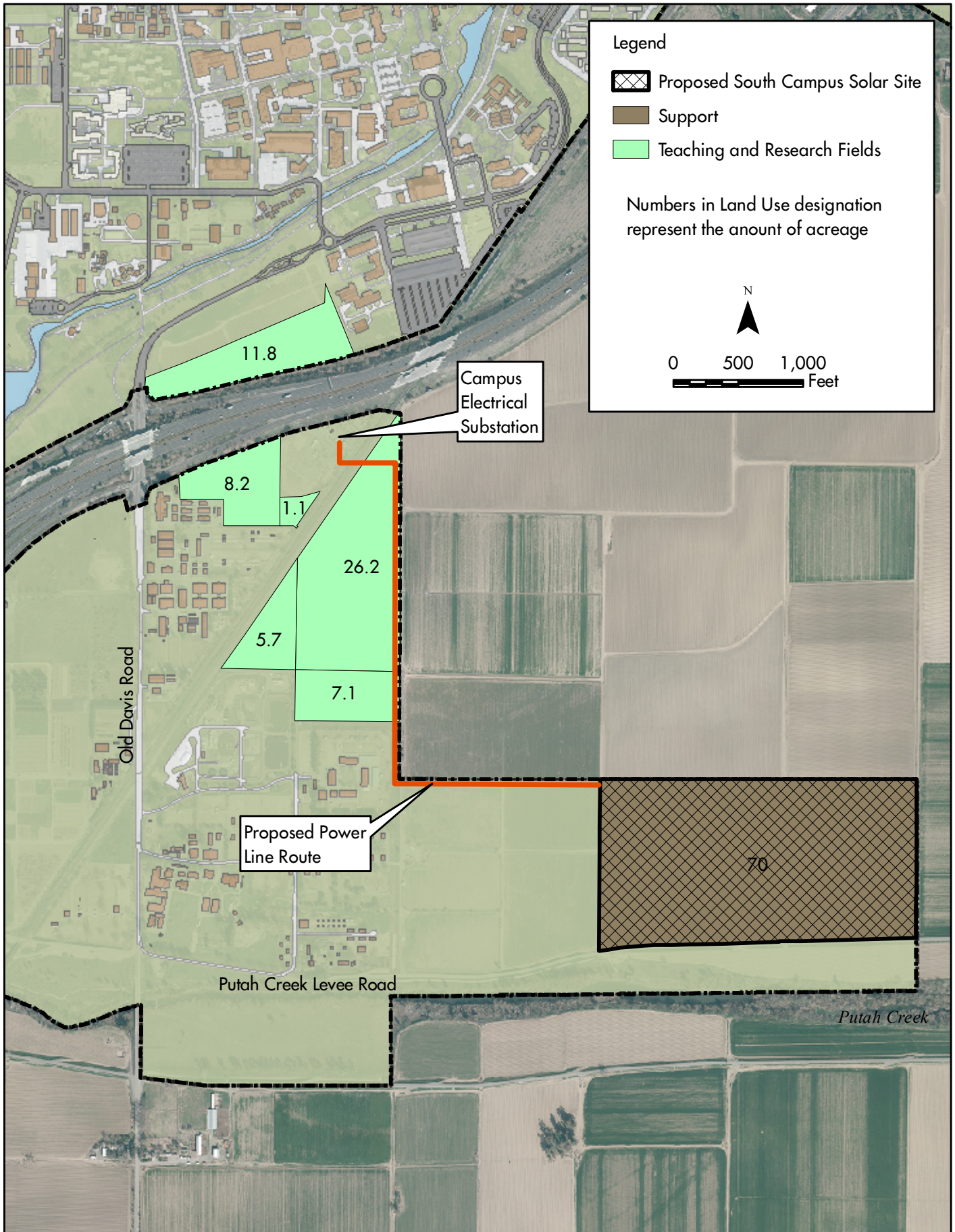


**Figure 2**  
**Campus Location**

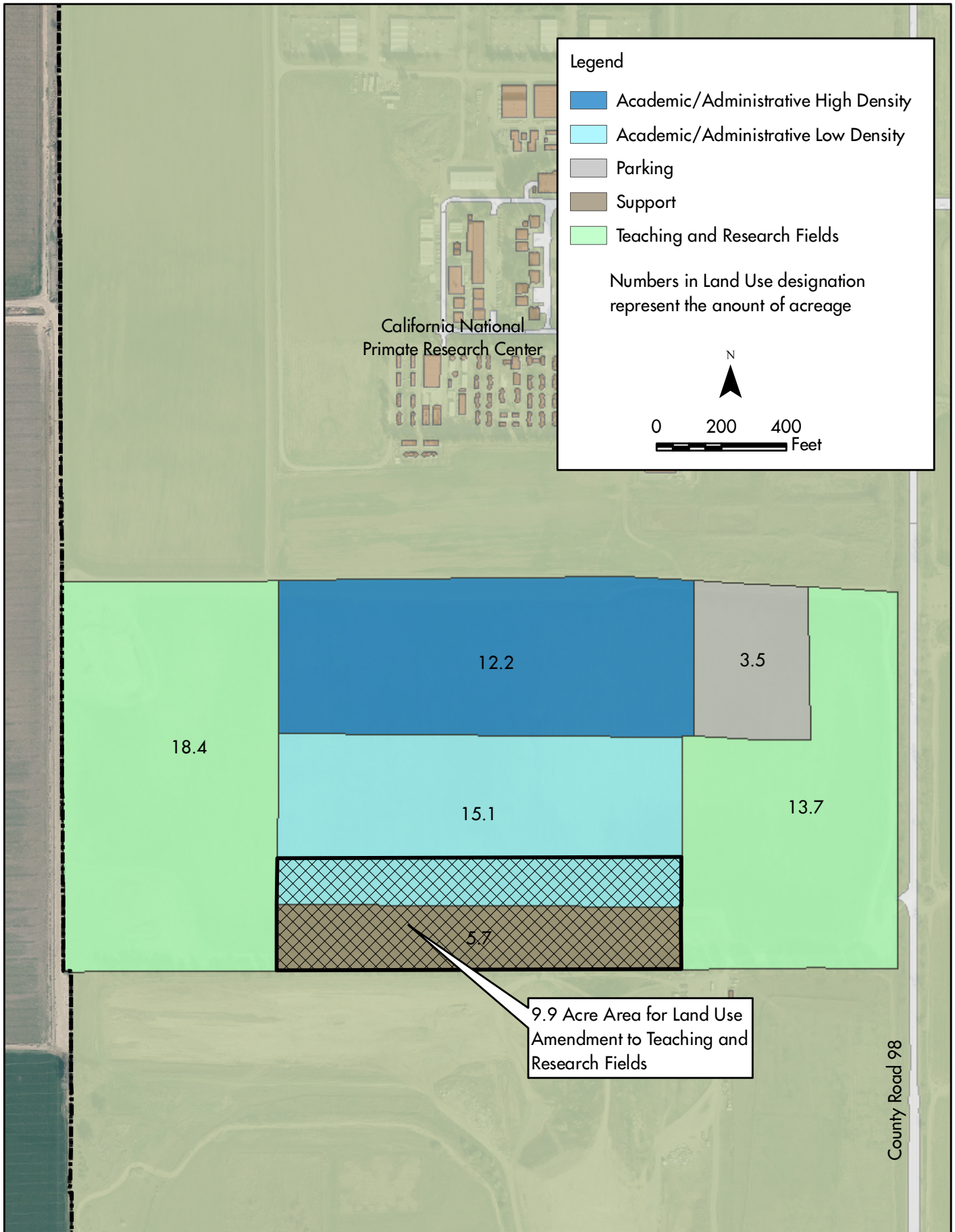












campus land (primarily on the South Campus (Figure 4) and West Campus (Figure 5)) from a designation for future development to a land use designation for on-going agricultural uses.

Water for washing the panels would be provided to the site using water trucks that would refill using either the existing well at the project site or a campus water main. New overhead electricity lines and support poles would be used to transmit the new electricity from the project site into the campus electrical system at the campus electrical substation approximately ½ mile north of the project site. In order to accept all of the electricity generated from the solar panels, minor equipment upgrades to electrical equipment at the campus electrical substation may be needed.

### 3.3 PROJECT SITE

This environmental review evaluates the environmental impacts of developing up to 70 acres for electrical power production using solar photovoltaic panels. Through an on-going engineering and financial assessment, the University may elect to proceed with developing the entire 70 acres or a portion of the site. The project site was selected based on a consideration of university-owned land that could be made available for electricity production, proximity to an adequate electrical connection, and the technical feasibility of installing the solar panels and eventually managing the land for electrical production.

The UC Davis South Campus consists of approximately 600 acres south of Interstate 80 and bisected by Old Davis Road. The South Campus is primarily used for agricultural and veterinary support uses such as field and orchard research, animal enclosures, and small research facilities. In addition, the campus wastewater treatment plant is located on the South Campus.

The South Campus project site is located along the eastern boundary of the South Campus on the north side of the Putah Creek levee (Figure 3). The 70 acres are currently used for production of field crops. The site is flat with no buildings, no trees, and no other improvements except for a shallow groundwater well and small, unlined irrigation ditches. North and east of the site are privately owned agricultural fields used for agricultural production. South of the site is the Putah Creek levee separating the agricultural land from the UC Davis Putah Creek Reserve along the South Fork of Putah Creek.

As shown on Figure 3, the 2003 LRDP designates the project site for *Teaching and Research Fields*. The proposed solar power development would not be consistent with the LRDP land use designation. The proposed project includes a proposal to amend the 2003 LRDP land use designation at the South Campus 70-acre site to *Support*.

The proposed project site was not designated for development in the 2003 LRDP EIR and consequently, the LRDP EIR did not identify the project site as part of the approximately 745 acres for anticipated conversion from agricultural uses to non-agricultural uses. The University intends to develop the project site at this time and maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to designate the 70-acre project site for development and re-designate 71.1 acres of other campus land from a designation for future development to a land use designation for on-going agricultural uses.

To amend the LRDP, the campus would change the designation on the project site from *Teaching and Research Fields* to *Support*. Land surrounding the project site would be continue as agricultural land and the project development would not interfere with future farming of these surrounding lands. On the surrounding lands, equipment access, water supply, and parcel sizes after project development would remain adequate for continued farming operations.



In the South Campus, as shown in Figure 4, the campus would re-designate 61.2 acres of land currently shown as *Support* and *Academic* and *Administrative* to *Teaching and Research Fields*. In the West Campus, 9.9 acres would be designated as *Teaching and Research Fields* rather than the existing designations of *Support* and *Academic and Administrative*. In total, the project site would be 70 acres designated as *Support* and 71.1 acres of South Campus and West Campus land would be designated as *Teaching and Research Fields*. With the amended land uses, the proposed project would be consistent with the 2003 LRDP for both the land uses at the solar project site and with the overall amount of 745 acres of land anticipated for agricultural land conversion to developed uses.

### 3.4 PROJECT NEED AND OBJECTIVES

The project has been proposed to help meet University of California goals to reduce campus greenhouse gas emissions. The power produced from the project would offset the purchase of electricity from off-campus generators including electricity generated by natural gas power plants. The current market conditions for solar panels has created an opportunity for the campus to partner with a third-party developer to receive a large portion of the overall campus electricity demand through solar production. The project would help support the campus goal of reducing greenhouse gas emissions to 1990 levels by 2020 and achieving carbon neutrality as soon as possible.

The objectives of the project are to:

- Obtain on-site electricity generation producing no greenhouse gas emissions.
- Leverage use of campus land and a large-scale project to minimize net project costs.
- Locate on a site that does not impact other campus uses or future needs.
- Compensate for agricultural land losses on the campus by removing an equivalent amount of land from future development under the 2003 LRDP.

### 3.5 PROJECT ELEMENTS

#### 3.5.1 Site Elements

- **Grading and compaction.** Minimal site grading would be necessary to prepare the project site. For site drainage, the general slope of the existing fields would be maintained with minor modifications to maintain drainage. Site compaction would also be minimal with dirt access roads for maintenance receiving the most amount of compaction.
- **Installing stanchions, inverters, and photovoltaic panels.** The design of the anchoring systems will vary depending on the equipment selected as the developer. However, the installations are expected to include installing driven steel piers for mounting the solar panels. Electrical lines within the solar site will potentially be buried below ground in shallow trenches to connect the panels and distribute the electricity. The photovoltaic panels would be aligned in rows to optimize solar collection. The spacing between rows would be sufficient to allow maintenance as described below.
- **Fencing and utility connection installations.** The project site would be fenced with a metal chainlink fence approximately 6 feet in height. The utility connections would extend from the project site to a point of connection to the campus high-voltage electrical substation. New, above

ground transmission lines would be built to connect the output of the solar facility with the existing substation which is approximately ½ mile to the north. The anticipated point of connection would be to the existing overhead lines located west and north of the site at the UC Davis electrical substation.

- **Maintenance.** Occasional maintenance of the solar panels would include rinsing the panels with water for dust removal, inspections, preventive maintenance and replacement of failed equipment. Site maintenance would include any repairs to the perimeter fencing, control of weeds through the use of mowing, grazing sheep, and/or herbicides.

### 3.5.2 Utilities and Infrastructure

As discussed briefly below and analyzed in Section 7.16, the proposed project would require connections to campus utilities and infrastructure including electricity, telecommunications, and water.

- **Domestic Water:** Potable water for use rinsing the panels could be provided by the campus domestic water system.
- **Electricity:** The main campus currently receives electricity from the Western Area Power Administration (WAPA) through PG&E transmission lines at the campus substation located south of I-80. The campus electrical system has an available capacity of 64.4 megawatts (MW). Annual electrical usage on campus in 2011-12 was approximately 235 million kilowatt-hours (KWh) per year. The project would not require additional electricity but would instead generate 7 to 14 MW of power during peak production periods. A new overhead electrical line would connect the proposed solar panels with the campus electrical substation.
- **Telecommunications:** Operating and security data from the project site would be transmitted wirelessly to the campus telecommunication system. No trenching or other construction would be needed to install the equipment.

### 3.5.3 Population

The proposed project would result in no increase in student enrollment and no increase in employment. The campus population would not increase as a result of the project and the project would not increase regional population.

## 3.6 CONSTRUCTION SCHEDULE AND STAGING

Construction of the proposed project is anticipated to begin in 2014 and would take approximately four months to complete. Construction staging and contractor parking associated with the proposed project would occur on the project site with no need for off-site staging or parking.

## 4 CONSISTENCY WITH THE 2003 LRDP AND 2003 LRDP EIR

In order to determine the proposed project's consistency with the 2003 LRDP and 2003 LRDP EIR, the following questions must be answered:

- Is the proposed project included in the scope of the development projected in the 2003 LRDP?
- Is the proposed location of the project in an area designated for this type of use in the 2003 LRDP?
- Are the changes to campus population associated with the proposed project included within the scope of the 2003 LRDP's population projections?
- Are the objectives of the proposed project consistent with the objectives adopted for the 2003 LRDP?
- Is the proposed project within the scope of the cumulative analysis in the 2003 LRDP EIR?

The following discussion describes the proposed project's relationship to and consistency with the development projections, population projections, land use designations, objectives, and cumulative impacts analyses contained in the 2003 LRDP and the 2003 LRDP EIR.

### 4.1 2003 LRDP SCOPE OF BUILDING AND FACILITY DEVELOPMENT

The 2003 LRDP anticipates academic and administrative space on campus will increase to approximately 7,175,000 asf through 2015-16. While the proposed project would not construct new academic and administrative space, the additional support facilities provided by the project would not increase the amount of square footage for the campus. Sections 4.2 and 4.3 describe the land use and population relationship between the project and the 2003 LRDP.

### 4.2 2003 LRDP LAND USE DESIGNATION

As shown on Figure 3, the 2003 LRDP designates the project site for *Teaching and Research Fields*. The proposed solar power development would not be consistent with the LRDP land use designation. The proposed project includes a proposal to amend the 2003 LRDP land use designation at the South Campus 70-acre site to *Support*.

The proposed project site was not designated for development in the 2003 LRDP EIR and consequently, the LRDP EIR did not identify the project site as part of the approximately 745 acres for anticipated conversion from agricultural uses to non-agricultural uses. The University desires to develop the project site at this time but seeks to maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to designate the 70-acre project site for development and re-designate 71.1 acres of other campus land from a designation for future development to a land use designation for on-going agricultural uses.

To amend the LRDP, the campus would change the designation on the project site from *Teaching and Research Fields* to *Support*. Land surrounding the project site would be continue as agricultural land and the project development would not interfere with future farming of these surrounding lands. On the surrounding lands, equipment access, water supply, and parcel sizes after project development would remain adequate for continued farming operations.

In the South Campus, as shown in Figure 4, the campus would re-designate 61.2 acres of land currently shown as *Support* and *Academic* and *Administrative* to *Teaching and Research Fields*. In the West Campus, 9.9 acres would be designated as *Teaching and Research Fields* rather than the existing designations of *Support* and *Academic and Administrative*. In total, the project site would be 70 acres designated as *Support* and 71.1 acres of South Campus and West Campus land would be designated as *Teaching and Research Fields*. With the amended land uses, the proposed project would be consistent with the 2003 LRDP for both the land uses at the solar project site and with the overall amount of 745 acres of land anticipated for agricultural land conversion to developed uses.

The 2003 LRDP indicates that the *Teaching and Research Fields* land use designation provides for uses related to teaching, research and support of academic programs primarily in the plant and animal sciences. The 2003 LRDP states that *Teaching and Research Fields* are typically free from large buildings but may include agriculture-related buildings and facilities on sites smaller than two acres.

The 2003 LRDP indicates that the *Support* land use designation provides for uses related to support services and facilities required to serve the campus on a daily basis. The designation includes unique land uses such as the University Airport. The 2003 LRDP states that UC Davis maintains and operates many of its own physical support service systems independent of local jurisdictions. This assigns the campus a higher degree of control over the operation of these systems, and places UC Davis more firmly in an environmental systems management role than many other UC campuses. Facilities in other UC Davis areas designated for *Support* include the campus landfill, operations and maintenance areas, heating and cooling facilities, the electrical substation, water and wastewater facilities, and fleet services.

### **4.3 2003 LRDP POPULATION PROJECTIONS**

The 2003 LRDP projects that, through 2015-16, the on-campus population will increase to include approximately 30,000 students, 14,500 faculty and staff, and 3,240 non-UC employees<sup>1</sup>. In addition, the total number of household members associated with students and employees living in on-campus housing is expected to increase to approximately 29,803. The fall 2010 on-campus faculty and staff headcount was approximately 11,400, and the 2010-11 three-quarter average on-campus student population was approximately 28,968 (UC Davis ORMP 2011). The proposed project, would introduce no new students and no new members of the faculty and staff population, and accordingly, would not increase the campus population to a level that would approach that projected for 2015-16. Therefore, the proposed project is within the 2003 LRDP's on-campus population projections.

### **4.4 2003 LRDP OBJECTIVES**

The primary objective of the 2003 LRDP is to plan for the Davis campus' share of the University of California's short- and long- term enrollment demands. In addition, the 2003 LRDP aims to:

- create a physical framework to support the teaching, research, and public service mission of the campus;

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<sup>1</sup> The on-campus population includes students and employees on the UC Davis main campus and at other University owned and operated facilities in the City of Davis. The campus population is determined based on headcount, a method of counting faculty, staff, and students in which each person is counted as one unit regardless of whether he or she is employed or studying full-time or part-time. Student population figures represent student headcount averaged over the primary three academic quarters (i.e., fall, winter, spring).

- manage campus lands and resources in a spirit of stewardship for the future; and
- provide an environment that enriches campus life and serves the greater community.

The proposed project would support these main 2003 LRDP objectives by contributing to the objective of managing resources in a spirit of stewardship for the future. Through generation of on-site electrical power the project would help the campus meet objectives for decreasing greenhouse gas emissions.

#### **4.5 2003 LRDP EIR CUMULATIVE IMPACTS ANALYSES**

In addition to evaluating the environmental effects directly associated with projected campus development, the 2003 LRDP EIR evaluates the cumulative effects of campus development combined with off-campus development through 2015-16. The cumulative context considered in the 2003 LRDP EIR varies, depending on the nature of the issue being studied, to best assess each issue's geographic extent. For example, the cumulative impacts on water and air quality can be best analyzed within the boundaries of the affected resources, such as water bodies and air basins. For other cumulative impacts, such as hazard risks, traffic, and the need for new public service facilities, the cumulative impact is best analyzed within the context of the population growth and associated development that are expected to occur in the region.

As discussed in Sections 4.1 through 4.4 above, the proposed project is within the scope of campus development projected in the 2003 LRDP EIR. In addition, the campus is unaware of any changes to local growth plans or other changes in the region since certification of the 2003 LRDP EIR that would substantially change the document's conclusions regarding cumulative impacts. Therefore, the proposed project would incrementally contribute to, but would not exceed, the cumulative impacts analyses included in the 2003 LRDP EIR.

## 5 ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The environmental resources, if checked below, would be potentially affected by this project and would involve at least one impact that is a significant or potentially significant impact that has not been previously addressed in the 2003 LRDP EIR and cannot be reduced to a less-than-significant level as indicated by the checklist on the following pages.

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aesthetics                    | <input type="checkbox"/> Agricultural Resources             | <input type="checkbox"/> Air Quality                           |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology, Soils & Seismicity           |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology & Water Quality          | <input type="checkbox"/> Land Use & Planning                   |
| <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population & Housing                  |
| <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation, Circulation & Parking |
| <input type="checkbox"/> Utilities/Service Systems     | <input type="checkbox"/> Mandatory Findings of Significance |  |

As indicated in the checklist above and based on the analysis presented in this Initial Study, it has been determined that for all resource areas, the proposed project would not result in any significant impacts that cannot be mitigated to a less-than-significant level or are not adequately addressed by the 2003 LRDP EIR. This Initial Study has concluded that the project would incrementally contribute to, but would not exceed, certain significant cumulative impacts previously identified in the 2003 LRDP EIR, and that for such impacts, no new mitigation measures, other than those previously identified in the 2003 LRDP EIR have been identified to further reduce the impact. The proposed project would not require project-specific mitigation measures.

## 6 DETERMINATION

On the basis of this initial evaluation:

- The proposed project **COULD NOT** have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and no new mitigation measures, other than those previously identified in the 2003 LRDP EIR, are required. A **NEGATIVE DECLARATION** will be prepared. The draft Negative Declaration is included in Appendix A.
- The proposed project **COULD** have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effect to a less-than-significant level. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- The proposed project **MAY** have a potentially significant effect on the environment that was not previously addressed in the 2003 LRDP EIR. A **TIERED ENVIRONMENTAL IMPACT REPORT** will be prepared to address new impacts not previously identified in the 2003 LRDP EIR.

  
\_\_\_\_\_  
Sid England

Assistant Vice Chancellor – Environmental Stewardship and Sustainability

  
\_\_\_\_\_  
Date

## 7 EVALUATION OF ENVIRONMENTAL IMPACTS

### Introduction

The University has defined the column headings in the Initial Study as follows:

- Potentially Significant Impact: This column is checked if there is substantial evidence that the project's effect may be significant. If the project may result in one or more Potentially Significant Impacts, an EIR is required.
- Less than Significant with Project-level Mitigation Incorporated: This column is checked where incorporation of project-specific mitigation measures will reduce an effect from "Potentially Significant Impact" to "Less than Significant Impact." All project-level mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less than significant level.
- Project Impact Addressed in the 2003 LRDP EIR: This column is checked where the potential impacts of the proposed project were adequately addressed in the 2003 LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross references (including section/page numbers) the relevant analysis in the LRDP EIR.
- Less than Significant Impact: This column is checked when the project will not result in any significant effects. The effects may or may not have been discussed in the LRDP EIR. The project impact is less-than-significant without incorporation of LRDP or project-level mitigation.
- No Impact: This column is checked when a project would not result in any impact in the category or the category does not apply. "No impact" answers need to be adequately supported by the information sources cited or should note that the impact does not apply to projects like the one involved (e.g., the project outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on project specific screening analysis.)



## **7.1 AESTHETICS**

### **7.1.1 Background**

Section 4.1 of the 2003 LRDP EIR addresses the aesthetics effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.1 of the 2003 LRDP EIR.

#### **Campus**

The campus is surrounded by extensive agricultural uses to the west and south, and by residential, institutional, and commercial land uses in the City of Davis to the north and east. Views within the Davis area are generally of two types: open views of agricultural land and supporting facilities with views of hills to the west, and views of developed areas within UC Davis and the City of Davis.

UC Davis consists of four general land units that have distinct visual characters. The central campus is the most developed area of campus and is characterized by varied architectural styles, large trees, and formal landscaping. The west and south campus units and Russell Ranch primarily include teaching and research fields with agricultural buildings (although the west and south campus units also include more developed areas including campus support facilities and academic and administrative facilities).

The 2003 LRDP identifies the following as valued visual elements of the central campus: the large, open lawn of the Quad at the heart of the campus; the framework of tree-lined streets, particularly around the Quad where the street tree branches arch to create a canopy overhead; the Arboretum, with its large trees and variety of landscapes along the waterway; the shingle-sided buildings from the founding years of the University Farm; buildings from the second era of campus development such as Hart Hall and Walker Hall; green open spaces that face the community along Russell Boulevard and A Street; bicycles as a distinct and valued visual emblem on campus; and the South Entry area, including the new entrance quad and the Robert and Margrit Mondavi Center for the Performing Arts.

Design review of campus development projects takes place during the project planning, design, review, and approval processes to sustain valued elements of the campus’ visual environment, to assure new projects contribute to a connected and cohesive campus environment, and to otherwise minimize adverse aesthetics effects as feasible. Formal design review by the campus Design Review Committee takes place for every major capital project. This Committee includes standing members from the Offices of Resource Management and Planning, Architects and Engineers, Grounds, and other departments concerned with potential aesthetic effects, as well as program representatives and invited design professionals with expertise relevant to the project type. Campus design standards and plans that provide the basis for design review include the 2003 LRDP, the Campus Standards and Design Guide manual, the campus Architectural Design Guidelines, and the Campus Core Study.

#### **Project Site**

The proposed project would develop approximately 70 acres of land on the South Campus with the installation of rows of solar panels mounted on stanchions approximately one to five feet in height and inclined toward the south. The rows would include sufficient space to permit access for maintenance. A chainlink fence approximately 6 feet in height would surround the 70 acres and nighttime lighting would be included at the entrance gate. The site is currently a flat agricultural field with no trees and no structures.

### 7.1.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an aesthetic impact significant if growth under the 2003 LRDP would:

- Have a substantial adverse effect on a scenic vista.  
A scenic vista is defined as a publicly accessible viewpoint that provides expansive views of a highly valued landscape. On campus, the open view across agricultural lands west to the Coast Range is considered a scenic vista. This vista is primarily viewed from public viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard.
- Substantially degrade the existing visual character or quality of the site and its surroundings.  
For the campus, this standard is interpreted in terms of the effect of development under the 2003 LRDP on the valued elements of the visual landscape identified in the LRDP, or the effect associated with allowing incompatible development in or near areas with high visual quality such as Putah Creek and the Arboretum Waterway.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

An additional standard from the CEQA Guidelines’ Environmental Checklist (“b” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.1.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on aesthetics are evaluated in Section 4.1 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant aesthetics impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. A mitigation measure is relevant to reduce the magnitude of cumulative impact 4.1-5, but this impact is identified as significant and unavoidable because the feasibility and/or implementation of mitigation falls within other jurisdictions and therefore cannot be guaranteed by the University of California.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>AESTHETICS</b>			
4.1-2	Development on campus from implementation of the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the visual landscape identified in the 2003 LRDP.	PS	LS
4.1-5	Development allowed under the 2003 LRDP, in conjunction with other development in the region, could substantially degrade the existing visual character or quality in the region.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial

Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

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**2003 LRDP EIR Mitigation Measures**

**AESTHETICS**

- 
- 4.1-2(a) New structures, roads, and landscaping at UC Davis shall be designed to be compatible with the visual elements and policies identified in the 2003 LRDP.
  - 4.1-2(b) Prior to design approval of development projects under the 2003 LRDP, the Campus Design Review Committee must determine that project designs are consistent with the valued elements of the visual landscape identified in the 2003 LRDP, applicable planning guidelines, and the character of surrounding development so that the visual character and quality of the project area are not substantially degraded.
  - 4.1-5(a) Implement LRDP Mitigation 4.1-2(a) and (b).
  - 4.1-5(b) The cities of Davis, Woodland, Winters, and Dixon and Yolo and Solano counties can and should implement policies in their plans that address the protection of scenic resources and maintenance of visual quality.
- 

**7.1.4 Environmental Checklist and Discussion**

<b>AESTHETICS</b>	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) The 2003 LRDP EIR defined a scenic vista as an expansive view of a highly valued landscape from a publicly accessible viewpoint, and identified the only scenic vista on the UC Davis campus to be the view west across agricultural land to the Coast Range. The proposed project is south of the campus among agricultural fields with no view points to the Coast Range. The project would not disrupt views to the Coast Range and would not have effect on scenic vistas. No impact would occur.
- b) The campus is not located near a state scenic highway. The project would not be visible from a state scenic highway. No impact would occur.
- c) The 2003 LRDP EIR found that development on campus under the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the campus' visual

landscape, which are identified above in the background discussion and include specific treed areas, historic buildings, and open space areas (Impact 4.1-2). In compliance with LRDP Mitigation 4.1-2(a), the proposed project would be designed to be compatible with the visual elements and policies identified in the 2003 LRDP by placing the proposed solar plant away from Old Davis Road and ensuring that the solar panels are mounted close to the ground so as to not disrupt long range views of the horizon. In compliance with LRDP Mitigation 4.1-2(b), the campus Design Review Committee would review the project design for consistency with the valued elements of the campus' visual landscape, applicable planning guidelines, and the character of surrounding development. With implementation of these measures, which are relevant to the project, the project's potential impact on scenic resources and visual character would be less than significant.

The 2003 LRDP EIR found that development on campus under the 2003 LRDP could degrade the visual character of the campus by substantially degrading the valued elements of the campus' visual landscape (LRDP EIR Section 4.1), which are identified above in the background discussion and include specific treed areas, historic buildings, and open space areas. The proposed project would not affect the valued elements of the campus' visual landscape but would modify the existing visual character of the project site through the installation of solar power panels. In addition, the project would add overhead electrical lines between the project site and the campus electrical substation approximately ½ mile to the north. The LRDP planned for agricultural uses (including the possibility of small agriculturally-related buildings on the project site) and did not plan for solar panels on the site. The proposed project would alter the proposed development plan by not installing an agriculture-related use. The change from an agricultural use to a developed use would take place in an area that is not readily viewable from public access points and would not protrude over the tree line established by the developed facilities west of the project site and the tree line within Putah Creek.

At the site, the change to the visual character from the existing agricultural field to a developed site for solar power panels would not be highly visible from public viewpoints and the development with solar panels would not be expected to degrade the visual character of the area. Impressions of visual character impacts are variable among individual viewers. For this project, some viewers might consider the placement of solar panels to represent an intrusion on the rural character of an area. Other viewers might consider the solar panels as contributing to the visual character of the site within the context of proximity to UC Davis and the emerging technical efforts to reduce greenhouse gas emissions. While these differences in opinion could exist in relation to the proposed project, the lack of visibility from public viewpoints would minimize adverse reactions from potential viewers. The new electrical power lines would be visible from off-site areas and would appear as traditional overhead power lines similar to other overhead power lines in the project area that connect rural farm buildings and water pumps with the electrical grid. In the project area, these overhead power lines are common and the new addition of power lines would be consistent with the existing visual character of the rural areas within 1 to 2 miles of the project site. The changes to the visual character would not substantially alter the visual character of the project area. The potential impacts would be less than significant.

The 2003 LRDP EIR found that development under the 2003 LRDP together with other development in the region could substantially degrade the existing visual character or quality of the region (Impact 4.1-5). LRDP Mitigation 4.1-5(a), included in the proposed project, requires the campus to implement Mitigation Measure 4.1-2(a-b), discussed above. LRDP Mitigation 4.1-5(b) indicates that local jurisdictions can and should implement policies that protect scenic resources and visual quality. However, the feasibility and/or implementation of LRDP Mitigation 4.1-5(b) cannot be guaranteed by the University of California because enforcement and monitoring fall within other jurisdictions. For this reason, the impact is considered significant and unavoidable. This impact was adequately

analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- d) The proposed project would not include lighting across the site, and the majority of the project would be dark during nighttime hours. At the entrance gate, small security lighting would illuminate the area immediately surrounding the gate and would include motion detectors so that the lights are only illuminated when movement is detected. This minor amount of lighting at the site would be consistent with the rural character of the surrounding area and would not create a substantial amount of lighting. Glare at the project site could potentially be produced reflection from the solar panels. While the panels are designed to absorb the light energy of sunlight and not reflect glare, certain angles could produce glare towards the sky that would not be noticeable from the ground. During typical operation, the panels will become coated with dust from the surrounding area further reducing the overall amount of glare directed toward the sky. After periodic maintenance (1-4 times per year), to clean the dusty panels, the skyward glare would be temporarily increased. With the low amount of expected glare, the angle toward the sky, and the regular coating of dust on the panel surfaces, the amount of glare is not expected to be substantial. The potential impact from light and glare would be less than significant.

## **7.2 AGRICULTURAL RESOURCES**

### **7.2.1 Background**

Section 4.2 of the 2003 LRDP EIR addresses the agricultural resources effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.2 of the 2003 LRDP EIR.

#### **Campus**

As discussed in the 2003 LRDP EIR, of the approximately 5,300 acres of campus land, the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP) designates approximately 3,700 acres as Prime Farmland and approximately 90 acres as Farmland of Local Importance. The FMMP designates the remaining 1,520 acres of campus land as Urban and Built-Up (approximately 1,400 acres) and Other Land (approximately 120 acres). Most of the campus’ agricultural lands are located on the west and south campuses and at Russell Ranch. The central campus includes land primarily designated as Urban and Built-Up, but small areas within the central campus that are used for teaching and research fields and community gardens are designated as Prime Farmland.

The 2003 LRDP EIR identifies that development under the 2003 LRDP through 2015-16 could result in conversion of approximately 745 acres of campus land that is considered prime farmland by the California Department of Conservation to nonagricultural uses. Approximately 330 acres of this land would be converted to habitat at Russell Ranch, which would not result in an irreversible loss of prime soil. Mitigation under the 2003 LRDP EIR requires the conservation of prime farmland at a one-to-one (1:1) ratio for prime farmland converted to developed uses and a one-third-to-one (1/3:1) ratio for prime farmland converted to habitat at Russell Ranch.

#### **Project Site**

The proposed project site is designated as Prime Farmland and is currently used for agricultural production. The property is owned by the University and leased to a farmer.

### **7.2.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers an agricultural impact significant if growth under the 2003 LRDP would:

- Convert prime farmland, unique farmland or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to nonagricultural use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland considered prime, unique, or of statewide importance to nonagricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.

### **7.2.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP through 2015-16 on agricultural resources are evaluated in Section 4.2 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Significant agricultural impacts identified in the

2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are relevant to reduce the magnitude of project-level impact 4.2-1 and cumulative impact 4.2-3, but these impacts are identified as significant and unavoidable because they are considered irreversible. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they will not be readopted. The benefits of these mitigation measures will be achieved independently of considering them specific mitigation measures of this project. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>AGRICULTURAL RESOURCES</b>			
4.2-1	Growth under the 2003 LRDP would convert approximately 745 acres of prime farmland (as defined by the State Farmland Mapping and Monitoring Program) on campus to nonagricultural uses.	S	SU
4.2-3	Cumulative development would result in the conversion of prime farmland, unique farmland, and/or farmland of statewide importance to nonagricultural use.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

<b>2003 LRDP EIR Mitigation Measures</b>	
<b>AGRICULTURAL RESOURCES</b>	
4.2-1	Prior to conversion of prime farmland to nonagricultural uses under the 2003 LRDP, the campus shall preserve approximately 525 acres of prime farmland either at the Russell Ranch, within the area designated for Teaching and Research Fields, or on the Kidwell and McConeghy parcels for agricultural purposes (including agricultural teaching and research). The campus will preserve prime farmland at a one-to-one (1:1) mitigation ratio for prime farmland converted to developed uses and a one-third-to-one (1/3:1) ratio for prime farmland converted to habitat at Russell Ranch.
4.2-3	Implement LRDP Mitigation 4.2-1.

## 7.2.4 Environmental Checklist and Discussion

AGRICULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The project would convert up to 70 acres of Prime Farmland from agricultural production to electrical power production. The 2003 LRDP EIR identified that campus development could result in conversion of approximately 745 acres of campus land that is considered prime farmland to nonagricultural uses. LRDP Mitigation 4.2-1 under the 2003 LRDP EIR requires the conservation of prime farmland at a one-to-one (1:1) ratio for prime farmland converted to developed uses. The campus has designated areas of the Russell Ranch for on-going agricultural operations in accordance with LRDP Mitigation 4.2-1. The 2003 LRDP EIR found that the designation of land for preservation does not replace the loss of agricultural land and this impact, even with mitigation remains significant and unavoidable.

The proposed project site was not designated for development in the 2003 LRDP EIR. Consequently, the LRDP EIR did not identify the project site as part of the approximately 745 acres for anticipated conversion from agricultural uses to non-agricultural uses. The University intends to develop the project site at this time but also to maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to designate the project site for development and re-designate other campus land from a designation for future development to a land use designation for on-going agricultural uses. The details of this amendment process to the LRDP are contained in Section 7.9, Land Use and Planning, below.

- b) Campus lands are state lands and are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and no impact would occur.
- c) Beyond the land conversion identified above in item (a), the proposed project would not produce other changes to agricultural operations or land development that would result in further conversion of Farmland to non-agricultural use. No impact would occur.



## **7.3 AIR QUALITY**

### **7.3.1 Background**

Section 4.3 of the 2003 LRDP EIR addresses the air quality effects of campus growth under the 2003 LRDP on air quality. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.3 of the 2003 LRDP EIR.

#### **Campus**

The campus is subject to air quality regulation programs under both the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Both the federal and state statutes provide for ambient air quality standards to protect public health, timetables for progressing toward achieving and maintaining ambient standards, and the development of plans to guide the air quality improvement efforts of state and local agencies. Within the campus vicinity, air quality is monitored, evaluated, and controlled by the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD is one of five air districts located in the Sacramento Valley Air Basin (SVAB) and has jurisdiction over air quality in the Yolo County and the northeastern portion of Solano County.

Historically, air quality laws and regulations have divided air pollutants into two broad categories: “criteria pollutants” and “toxic air contaminants.” Federal and state air quality standards have been established for the following ambient air pollutants, the criteria pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), lead (Pb), and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). Ozone is evaluated by assessing emissions of its precursors: reactive organic gases (ROG) and NO<sub>x</sub>.

Toxic air contaminants (TACs) are airborne pollutants for which there are no air quality standards but which are known to have adverse human health effects. TACs are regulated under federal and state statutes, primarily with control technology requirements for stationary and mobile sources and mitigation established following human health risk assessments. TAC’s are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas.

Air quality on campus on any given day is influenced by both meteorological conditions and pollutant emissions. In general, meteorological conditions vary more than pollutant emissions from day to day, and tend to have a greater influence on changes in measured ambient pollutant concentrations. Ambient concentrations of CO and PM<sub>10</sub>, however are particularly influenced by local emission sources. The EPA has classified the entire SVAB, which includes the campus, as a serious nonattainment area for O<sub>3</sub>. Districts in the SVAB have requested a voluntary bump-up designation to “severe,” which would result in an attainment deadline of 2018. The EPA approval of the voluntary bump-up is still pending. The CARB has also designated the area as being in nonattainment under the state ambient air quality standards for O<sub>3</sub> and PM<sub>10</sub>. The designation of an area as attainment or nonattainment is based on monitored data throughout the SVAB.

#### **Project Site**

The project site is used for agricultural crop production. Air emissions from the project site currently include dust from harvesting, discing, and planting as well as criteria pollutants produced from diesel engines used on the tractors that service the 70-acre area.

### 7.3.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers an air quality impact significant if growth under the 2003 LRDP would:

#### Criteria Pollutants

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (According to the YSAQMD, emissions of NO<sub>x</sub> and ROG in excess of 10 tons per year, PM<sub>10</sub> emissions of 80 pounds a day, or CO emissions violating a state ambient air standard for CO would be considered significant.)
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

#### Toxic Air Contaminants

- Contribute to the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeding the AB 2588 and Proposition 65 threshold of 10 in one million.
- Result in a noncarcinogenic (chronic and acute) health hazard index greater than the AB 2588 threshold of 1.0.

### 7.3.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on air quality are evaluated in Section 4.3 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Significant and potentially significant air quality impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation is identified to reduce the magnitude of project-level impact 4.3-3, but this impact is identified as significant and unavoidable due to uncertainty about the effectiveness of the mitigation.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>AIR QUALITY</b>			
4.3-3	Emissions from construction activities associated with the 2003 LRDP would exceed YSAQMD thresholds.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

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## **2003 LRDP EIR Mitigation Measures**

### **AIR QUALITY**

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- 4.3-3(a) The campus shall include in all construction contracts the measures specified below to reduce fugitive dust impacts, including but not limited to the following:
- All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
  - All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
  - When demolishing buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
  - When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least two feet of freeboard space from the top of the container shall be maintained.
  - All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices also is expressly forbidden.
  - Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by utilizing sufficient water or chemical stabilizer/ suppressant.
- 4.3-3(c) The campus shall implement the following control measures to reduce emissions of ozone precursors from construction equipment exhaust:
- To the extent that equipment is available and cost effective, the campus shall encourage contractors to use alternate fuels and retrofit existing engines in construction equipment.
  - Minimize idling time to a maximum of 5 minutes when construction equipment is not in use.
  - To the extent practicable, manage operation of heavy-duty equipment to reduce emissions.
  - To the extent practicable, employ construction management techniques such as timing construction to occur outside the ozone season of May through October, or scheduling equipment use to limit unnecessary concurrent operation.
-

### 7.3.4 Environmental Checklist and Discussion

AIR QUALITY		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b,c,d) While operation of the solar panels would not produce air emissions, construction of the 70-acre development would produce emissions. The 2003 LRDP EIR found that construction activities under the 2003 LRDP could exceed YSAQMD thresholds (Impact 4.3-3). The state 24-hour PM<sub>10</sub> standards could be violated when multiple construction projects (especially those involving ongoing grading or excavation activities) occur simultaneously in the same area. In addition, exhaust pollutants would be emitted during use of construction equipment.

Although the project is not adjacent to sensitive receptors, the construction emissions for the solar project would be higher than a typical year of agricultural dust and equipment emission and the project would contribute to overall campus dust and equipment emissions. LRDP Mitigation 4.3-3(a) (requiring campus construction contracts to include measures to reduce fugitive dust impacts) and 4.4-3(c) (requiring control measures to reduce emissions of ozone precursors from construction equipment exhaust) are relevant in the proposed project. The project would contribute to these emissions but would not exceed the previously projected emissions from campus projects. Campus construction projects are expected to be minimal during the next two years and the LRDP EIR modeled construction emissions at levels higher than are expected in the foreseeable future. From 2003 through 2010, numerous major campus buildings were under construction simultaneously and construction levels for the next two years include new minor buildings but no large-scale projects.

The 2003 LRDP EIR found that the impact of the cumulative emissions from the totality of projects under construction at any given time under the 2003 LRDP would be significant and unavoidable. The impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP, and no new project-level mitigation measures have been identified that would further reduce the impact.

e) No odors would be produced by the solar panels. No impact would occur.

## **7.4 BIOLOGICAL RESOURCES**

### **7.4.1 Background**

Section 4.4 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on biological resources. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.4 of the 2003 LRDP EIR.

#### **Campus**

The 5,300-acre campus is located in a region that is composed primarily of urban areas and agricultural lands that include remnant riparian areas. Habitat types on campus can be classified as Agricultural Lands (including Cropland/Pasture, and Orchard/Vineyard), Valley Foothill Riparian Woodland, Ruderal/Annual Grassland, Open Water Ponds, Riverine, and Urban Landscaping/Developed.

The 2003 LRDP EIR considers special status species to be those taxa that are: (1) listed as threatened or endangered under either the California or Federal Endangered Species Acts; (2) candidates for either state or federal listing; (3) species afforded protection under the Fish and Game Code of California; (4) federal and California Department of Fish and Game (CDFG) “Species of Special Concern”; (5) CDFG “Species of Special Concern” highest and second priority lists; or (6) California Native Plant Society (CNPS) List 1-3 plants.

A database search identified 15 special status plant species, 8 special status invertebrates, 11 special status fish, 3 special status amphibians, 3 special status reptiles, 26 special status birds, and 7 special status mammals that have the potential to occur on or within a 10-mile radius of the campus. However, only a few of these species are known to occur on campus or have potential habitat present on campus, including: northern California black walnut, burrowing owl, Swainson’s hawk, valley elderberry longhorn beetle, California tiger salamander, chinook salmon, giant garter snake, steelhead, and northwestern pond turtle.

#### **Project Site**

The project site is a flat agricultural field currently planted with tomatoes. The project site is entirely within the planted field and includes no areas of the adjacent levee and no areas that are field edges weedy areas.

#### **Habitat**

**Agricultural Lands.** Agricultural lands comprise approximately 3,500 acres of campus lands and include two habitat/cover types. These are: (1) Cropland/Pasture habitat composed of an annual herbaceous plant species cover type, and (2) Orchard/Vineyard habitat composed of a perennial woody plant species cover type. Agricultural lands are found primarily on the west and south campus, and on the Russell Ranch. The distribution of these agricultural cover types throughout the campus varies depending on current research projects.

**Cropland/Pasture (Herbaceous Agricultural Cover Types).** Cropland is used for cultivation of annual or short lived crops. It is a dynamic landscape feature that is frequently altered throughout the year. Cropland at UC Davis includes land used for academic teaching and research and for food production for campus livestock.

Cropland provides food and cover for wildlife species such as songbirds and small rodents, and foraging opportunities for raptors due to the frequent mowing or harvesting of the fields that make the prey readily available. The State listed threatened Swainson's hawk relies heavily on Cropland for foraging. Plant species associated with Cropland habitat include cultivated crops, isolated oak trees, and non native herbs, shrubs, and trees associated with landscaped or disturbed edges along roads, irrigation ditches, and agricultural fields. These habitat elements, when present, may provide perching and nesting habitat for birds, as well as food, cover, and movement corridors for birds and other wildlife.

Pasture is used for livestock grazing and may not be leveled, regularly disked, or irrigated. Vegetation is typically a low, grassland-like ground cover. Campus pastures provide variable habitat values depending on their size and intensity of grazing. Pastures that are essentially confined animal pens may provide almost no value for native wildlife, while larger pastures with grassland-like habitat provide higher habitat values for wildlife.

### Special Status Species

Swainson's Hawk. The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under the California Endangered Species Act and is also fully protected against take pursuant to Section 3503.5 of the Fish and Game Code of California. The Swainson's hawk is a relatively large bird of prey that typically nests in large trees in riparian corridors as well as isolated trees remaining in or adjacent to agricultural fields in the Central Valley. However, in the City of Davis, and on the central campus, these hawks also nest in the large trees among buildings, roads, and dwellings.

This species forages in open grassland habitats and has adjusted to foraging in certain types of agricultural lands. The value of foraging habitat can be affected by a variety of characteristics, including density and availability of prey, proximity to disturbing features, and distance to nesting territories. Published information indicates these raptors typically forage within a 10 mile radius of nest sites but may range up to 18 miles from a nest site in search of suitable foraging habitat and available prey. Formal studies have shown that Swainson's hawks will spend the majority of foraging time in close proximity to the nest site when high quality foraging habitat (measured by the abundance and availability of prey) is present.

The occurrence of the Swainson's hawk in and around the campus is well documented. UC Davis conducted yearly surveys for Swainson's hawk nests on the campus and within one half mile of the campus from 1991 through 1998. Project-specific surveys have been conducted annually since 1998. The results of these surveys documented approximately 20 active nests per year and a total of approximately 50 total nests within one-half mile of the campus over the decade. Most of the Swainson's hawk nests are located in the Putah Creek riparian corridor.

### Trees

The project site contains no trees.

#### **7.4.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers a biological resources impact significant if growth under the 2003 LRDP would:

- Result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans,

policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS).

- Result in the “take” (defined as kill, harm, or harass) of any listed threatened or endangered species or the habitat of such species.
- Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS.
- Result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, or coastal wetland) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish, or wildlife species or with established native, resident, or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any applicable local policies protecting biological resources such as a tree protection policy or ordinance.

An additional standard from the CEQA Guidelines’ Environmental Checklist (“f” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.4.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on biological resources are evaluated in Section 4.4 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and the significant and potentially significant biological resources impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are included to reduce the magnitude of cumulative impact 4.4-12 but this impact is identified as significant and unavoidable because the feasibility and/or implementation of mitigation falls within other jurisdictions and therefore cannot be guaranteed by the University of California.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>BIOLOGICAL RESOURCES</b>			
4.4-2	Development allowed under the 2003 LRDP would result in the conversion of approximately 550 acres of Agricultural Land and Ruderal/Annual Grassland habitat to campus-related development which would result in the loss of general wildlife habitat for resident and migratory species, including foraging habitat for the Swainson’s hawk.	PS	LS
4.4-12	Development allowed under the 2003 LRDP would contribute 550 acres to the cumulative loss in the region of over 1,500 acres of Agricultural Land and Ruderal/Annual Grassland habitat for resident and migratory wildlife species including Swainson’s hawks and burrowing owls.	S	SU
4.4-4	Development allowed under the 2003 LRDP could result in the failure of nesting efforts by nesting raptors, including Swainson’s hawks or other birds of prey.	PS	LS
4.4-5	Development allowed under the 2003 LRDP would result in the loss of active nest sites for Swainson’s hawk.	PS	LS

**2003 LRDP EIR Impacts**  
**BIOLOGICAL RESOURCES**

Level of Significance Prior to Mitigation	Level of Significance After Mitigation
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Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**  
**BIOLOGICAL RESOURCES**

- 4.4-2      The campus shall mitigate the loss of foraging habitat due to development through the establishment of 650 acres of mitigation lands located within or near the Putah Creek Riparian Reserve. Approximately 370 acres of this area shall be converted from existing agricultural uses to restored Valley-Foothill Riparian Woodland and Valley Grassland at Russell Ranch. An additional 280 acres of agricultural land will be protected with a habitat and farmland conservation mechanism either at the Russell Ranch or the Kidwell and McConeghy parcels. These grassland and agricultural lands would be available as foraging habitat for Swainson’s hawk and other special-status species such as prairie falcon, golden eagle, wintering or migrating birds and birds of prey that may occasionally forage on campus lands. Restored Valley-Foothill Riparian Habitat would be available as nesting habitat for Swainson’s hawk and other birds of prey.  
  
An additional 15-acre mitigation area shall be established along the North Fork Cutoff. This area shall be restored as an oak-grassland and would be a nesting and foraging site for Swainson’s hawk and other birds of prey.
- 4.4-12      Implementation of LRDP Mitigations 4.4-1(a), (b), and (c); 4.4-2(a) and (b); 4.4-3(a) and (b); and 4.4-7(a) in combination with the Yolo County NCCP and Solano County HCP, including compliance with the regulatory and permitting requirements imposed by the USFWS and the CDFG.
- 4.4-4(a)      The campus shall conduct a pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). Additionally, the campus shall conduct surveys within a ½-mile radius of the site to determine the presence or absence of any nesting Swainson’s hawks. The surveys shall be conducted by a qualified biologist during the same calendar year that the proposed activity is planned to begin to determine if any nesting birds-of-prey would be affected. If phased construction procedures are planned for the proposed activity, the results of the above survey shall be valid only for the season when it is conducted.  
  
If any Swainson’s hawks are nesting within a one-half-mile radius of the project site or if other raptors are nesting in, on or adjacent to the project site, a qualified biologist shall determine the potential for disturbance to nesting raptors, including Swainson’s hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances. If feasible project changes are not readily identifiable, the campus will consult with CDFG to determine what actions should be taken to protect the nesting efforts. If, after five years, a previously recorded nest site remains unoccupied by a Swainson’s hawk, it will no longer be considered as a Swainson’s hawk nest site subject to this mitigation.
- 4.4-4(b)      The campus shall continue to conduct annual surveys to determine the location of nesting Swainson’s hawks and other birds of prey on the campus outside the Putah Creek corridor. If nesting Swainson’s hawks are found during the survey at a previously unknown location within one-half mile of a project site and/or at a location closer to the project or more visually exposed to the project site than a nearby previously documented site, a qualified biologist shall, prior to project construction, determine the potential for disturbance to nesting Swainson’s hawks. If the biologist determines that there is a significant potential for disturbance, the campus shall implement feasible changes in the construction schedule or make other appropriate adjustments to the project in response to the specific circumstances (e.g. relocating noisy equipment or creating temporary sound barriers).  
  
The implementation of LRDP Mitigations 4.4-4(a) and (b) shall be conducted under the supervision of a biologist whose qualifications include:



**2003 LRDP EIR Mitigation Measures**  
**BIOLOGICAL RESOURCES**

- A bachelor’s degree in biology or a related field;
- Two years of field experience related to nesting raptors; and
- Prior construction monitoring experience.

Further:

- All decisions of the qualified biologist shall be made in consultation with the California Department of Fish and Game;
- Monitoring shall be conducted for a sufficient time (minimum of 3 consecutive days following the initiation of construction) to verify that the nesting pair does not exhibit significant adverse reaction to construction activities (i.e., changes in behavioral patterns, reactions to construction noise, etc.); and
- Nest site monitoring will continue for a minimum of once a week through the nesting cycle at that nest.

4.4-5 Mitigation 4.4-4(a) and (b) will be implemented, including pre-construction survey of trees on and adjacent to a project site during the raptor breeding season (approximately March 1 to August 31). If a Swainson’s hawk nest tree is present, the tree will be removed outside the nesting season (March-May).

**7.4.4 Environmental Checklist and Discussion**

**BIOLOGICAL RESOURCES**

Would the project...	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?
- 

a) **Plants**

The 2003 LRDP EIR found that development under the 2003 LRDP could result in the loss of special-status plant species (LRDP Impact 4.4-1). The project is a agricultural field that is regularly cleared for planting and contains no special status plants.

**Wildlife**

Swainson’s Hawk: The project site is an agricultural field that provides foraging habitat for Swainson’s Hawks. The 2003 LRDP EIR identified LRDP Mitigation 4.4-2 to compensate for the loss of Swainson’s Hawk foraging habitat. LRDP Mitigation 4.4-2 is applicable to the project and the project will contribute to the on-going efforts to establish and maintain reserve lands at the Russell Ranch that provide foraging habitat and are not subject to future development. Implementation of the LRDP Mitigation 4.4-2 combined with the land use amendment to the LRDP, would reduce the potential impact to a less-than-significant level.

Swainson’s hawks could possibly nest in trees adjacent to the site. Since the early 1990s, Swainson’s hawks have nested within ¼ of the project site in trees along Putah Creek. However, it is possible they could nest in the area before construction starts. Implementation of LRDP Mitigation Measures 4.4-4(a)-(b) and 4.4-5 requires actions to ensure that active nests are not disturbed. Implementation of LRDP Mitigation Measures 4.4-4(a)-(b) and 4.4-5 would reduce potential impacts to nesting Swainson’s Hawks to a less-than-significant level by requiring pre-construction surveys and ensuring that nesting is not disrupted. No additional impacts would occur to special status species because no other special status species are present on the site or surrounding area.

- b,c) The proposed project would have no effects on riparian and wetland areas. The project site is not connected to riparian or wetland areas and no activities would take place in riparian or wetland areas. No impact would occur.
- d) The Putah Creek corridor, which is the southern boundary of the campus, is the principal corridor for the movement of native resident and migratory fish and wildlife through the UC Davis campus. It is the regional connection between the hills in western Yolo County and the Sacramento River. The project is approximately 100 feet south of the Putah Creek corridor. The corridor would remain unaffected by the proposed project. Therefore, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No impact would occur.
- e) The project site contains no trees and no trees will be removed as part of the project. No impact would occur.
- f) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The campus has implemented two low effects HCPs for Valley Elderberry Longhorn Beetle at Russell Ranch. The project is not located at Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP.

## **7.5 CULTURAL RESOURCES**

### **7.5.1 Background**

Section 4.5 of the 2003 LRDP EIR addresses the effects of campus growth under the 2003 LRDP on cultural resources. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.5 of the 2003 LRDP EIR.

#### **Campus**

Cultural resources on campus include prehistoric and historic resources. Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally dating prior to contact with people of European descent. Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region.

#### Archaeological Resources

The campus lies in the ethnographic territory of the Patwin. Since 1991, extensive archaeological investigations (survey, testing, monitoring, and/or excavation) have been conducted on campus in conjunction with the development of campus projects (Nadolski 2003). Patwin sites, including burials, have been identified at several locations on the central campus. Areas within 800 feet of the banks of the historic channel of Putah Creek and its tributaries and slough channels, and within 800 feet of specific known archaeological sites, have been identified as archaeologically sensitive zones on campus.

#### Historic Resources

The earliest direct historic contacts in the Davis area probably occurred during 1806 to 1808. Farming on a large scale began in the Davis area in the 1850s. A “university farm” was established at Davis in 1906, classes began in 1909, and Davis became a general University of California campus in 1959. No properties within the campus are listed on the National Register of Historic Places. Six properties on or near the campus have been recorded with the California Inventory of Historic Resources. Historic architectural features typically must be at least 50 years of age to be considered for listing on the California Register of Historical Resources (CRHR).

#### **Project Site**

The project site is away from the historic channel of Putah Creek and approximately 1 mile from the campus archaeological sensitive zones.

### **7.5.2 2003 LRDP EIR Standards of Significance**

In addition to the following archaeological and historical standards of significance identified in the 2003 LRDP EIR, an additional standard from the CEQA Guidelines’ Environmental Checklist (“c” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

#### **Archaeological Resources**

The 2003 LRDP EIR considers an impact on archaeological resources significant if growth under the 2003 LRDP would:

- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guideline § 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

A “unique archaeological resource” is defined under CEQA through Public Resources Code Section 21083.2(g). A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions and there is a demonstrable public interest in that information, or
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type, or
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

For a resource to qualify as a unique archaeological resource, the agency must determine that there is a high probability that the resource meets one of these criteria without merely adding to the current body of knowledge (PRC § 21083.2(g)). An archaeological artifact, object, or site that does not meet the above criteria is a nonunique archaeological resource (PRC § 21083.2(h)). An impact on a nonunique resource is not a significant environmental impact under CEQA (CEQA Guidelines § 15064.5(c)(4)). If an archaeological resource qualifies as a historical resource under CRHR or other criteria, then the resource is treated as a historical resource for the purposes of CEQA (CEQA Guidelines § 15064.5(c)(2)).

Section 15064.5 of the CEQA Guidelines assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC § 5097.98. California Health and Safety Code § 7050.5(b) prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC § 5097 procedures.

## **Historical Resources**

For the purposes of this EIR, as mandated by PRC § 21083.2, impacts of the proposed project on an historical resource would be considered significant if it would:

- cause a significant adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5.

The standards of significance for historical resources are based on Appendix G and § 15064.5 of the CEQA Guidelines. Accordingly, historical resources include resources listed in, or determined to be eligible for listing in, the CRHR; resources included in a qualifying local register (such as the City of Davis Register of Historic Resources); and resources that the lead agency determines to meet the criteria for listing in the CRHR. These criteria may apply to any historic built environmental feature, and to historic or prehistoric archaeological sites. Properties or sites that are eligible for inclusion in the CRHR are termed “historical resources.” Under the provisions of CEQA Guidelines § 15064.5(a)(3), generally a lead agency should find that a property is historically significant if it determines that the property meets one or more of the criteria for listing on the CRHR, which extend to any building, structure, feature or site that:

- is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- is associated with lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history

With few exceptions, to qualify as a historical resource a property must be at least 50 years old and also must retain physical integrity and integrity to its period of significance. For historic structures and buildings, significantly altering the setting, remodeling, or moving the structure may diminish or destroy its integrity. However, under some conditions, a building that has been moved or altered may still retain its historic significance. Landscaping or landscape features may in some cases contribute to the significance of an historic architectural property. Such elements would be assessed as part of the evaluation of the related historic architectural property. Archaeological sites may also qualify as historical resources under CEQA Guideline Section 15064.5(a)(3). Archaeological sites most often are assessed relative to CRHR Criterion D (for potential to yield data important to history or prehistory). An archaeological deposit that has been extensively disturbed and archaeological artifacts found in isolation may not be eligible for listing on the CRHR, because the lack of stratigraphic context may reduce the potential for the resource to yield significant data. A resource that does not meet one of the criteria for eligibility to the CRHR is not a historical resource under CEQA, and impacts to such a property are not significant.

### 7.5.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on cultural resources are evaluated in Section 4.5 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant cultural resources impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. Mitigation measures are included to reduce the magnitude of project-level impact 4.5-3 and cumulative impact 4.5-5, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>CULTURAL RESOURCES</b>			
4.5-1	Implementation of the 2003 LRDP could damage or destroy an archaeological resource or historic building or structure as the result of grading, excavation, ground disturbance or other project development.	PS	LS
4.5-2	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA guidelines 15064.5, as the result of ground disturbance, alteration, removal or demolition associated with project development.	PS	LS
4.5-3	Implementation of the LRDP could cause a substantial adverse change in the significance of a historical resource or unique archaeological resource, as defined in CEQA guidelines 15064.5, and the values that contribute to the significance of the resource cannot be preserved through documentation and data recovery.	S	SU

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>CULTURAL RESOURCES</b>			
4.5-4	Implementation of the 2003 LRDP could disturb human remains, including those interred outside of formal cemeteries.	PS	LS
4.5-5	Development under the 2003 LRDP would contribute to cumulative damage to and loss of the resource base of unique archaeological resources and historical resources (including archaeological sites and historic buildings and structures) in Yolo and Solano counties.	S	SU

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

### **2003 LRDP EIR Mitigation Measures**

**CULTURAL RESOURCES**

- 4.5-1(a) As early as possible in the project planning process, the campus shall define the project's area of potential effects (APE) for archaeological resources and, if structures are present on the site, for historic structures. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project. Based on this information, the campus shall:
- (i) Prepare an inventory of all buildings and structures within the APE that will be 50 years of age or older at the time of project construction for review by a qualified architectural historian. If no structures are present on the site, there would be no impact to historic built environment resources from the project. If potentially historic structures are present, LRDP Mitigation 4.5-1(c) shall be implemented.
  - (ii) Determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:
    - Minimum: excavation less than 18 inches deep and in a relatively small area (e.g., a trench for lawn irrigation, tree planting, etc.). Implement LRDP Mitigation 4.5-1(b)(i).
    - Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized and is not suspected to be a likely location for archaeological resources. Implement LRDP Mitigation 4.5-1 (b)(i) and (ii).
    - Intensive: excavation below 18 inches and/or over a large area on any site that is within 800 feet of the historic alignment of Putah Creek, or that is adjacent to a recorded archaeological site. Implement LRDP Mitigation 4.5-1 (i), (ii) and (iii).
- 4.5-1(b) During the planning phase of the project, the campus shall implement the following steps to identify and protect archaeological resources that may be present in the APE:
- (i) For project sites at all levels of investigation, contractor crews shall be required to attend an informal training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the campus if any are found. In the event of a find, the campus shall implement item (vi), below.
  - (ii) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be

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## 2003 LRDP EIR Mitigation Measures

### CULTURAL RESOURCES

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implemented, as per item (iii), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the campus, develop an archaeological monitoring plan to be implemented during the construction phase of the project. The frequency and duration of monitoring shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. In the event of a discovery, the campus shall implement item (vi), below.

- (iii) For project sites requiring intensive investigation, irrespective of subsurface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of potential effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System.
  - (iv) If it is determined through step (iii), above, that the resource extends into the project's area of potential effects, the resource will be evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines § 15064.5. If the resource does not qualify, or if no resource is present within the project area of potential effects (APE), this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction (see (vi), below).
  - (v) If a resource within the project APE is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the campus shall consult with the qualified archaeologist to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement LRDP Mitigation 4.5-2(a).
  - (vi) If a resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The campus shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. LRDP Mitigation 4.5-1(b), steps (iii) through (vii) shall be implemented.
  - (vii) A written report of the results of investigations will be prepared by a qualified archaeologist and filed with the appropriate Information Center of the California Historical Resources Information System.
- 4.5-1(c)
- (i) Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualified architectural historian to record it on a California Department of Parks and Recreation DPR 523 form or equivalent documentation. Its significance shall be assessed by a qualified architectural historian, using the significance criteria set forth for historic resources under CEQA Guidelines Section 15064.5. The evaluation process shall include the development of appropriate historical background research as context for the assessment of the significance of the structure in the history of the University system, the campus, and the region. For historic buildings, structures or features that do not meet the CEQA criteria for historical resource, no further mitigation is required and the impact is less than significant.
  - (ii) For a building or structure that qualifies as a historic resource, the architectural historian and the campus shall consult to consider measures that would enable the project to avoid direct or indirect impacts to the building or structure. These could include preserving a building on the margin of the project site, using it "as is," or other measures that would not alter the building. If the project cannot avoid modifications to a significant building or structure, the campus shall implement LRDP Mitigation 4.5-2.
- 4.5-2(a)
- For an archaeological site that has been determined by a qualified archaeologist to qualify as an historical resource or a unique archaeological resource through the process set forth under LRDP Mitigation 4.5-1(b), and where it has been determined under LRDP Mitigation 4.5-1(b) that avoidance or preservation in place is not feasible, a qualified archaeologist, in consultation with the campus, shall:
- (i) Prepare a research design and archaeological data recovery plan for the recovery that will capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.
  - (ii) Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center, and provide for the permanent curation of recovered materials.

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## 2003 LRDP EIR Mitigation Measures

### CULTURAL RESOURCES

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- (iii) If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the CRHR, the campus shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would allow the site to be preserved intact, such as project redesign, placement of fill, or project relocation or abandonment. If no such measures are feasible, the campus shall implement LRDP Mitigation 4.5 3.
- 4.5-3 If a significant historic resource or unique archaeological resource cannot be preserved intact, before the property is damaged or destroyed the campus shall ensure that the resource is appropriately documented, as follows.
- (i) For a built environment feature, appropriate documentation is described under LRDP 4.5-2 (b)
- (ii) For an archaeological site, a program of research-directed data recovery shall be conducted and reported, consistent with LRDP Mitigation 4.5-2(a).
- 4.5-4(a) Implement LRDP Mitigation 4.5-1, 4.5-2 and 4.5-3 to minimize the potential for disturbance or destruction of human remains in an archaeological context and to preserve them in place, if feasible.
- 4.5-4(b) Provide a representative of the local Native American community an opportunity to monitor any excavation (including archaeological excavation) within the boundaries of a known Native American archaeological site.
- 4.5-4(c) In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation in the vicinity will halt immediately and the area of the find will be protected until a qualified archaeologist determines whether the bone is human. If the qualified archaeologist determines the bone is human, or if a qualified archaeologist is not present, the campus will notify the Yolo or Solano County Coroner (depending on the county of the find) of the find before additional disturbance occurs. Consistent with California Health and Safety Code § 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC 5097 procedures, the campus will ensure that the remains and vicinity of the find are protected against further disturbance. If it is determined that the find is of Native American origin, the campus will comply with the provisions of PRC § 5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).
- 4.5-4(d) If human remains cannot be left in place, the campus shall ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains, and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The campus shall provide results of all such studies to the local Native American community, and shall provide an opportunity of local Native American involvement in any interpretative reporting. As stipulated by the provisions of the California Native American Graves Protection and Repatriation Act, the campus shall ensure that human remains and associated artifacts recovered from campus projects on state lands are repatriated to the appropriate local tribal group if requested.
- 4.5-5 Implement LRDP Mitigations 4.5-1 through 4.5-4.
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## 7.5.4 Environmental Checklist and Discussion

<b>CULTURAL RESOURCES</b>		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- a) The project site is a vacant agricultural field with no signs of prior development and no historic resources. No impact would occur.
- b) The 2003 LRDP EIR identified that development under the 2003 LRDP could damage or destroy archaeological resources (LRDP Impact 4.4-1). This risk is highest on the portions of the campus along the historic banks of the tributaries and slough channels of Putah Creek and in the vicinity of previously discovered archaeological sites. The proposed project site is located approximately 1 mile south of the zone of cultural sensitivity bordering the historic channel of Putah Creek (now the Arboretum waterway).

In compliance with 2003 LRDP Mitigation 4.5-1(a), the campus will train contractor crews to identify potential cultural materials and will monitor subsurface excavation using a qualified archaeologist to at the project area. In compliance with LRDP Mitigation 4.5-1(b) (ii) an archaeological monitoring plan that reflects the result of the cultural resources site surveys will be developed and implemented during construction to ensure that in the remote chance that any archaeological materials are uncovered during project construction, all work in the immediate vicinity stops until a qualified archaeologist can assess the find. With implementation of LRDP Mitigation Measures, this impact would be reduced to a less-than-significant level.

The 2003 LRDP EIR identified that development under the 2003 LRDP would contribute to the cumulative damage to and loss of archaeological resources in Yolo and Solano counties (LRDP Impact 4.5-5). Because any disturbance of native soils involves the potential to result in impacts to archaeological resources, the proposed project could contribute to this impact however, such an impact is not anticipated because the site is away from the zone of cultural sensitivity. LRDP Mitigation Measure 4.5-5, which is relevant to the proposed project, requires the campus to implement the measures discussed above to survey and protect cultural resources. If cultural resources are impacted as a result of the project, the impact would be significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No new mitigation measures are available to further reduce this potential cumulative impact.

- c) During the course of development at UC Davis, extensive excavation for buildings and infrastructure, and extensive agricultural operations have not revealed the presence of unique paleontological or geological resources. It appears that the campus lacks unique paleontological and geological resources due to the deep alluvial deposition of fairly uniform soil types in the area. No impact would occur, and no additional analysis is required.
  
- d) The 2003 LRDP EIR found the potential for development under the 2003 LRDP to disturb human remains, including those interred outside of formal cemeteries (LRDP Impact 4.5-4). LRDP Mitigation 4.5-4(a-d), included in the proposed project, would ensure that human remains in archaeological and isolated contexts would be protected from destruction that might take place from development through measures including identification, Native American consultation, preservation in place or recovery, respectful treatment and study, and reinterment. Therefore, this impact would be less than significant.

## **7.6 GEOLOGY, SOILS, & SEISMICITY**

### **7.6.1 Background**

Section 4.6 of the 2003 LRDP EIR addresses the geology, soils, and seismicity effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.6 of the 2003 LRDP EIR.

#### **Campus**

The campus is located within the Putah Creek Plain of California’s Great Valley geomorphic province. Except for the somewhat raised elevation along the levee adjacent to Putah Creek, the campus is topographically flat. Soils on campus generally contain a high amount of silt and clay, and as a result, are moderately to slowly permeable and have slow runoff rates, minimal erosion hazards, and moderate to high shrink-swell potential (the potential for soil volume to change with a loss or gain in moisture). The predominant soil constraint to construction on campus is soil shrink-swell potential.

A series of low foothills, including the Dunnigan Hills, the Capay Hills, and the English Hills, lie approximately 20 miles west of the campus at the eastern base of the Coast Range. The presence of subsurface thrust faults within these regional foothills and within 100 miles of the campus indicates the potential for seismic ground shaking in the Davis region. The Davis region is not located within an Alquist-Priolo Fault Zone as defined in the Alquist-Priolo Earthquake Fault Zoning Act, which is designed to prohibit the construction of structures for human occupancy across active faults. According to the California Geological Survey’s Probabilistic Seismic Hazard Assessment for the State of California, the peak ground acceleration with a 10 percent probability of being exceeded in 50 years is 0.2 to 0.3g on the central campus, increasing to 0.3 to 0.4g on the western portion of Russell Ranch (CDOC 1996). By comparison, in most parts of the San Francisco Bay Area, the peak ground acceleration is 0.5g or greater. Likely effects of ground shaking during a probable maximum intensity earthquake for the area could include structural damage to stucco, masonry walls, and chimneys, which could expose people to risks associated with falling objects and potential building collapse.

#### **Project Site**

The project site is flat and contains soils typical of the UC Davis area.

### **7.6.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers an impact related to geology, soils, and seismicity significant if growth under the 2003 LRDP would:

- Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking.
- Expose people or structures to potential substantial adverse effects involving seismic-related ground failure.
- Result in substantial soil erosion or the loss of topsoil. (Impacts associated with the effect of erosion on water quality are addressed in Section 7.8 Hydrology & Water Quality.)
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.

- Be located on expansive soil, creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Additional standards from the CEQA Guidelines' Environmental Checklist (a,i) and (a,iv) in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

### 7.6.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 related to geology, soils, and seismicity are evaluated in Section 4.6 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR and no significant impacts identified in the 2003 LRDP EIR related to aesthetics are relevant to the proposed project.

### 7.6.4 Environmental Checklist and Discussion

<b>GEOLOGY, SOILS, &amp; SEISMICITY</b>					
Would the project...	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The proposed solar panels would not represent a seismic safety hazard and would not expose people or structures to risk from seismic or landslide events. The project would be located in rural area and would not be populated. Aside from disrupting electricity production from the panels, seismic effects would pose no danger to people or structures as a result of the proposed project. Therefore, no impact would occur and no further analysis is required.
- b) The soil types that occur on the UC Davis campus generally, including the project site, are alluvial contain a high amount of silt and clay, and these soil types have minimal erosion hazard associated with them (see pages 4.6-1,2 and Figure 4.6-1 of the 2003 LRDP EIR). Therefore, this impact was determined to be less than significant in the 2003 LRDP EIR. The relationship between receiving water quality and potential soil erosion as a result of construction activities is addressed in items (a) and (c) in Section 7.8 Hydrology & Water Quality.
- c) The potential for liquefaction on the campus is generally low because the depth to groundwater is relatively large (30 to 80 feet, depending on the season). The proposed project would install minor footings for the solar panels with a depth of approximately 3 to 6 feet. The proposed project would have no potential to cause liquefaction. No impact would occur.
- d) The soils in several areas of the campus have high shrink/swell potential and could, on a site-specific basis, have the potential to create risk to life or property. Campus policy requires compliance with the California Building Code (CBC), which includes provisions for construction on expansive soils such as proper fill selection, moisture control, and compaction during construction. Complying with the provisions of the CBC requires that a geotechnical investigation be performed to provide data for the architect and/or engineer to responsibly design the project. The project will comply with the CBC, which will ensure that this impact is less than significant.
- e) No septic tanks or alternative wastewater disposal systems are included in the proposed project, and there would be no impact.

## 7.7 GREENHOUSE GAS EMISSIONS

This section discusses the existing global, national, and statewide conditions related to greenhouse gases (GHG) and global climate change and evaluates the potential impacts on global climate from the implementation of the proposed project. The section also provides a brief discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. The analysis in this Draft EIR determines that the proposed project would result in less than significant GHG impacts.

The following sources were used to prepare this section of the Draft EIR:

- UC Davis 2003 Long Range Development Plan (2003 LRDP)
- YSAQMD's Handbook for Assessing and Mitigating Air Quality Impacts
- CalEEMod emission model User's Guide Version 2011.1
- The UC Davis 2009-2010 Climate Action Plan

### 7.7.1 Environmental Setting

#### Background

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer) (U.S. EPA 2008a). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The primary change in global climate has been a rise in the average global tropospheric temperature of 0.2 degree Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur, which would induce further changes in the global climate system during the current century (IPCC 2007). Changes to the global climate system and ecosystems, and to California, could include:

- declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007);
- rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets (model-based projections of global average sea level rise at the end of the 21st century (2090–2099) range from 0.18 meter to 0.59 meter or 0.59 foot to 1.94 feet) (IPCC 2007);
- changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007);

- declining Sierra snowpack levels, which account for approximately one-half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years (Cal EPA 2006);
- increasing the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas located in the Southern California area and the San Joaquin Valley by the end of the 21st century (Cal EPA 2006);
- increasing the potential for erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Delta and associated levee systems due to the rise in sea level (California EPA 2006);
- increasing pest infestation, making California more susceptible to forest fires (Cal EPA 2006);
- increasing the demand for electricity by 1 to 3 percent by 2020 due to rising temperatures resulting in hundreds of millions of dollars in extra expenditures (Cal EPA 2006); and
- summer warming projections in the first 30 years of the 21st century ranging from about 0.5 to 2 degrees Celsius (°C) (0.9 to 3.6 °F) and by the last 30 years of the 21st century, from about 1.5 to 5.8 °C (2.7 to 10.5 °F) (Cal EPA 2006).

The natural process through which heat is retained in the troposphere<sup>2</sup> is called the “greenhouse effect.” The greenhouse effect traps heat in the troposphere through a threefold process as follows: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space. This third process is the focus of current climate change actions.

While water vapor and carbon dioxide (CO<sub>2</sub>) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific time period. The GWP of a gas is determined using CO<sub>2</sub> as the reference gas, which has a GWP of 1 over 100 years (IPCC 1996).<sup>3</sup> For example, a gas with a GWP of 10 is 10 times more potent than CO<sub>2</sub> over 100 years. The use of GWP allows GHG emissions to be reported using CO<sub>2</sub> as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as “carbon dioxide equivalents” (CO<sub>2</sub>e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO<sub>2</sub>.

## Greenhouse Gases

State law defines GHGs to include the following compounds:

- **Carbon Dioxide (CO<sub>2</sub>).** Carbon dioxide primarily is generated by fossil fuel combustion from stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources over the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent (U.S. EPA 2008b). Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWP of other GHGs. In 2004, 82.8 percent of California's GHG emissions were carbon dioxide (California Energy Commission 2007).
- **Methane (CH<sub>4</sub>).** Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural

<sup>2</sup> The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers).

<sup>3</sup> All Global Warming Potentials are given as 100-year values.

gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

- **Nitrous Oxide (N<sub>2</sub>O).** Nitrous oxide is produced by natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.
- **Hydrofluorocarbons (HFCs).** HFCs typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam-blowing is growing particularly as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs ranges from 140 for HFC-152a to 6,300 for HFC-236fa.
- **Perfluorocarbons (PFCs).** Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years) (Energy Information Administration 2007). The GWPs of PFCs range from 5,700 to 11,900.
- **Sulfur Hexafluoride (SF<sub>6</sub>).** Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change, with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio, as compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm] of CO<sub>2</sub>)

## Contributions to Greenhouse Gas Emissions

### Global

Worldwide anthropogenic (man-made) GHG emissions are tracked for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Man-made GHG emissions for Annex I nations are available through 2007. Man-made GHG emissions for Non-Annex I nations are available through 2005. The sum of these emissions totaled approximately 42,133 million metric tons of CO<sub>2</sub> equivalents (MMTCO<sub>2</sub>E).<sup>4</sup> It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.<sup>5</sup> The top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions according to the most recently available data (See Table 4.2-1, Top Five GHG Producer Countries and the European Union [Annual]). The GHG emissions in more recent years may differ from the inventories presented in Table 4.2-1; however, the data are representative of currently available global inventory data.

<sup>4</sup> The CO<sub>2</sub> equivalent emissions commonly are expressed as “million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>E).” The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that MMTCO<sub>2</sub>E = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that the emission of one million metric tons of methane is equivalent to the emission of 21 million metric tons of CO<sub>2</sub>.

<sup>5</sup> The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the UNFCCC data for the most recent year were used. United Nations Framework Convention on Climate Change, “Annex I Parties – GHG total without LULUCF,” [http://unfccc.int/ghg\\_emissions\\_data/ghg\\_data\\_from\\_unfccc/time\\_series\\_annex\\_i/items/3841.php](http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php) and “Flexible GHG Data Queries” with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, <http://unfccc.int/di/FlexibleQueries/Event.do?event=showProjection>. n.d.



**Table 4.2-1  
Top Five GHG Producer Countries and the European Union (Annual)**

Emitting Countries	GHG Emissions (MMTCO <sub>2e</sub> )
China	7,250
United States	7,217
European Union (EU), 27 Member States	5,402
Russian Federation	2,202
India	1,863
Japan	1,412
<b>Total</b>	<b>25,346</b>

*Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," <http://cait.wri.org/>. 2010. Excludes emissions and removals from land use, land-use change and forestry (LULUCF).  
Note: Emissions for Annex I nations are based on 2007 data. Emissions for Non-Annex I nations (e.g., China, India) are based on 2005 data).*

### United States

As noted in Table 4.2-1, the United States was the number two producer of global GHG emissions as of 2005. The primary GHG emitted by human activities in the United States was CO<sub>2</sub>, representing approximately 84 percent of total GHG emissions (U.S. EPA 2008a). Carbon dioxide from fossil fuel combustion, the largest source of GHG emissions, accounted for approximately 80 percent of U.S. GHG emissions.<sup>6</sup>

### State of California

The California Air Resources Board compiles GHG inventories for the State of California. Based on the 2006 GHG inventory data for the 2000–2006 GHG emissions inventory, California emitted 484 million metric tons of carbon dioxide equivalent (MMTCO<sub>2e</sub>) including emissions resulting from imported electrical power in 2006 (CARB 2009). Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute, California's total statewide GHG emissions rank second in the United States (Texas is number one) with emissions of 434 MMTCO<sub>2e</sub> excluding emissions related to imported power (CARB 2009).

A California Energy Commission (CEC) emissions inventory report placed CO<sub>2</sub> produced by fossil fuel combustion in California as the largest source of California's GHG emissions in 2004, accounting for 80 percent of the total GHG emissions (California Energy Commission 2006a). Emissions of CO<sub>2</sub> from other sources contributed 3.1 percent of the total GHG emissions; methane emissions contributed 6.4 percent; nitrous oxide emissions contributed 7.6 percent; and the remaining 3.2 percent was composed of emissions of high-GWP gases (California Energy Commission 2006a). These high GWP gases are largely composed of refrigerants, with small contributions of SF<sub>6</sub> used in connection with insulating materials for electricity transmission and distribution.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. Table 4.2-2, Annual GHG Emissions in California, provides

<sup>6</sup> *Supra* no. 4.

a summary of GHG emissions reported in California in 1990 and 2006 separated by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

Between 1990 and 2008, the population of California grew by approximately 8.1 million (from 29.8 to 37.9 million) (U.S. Census Bureau 2009; California Department of Finance 2010). This represents an increase of approximately 27.2 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from \$788 billion in 1990 to \$1.8 trillion in 2008, representing an increase of approximately 128 percent (over twice the 1990 gross state product) (California Department of Finance 2009). Despite the population and economic growth, California's net GHG emissions only grew by approximately 11 percent. The California Energy Commission (CEC) attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy (California Energy Commission 2006a).

**Table 4.2-2: Annual GHG Emissions in California**

Source Category	1990 (MMTCO <sub>2</sub> e)	Percent of Total	2008 (MMTCO <sub>2</sub> e)	Percent of Total
<b>ENERGY</b>	<b>386.41</b>	<b>89.2%</b>	<b>413.80</b>	<b>86.6%</b>
Energy Industries	157.33	36.3%	171.23	35.8%
Manufacturing Industries & Construction	24.24	5.6%	16.67	3.5%
Transport	150.02	34.6%	173.94	36.4%
Other (Residential/Commercial/Institutional)	48.19	11.1%	46.59	9.8%
Non-Specified	1.38	0.3%	0.00	0.0%
Fugitive Emissions from Oil & Natural Gas	2.94	0.7%	3.28	0.7%
Fugitive Emissions from Other Energy Production	2.31	0.5%	2.09	0.4%
<b>INDUSTRIAL PROCESSES &amp; PRODUCT USE</b>	<b>18.34</b>	<b>4.2%</b>	<b>30.11</b>	<b>6.3%</b>
Mineral Industry	4.85	1.1%	5.35	1.1%
Chemical Industry	2.34	0.5%	0.06	0.0%
Non-Energy Products from Fuels & Solvent Use	2.29	0.5%	1.97	0.4%
Electronics Industry	0.59	0.1%	0.80	0.2%
Substitutes for Ozone Depleting Substances	0.04	0.0%	13.89	2.9%
Other Product Manufacture and Use	3.18	0.7%	1.66	0.3%
Other	5.05	1.2%	6.39	1.3%
<b>AGRICULTURE, FORESTRY, &amp; OTHER LAND USE</b>	<b>19.11</b>	<b>4.4%</b>	<b>24.42</b>	<b>5.1%</b>
Livestock	11.67	2.7%	16.28	3.4%
Land	0.19	0.0%	0.19	0.0%
Aggregate Sources & Non-CO <sub>2</sub> Sources on Land	7.26	1.7%	7.95	1.7%
<b>WASTE</b>	<b>9.42</b>	<b>2.2%</b>	<b>9.41</b>	<b>2.0%</b>
Solid Waste Disposal	6.26	1.4%	6.71	1.4%
Wastewater Treatment & Discharge	3.17	0.7%	2.70	0.6%
<b>EMISSIONS SUMMARY</b>				
Gross California Emissions	433.29		477.74	
Sinks from Forests and Rangelands	-6.69		-3.98	
Net California Emissions	426.60		473.76	

Source Category	1990 (MMTCO <sub>2</sub> e)	Percent of Total	2008 (MMTCO <sub>2</sub> e)	Percent of Total
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Sources: <sup>1</sup>California Air Resources Board, "California Greenhouse Gas 1990-2004 Inventory by IPCC Category - Summary," <http://www.arb.ca.gov/cc/inventory/archive/archive.htm>. 2010.

<sup>2</sup> California Air Resources Board, "California Greenhouse Gas 2000-2008 Inventory by IPCC Category - Summary," <http://www.arb.ca.gov/cc/inventory/data/data.htm>. 2010.

## 7.7.2 Regulatory Considerations

### Intergovernmental Panel on Climate Change

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the IPCC in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. While not a regulatory body, the IPCC assesses information (i.e., scientific literature) regarding human-induced climate change and the impacts of human-induced climate change, and recommends options to policy makers for the adaptation and mitigation of climate change. The IPCC reports its evaluations in special reports called "assessment reports." The latest assessment report (i.e., Fourth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2007.<sup>7</sup> In its 2007 report, the IPCC stated that global temperature increases since the mid-20th century were "very likely" attributable to man-made activities (greater than 90 percent certainty) (IPCC 2007).

### Federal

In *Massachusetts vs. EPA*, the Supreme Court held that United States Environmental Protection Agency (U.S. EPA) has the statutory authority under Section 202 of the Clean Air Act (CAA) to regulate GHGs from new motor vehicles. The court did not hold that the U.S. EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. Upon the final decision, the President signed Executive Order 13432 on May 14, 2007, directing the U.S. EPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision.

In December 2007, the President signed the Energy Independence and Security Act of 2007, which sets a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022 and sets a national fuel economy standard of 35 miles per gallon by 2020. The act also contains provisions for energy efficiency in lighting and appliances and for the implementation of green building technologies in federal buildings. On July 11, 2008, the U.S. EPA issued an Advanced Notice of Proposed Rulemaking (ANPRM) on regulating GHGs under the CAA. The ANPRM reviews the various CAA provisions that may be applicable to the regulation of GHGs and presents potential regulatory approaches and technologies for reducing GHG emissions. On April 10, 2009, the U.S. EPA published the Proposed Mandatory Greenhouse Gas Reporting Rule in the Federal Register (U.S. EPA 2009). The rule was adopted on September 22, 2009 and covers approximately 10,000 facilities nationwide, accounting for 85 percent of U.S. GHG emissions.

On September 15, 2009, the U.S. EPA and the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) issued a joint proposal to establish a national program consisting

<sup>7</sup> The IPCC's Fourth Assessment Report is available online at <http://www.ipcc.ch/>.

of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The proposed standards would be phased in and would require passenger cars and light-duty trucks to comply with a declining emissions standard. In 2012, passenger cars and light-duty trucks would have to meet an average standard of 295 grams of CO<sub>2</sub> per mile and 30.1 miles per gallon. By 2016, the vehicles would have to meet an average standard of 250 grams of CO<sub>2</sub> per mile and 35.5 miles per gallon.<sup>8</sup> These standards were formally adopted by the U.S. EPA and DOT on April 1, 2010.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

While these findings do not impose additional requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by the U.S. EPA and DOT.

## State

Key state laws and regulations related to GHG emissions are described below. Additional assembly bills as well as non-regulatory advisory activities are summarized in Appendix C.

### Executive Order S-3-05 and the Climate Action Team

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The Secretary of Cal EPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of CARB, the Chairperson of the CEC, and the President of the Public Utilities Commission.

Representatives from each of the aforementioned agencies comprise the Climate Action Team. The Cal/EPA secretary is required to submit a biannual progress report from the Climate Action Team to the governor and state legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, coastline, and forests, and reporting possible mitigation and adaptation plans to combat these impacts. The Climate Action Team has fulfilled both of these report requirements through its March 2006 Climate Action Team Report to Governor Schwarzenegger and the Legislature (2006 CAT Report) (Cal EPA 2006). Some strategies currently being implemented by state agencies include CARB introducing vehicle climate change standards and diesel anti-idling measures, the Energy Commission implementing building and appliance efficiency standards,

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<sup>8</sup> The CO<sub>2</sub> emission standards and fuel economy standards stated are based on U.S. EPA formulas.

and the Cal/EPA implementing its green building initiative. The Climate Action Team also recommends future emission reduction strategies, such as using only low-GWP refrigerants in new vehicles, developing ethanol as an alternative fuel, reforestation, solar power initiatives for homes and businesses, and investor-owned utility energy efficiency programs. According to the report, implementation of current and future emission reduction strategies have the potential to achieve the goals set forth in Executive Order S-3-05.

### Assembly Bill 32

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries with penalties for noncompliance. AB 32 requires the State to undertake several actions – the major requirements are discussed below:

### CARB Early Action Measures

CARB is responsible for carrying out and developing the programs and requirements necessary to achieve the goal of AB 32—the reduction of California's GHG emissions to 1990 levels by 2020. The first action under AB 32 resulted in CARB's adoption of a report listing three specific early-action greenhouse gas emission reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early-action GHG reduction measures under AB 32. CARB has adopted regulations for all early action measures. The early-action measures are divided into three categories:

- Group 1 – GHG rules for immediate adoption and implementation
- Group 2 – Several additional GHG measures under development
- Group 3 – Air pollution controls with potential climate co-benefits

The original three adopted early action regulations meeting the narrow legal definition of “discrete early action GHG reduction measures” include:

- A low-carbon fuel standard to reduce the “carbon intensity” of California fuels;
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of “do-it-yourself” automotive refrigerants; and
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations adopted on October 25, 2007, also meeting the narrow legal definition of “discrete early action GHG reduction measures,” include:

- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- Reduction of perfluorocarbons from the semiconductor industry;
- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);

- The requirement that all tune-up, smog check and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency; and
- Restriction on the use of sulfur hexafluoride (SF6) from non-electricity sectors if viable alternatives are available.

### State of California Greenhouse Gas Inventory and 2020 Limit

As required under AB 32, on December 6, 2007, CARB approved the 1990 greenhouse gas emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO<sub>2</sub>e. CARB also projected the state's 2020 GHG emissions under "business as usual" (BAU) conditions—that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB used an average of the State's GHG emissions from 2002 through 2004 and projected the 2020 levels based on population and economic forecasts. The projected net emissions totaled approximately 596 MMTCO<sub>2</sub>e. Therefore, the state must reduce its 2020 BAU emissions by approximately 29 percent in order to meet the 1990 target.

The inventory revealed that in 1990, transportation, with 35 percent of the state's total emissions, was the largest single sector, followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent (these figures represent the 1990 values, compared to Table 4.2-2, which presents 2006 values). AB 32 does not require individual sectors to meet their individual 1990 GHG emissions inventory; the total statewide emissions are required to meet the 1990 threshold by 2020, however.

### CARB Mandatory Reporting Requirements

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring the mandatory reporting of GHG emissions for large facilities on December 6, 2007. The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of point source greenhouse gas emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity-generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary combustion sources. Transportation sources, which account for approximately 35 percent of California's total greenhouse gas emissions, are not covered by these regulations but will continue to be tracked through existing means. Affected facilities began tracking their emissions in 2008, and began reporting in 2009. Beginning in 2010, however, emissions reporting requirements are more rigorous and are subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

### AB 32 Climate Change Scoping Plan

As indicated above, AB 32 requires CARB to adopt a scoping plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. After receiving public input on the discussion draft of the Climate Change Proposed Scoping Plan released in June 2008, CARB released the Climate Change Proposed Scoping Plan in October 2008 that contains an outline of the proposed state strategies to achieve the 2020 greenhouse gas emissions limits. The CARB Governing Board approved the Climate Change Scoping Plan on December 11, 2008. Key elements of the Scoping Plan include the following recommendations:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;

- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state’s long-term commitment to AB 32 implementation.

Under the Scoping Plan, approximately 85 percent of the state’s emissions are subject to a cap-and-trade program where covered sectors are placed under a declining emissions cap. The emissions cap incorporates a margin of safety whereas the 2020 emissions limit will still be achieved even in the event that uncapped sectors do not fully meet their anticipated emissions reductions. Emissions reductions will be achieved through regulatory requirements and the option to reduce emissions further or purchase allowances to cover compliance obligations. It is expected that emission reduction from this cap-and-trade program will account for a large portion of the reductions required by AB 32.<sup>9</sup>

Table 4.2-3, AB 32 Scoping Plan Measures (SPMs), lists CARB’s preliminary recommendations for achieving greenhouse gas reductions under AB 32 along with a brief description of the requirements and applicability.

**Table 4.2-3  
AB 32 Scoping Plan Measures (SPMs)**

Scoping Plan Measure	Description
<b>SPM-1:</b> California Cap-and-Trade Program linked to Western Climate Initiative	Implement a broad-based cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system. Ensure California’s program meets all applicable AB 32 requirements for market-based mechanisms. Capped sectors include transportation, electricity, natural gas, and industry. Projected 2020 business-as-usual emissions are estimated at 512 MTCO <sub>2e</sub> ; preliminary 2020 emissions limit under cap-and-trade program are estimated at 365 MTCO <sub>2e</sub> (29 percent reduction).
<b>SPM-2:</b> California Light-Duty Vehicle GHG Standards	Implement adopted Pavley standards and planned second phase of the program. AB 32 states that if the Pavley standards (AB 1493) do not remain in effect, CARB shall implement equivalent or greater alternative regulations to control mobile sources.
<b>SPM-3:</b> Energy Efficiency	Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. The Scoping Plan considers green building standards as a framework to achieve reductions in other sectors, such as electricity.
<b>SPM-4:</b> Renewables Portfolio Standard	Achieve 33 percent Renewables Portfolio Standard by both investor-owned and publicly owned utilities.

<sup>9</sup> On March 17, 2011, the San Francisco County Superior Court found that CARB’s adoption of the cap-and-trade program did not comply with CEQA. (*Association of Irrigated Residents, et al. v. California Air Resources Board* [Case No. CPF-09-5095 62].) The litigation is ongoing in the Court of Appeal as of the date of publication of this EIR. (1st District Ct. App. Case No. A132165).

Scoping Plan Measure	Description
SPM-5: Low Carbon Fuel Standard	CARB identified the Low Carbon Fuel Standard as a Discrete Early Action item and the final regulation was adopted on April 23, 2009. In January 2007, Governor Schwarzenegger issued Executive Order S-1-07, which called for the reduction of the carbon intensity of California's transportation fuels by at least 10 percent by 2020.
SPM-6: Regional Transportation-Related Greenhouse Gas Targets	Develop regional greenhouse gas emissions reduction targets for passenger vehicles. SB 375 requires CARB to develop, in consultation with metropolitan planning organizations (MPOs), passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. SB 375 requires MPOs to prepare a sustainable communities strategy to reach the regional target provided by CARB.
SPM-7: Vehicle Efficiency Measures	Implement light-duty vehicle efficiency measures. CARB is pursuing fuel-efficient tire standards and measures to ensure properly inflated tires during vehicle servicing.
SPM-8: Goods Movement	Implement adopted regulations for port drayage trucks and the use of shore power for ships at berth. Improve efficiency in goods movement operations.
SPM-9: Million Solar Roofs Program	Install 3,000 MW of solar-electric capacity under California's existing solar programs.
SPM-10: Heavy/Medium-Duty Vehicles	Adopt heavy- and medium-duty vehicle and engine measures targeting aerodynamic efficiency, vehicle hybridization, and engine efficiency.
SPM-11: Industrial Emissions	Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.
SPM-12: High Speed Rail	Support implementation of a high-speed rail (HSR) system. This measure supports implementation of plans to construct and operate a HSR system between Northern and Southern California serving major metropolitan centers.
SPM-13: Green Building Strategy	Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.
SPM-14: High GWP Gases	Adopt measures to reduce high global warming potential gases. The Scoping Plan contains 6 measures to reduce high-GWP gases from mobile sources, consumer products, stationary sources, and semiconductor manufacturing.
SPM-15: Recycling and Waste	Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.
SPM-16: Sustainable Forests	Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The federal government and California's Board of Forestry and Fire Protection have the regulatory authority to implement the Forest Practice Act to provide for sustainable management practices. This measure is expected to play a greater role in the 2050 goals.
SPM-17: Water	Continue efficiency programs and use cleaner energy sources to move water. California will also establish a public goods charge for funding investments in water efficiency that will lead to as yet undetermined reductions in greenhouse gases.



Scoping Plan Measure	Description
SPM-18: Agriculture	In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020. Increase efficiency and encourage use of agricultural biomass for sustainable energy production. CARB has begun research on nitrogen fertilizers and will explore opportunities for emission reductions.

*Source: California Air Resources Board, Climate Change Scoping Plan, (2008).*

### Senate Bill 97 (CEQA Guidelines)

In August 2007, the legislature enacted SB 97 (Dutton), which directed the Governor’s Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of greenhouse gas emissions. A number of actions have taken place under SB 97, which are discussed below.

### OPR Climate Change Technical Advisory

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project’s GHG emissions, including those associated with vehicular traffic, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less than significant level. The advisory did not recommend a specific threshold of significance. Instead, OPR requested that CARB recommend a method for setting thresholds that lead agencies may adopt (OPR 2009).

### CEQA Guideline Amendments

In its work to formulate CEQA Guideline Amendments for GHG emissions, OPR submitted the Proposed Draft CEQA Guideline Amendments for Greenhouse Gas Emissions to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency conducted formal rulemaking procedures in 2009 and adopted the CEQA Guideline Amendments on December 30, 2009. They became effective in March 2010.

### Senate Bill 375

The California legislature passed SB 375 (Steinberg) on September 1, 2008. SB 375 requires CARB to set regional greenhouse gas reduction targets after consultation with local governments. The target must then be incorporated within that region’s regional transportation plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy. SB 375 also requires each region’s regional housing needs assessment (RHNA) to be adjusted based on the Sustainable Communities Strategy in its RTP. Additionally, SB 375 reforms the environmental review process to create incentives to implement the strategy, especially transit priority projects. The governor signed SB 375 into law on September 30, 2008. On February 17, 2011, CARB adopted regional GHG emission reduction targets for automobiles and light trucks.

### Title 24 Building Standards Code

The California Energy Commission first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

## **Regional Programs**

In July 2007, the Yolo-Solano Air Quality Management District (YSAQMD) adopted the Handbook for Assessing and Mitigating Air Quality Impacts (CEQA Handbook). The CEQA Handbook does not provide any quantitative thresholds for assessing greenhouse gas emissions, but does state that greenhouse gas emissions are an area of concern in environmental documents. The CEQA Handbook recommends that at least a qualitative assessment is made, noting that vehicle trips represent a particular area of concern.

## **Local Plans and Policies**

### UC Davis 2003 Long Range Development Plan

The 2003 LRDP is the plan for the development of the campus. Although the 2003 LRDP does not contain policies that specifically address GHG emissions, it does contain a number of elements with respect to fuel- and energy-efficiency provisions and elements that would encourage walking and bicycling on campus and in surrounding neighborhoods, all of which would reduce GHG emissions.

### UC Davis Climate Action Plan

As discussed earlier in this section, the UC Policy on Sustainable Practices – Climate Protection section targets three goals: reduction of GHG emissions back to 2000 levels by 2014, to 1990 levels by 2020, and ultimately climate neutrality. Climate neutrality is defined in the Policy as the University having a net zero impact on the Earth's climate, which is to be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions.

UC Davis has prepared the 2009-2010 Climate Action Plan (CAP), which includes both the Davis and Sacramento campuses, as well as outlying facilities. The CAP describes and addresses policy and regulatory requirements of (1) the UC Policy on Sustainable Practices, (2) AB 32, (3) the American College and University Presidents Climate Commitment, (4) CEQA, and (4) U.S. EPA reporting requirements. The CAP provides documentation of how campus GHG emissions are calculated, a report of 2008 emissions, estimates of past (to 1990) and future emissions (to 2020), a statement of GHG emission reduction goals, a characterization of options and methods to reduce emissions, and a blueprint for future action.

The CAP focuses on the 2014 and 2020 targets, with the understanding that climate neutrality will require fundamental shifts in global and national energy policy, energy production, and technologies currently using fossil fuels. Further, the CAP focuses on emissions related to campus operations, instead of commuting and air travel, because emissions related to commuting and air travel are less than one-quarter those of campus operations. The CAP does provide analysis of commuting and air travel reduction options, but does not quantify emissions reductions for those options.

In the CAP, GHG emissions were calculated back to 1990, using hard data whenever possible (and projected data when not), and including nearly every source of emissions. Calculated emissions for all of UC Davis, excluding commuting and air travel, for 2000 are 246,000 MTCO<sub>2e</sub> and for 1990 are 142,000 MTCO<sub>2e</sub>. In 2008, inventoried emissions (in CCAR), excluding commuting and air travel, totaled 238,000, indicating that UC Davis had already met the 2014 target. Thus, the CAP defined a new emissions target of 210,000 MTCO<sub>2e</sub>, almost 15 percent below the 2000 emissions, as the new 2014 target. The UC Davis target to reach 1990 emissions by the year 2020 is about 40 percent below the 2008 emissions.

Four years of verified inventories of emissions have shown consistently that the Davis campus contributes about 70 percent of the emissions total, the Sacramento campus contributes about 29 percent of the total, and the outlying facilities contribute about 1 percent of the total.

### 7.7.3 Standards of Significance

In accordance with Senate Bill (SB) 97, the Natural Resources Agency adopted amendments to the *State CEQA Guidelines* on December 30, 2009, which includes criteria for evaluating GHG emissions.<sup>10</sup> According to the amended *Appendix G of the State CEQA Guidelines*, a project would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The amended State CEQA Guidelines include a new Section 15064.4, which states that, when making a determination of the significance of GHG emissions, a lead agency shall have discretion to determine whether to (1) use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use; and/or (2) Rely on a qualitative analysis or performance based standards. Section 15064.4 also provides that a lead agency may consider the following factors when assessing the significance of GHG emissions on the environment: (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

Under CEQA, “the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.”<sup>11</sup> CEQA grants agencies with the general authority to adopt criteria for determining whether a given impact is “significant.”<sup>12</sup> When no guidance exists under CEQA, the agency may look to and assess general compliance with comparable regulatory schemes.

The first Appendix G criterion listed above may be evaluated by performing a direct calculation of the GHG emissions from the project. As of the time that this Initial Study was prepared, the University of California, Davis has not yet adopted project-level significance thresholds for GHG emissions relevant to the proposed project. While the project site is located in the YSAQMD, as noted above, the YSAQMD’s CEQA Handbook does not provide any quantitative thresholds for assessing greenhouse gas emissions. Several air quality management and air pollution control districts in California, including the Sacramento Metropolitan Air Quality Management District (SMAQMD), San Joaquin Valley APCD, and the Bay Area Air Quality Management District (BAAQMD), have adopted guidance documents for evaluating the significance of GHG emissions under CEQA. Other districts have published draft guidance documents that have not yet been formally adopted. The California Air Pollution Control Officers Association (CAPCOA) published a white paper in January 2008 examining approaches for local government to

<sup>10</sup> The adopted amendments may be viewed at the following Web site:  
<http://ceres.ca.gov/ceqa/guidelines/>. 2009.

<sup>11</sup> *State CEQA Guidelines* Section 15064(b).

<sup>12</sup> See *Cal. Pub. Resources Code* Section 21082.

assess GHG emissions under CEQA. (CAPCOA 2008) Three potential thresholds that could be used to evaluate the project's emissions include the following:

- Apply the most stringent, recommended non-zero threshold of 900 MTCO<sub>2e</sub> per year, which the CAPCOA identified in its white paper and estimated to capture at least 90% of all industrial projects.
- Apply SMAQMD-adopted guidance recommending that project achieve an approximately 30 percent reduction from "business as usual" (BAU) conditions (SMAQMD 2009).
- Apply BAAQMD-adopted thresholds for projects other than stationary sources on both a total emissions basis and a performance basis. The threshold for total emissions is 1,100 MTCO<sub>2e</sub> per year; the performance-based threshold is 4.6 MTCO<sub>2e</sub> per service population (employees plus residents) per year (BAAQMD 2010).

The analysis in this Initial Study utilizes the numeric threshold in the CAPCOA white paper in determining the significance of the project's estimated emissions. The threshold has no regulatory authority unless adopted by an air district. Therefore, although this threshold is not binding on the project as regulatory authority, it is intended as a reasonably conservative reference point for the analysis of project impacts in the absence of directly applicable quantitative thresholds.

The SMAQMD guidance does not provide a quantitative threshold, but recommends that the project be analyzed with respect to AB 32 goals, specifically a reduction in GHG emissions to 1990 levels by 2020, or approximately a 30% reduction from business as usual (BAU). As stated in the SMAQMD CEQA guidance, GHG emissions impacts are believed by the SMAQMD to be better analyzed and mitigated at the program level. The UC Davis CAP requires that the campus as a whole reduce its GHG emissions by 30% in 2020 compared to its 1990 baseline, which is consistent with the State's goal under AB 32. Similar to AB 32, the UC Davis CAP does not plan to require that individual projects meet a 30% reduction target, only that the campus as a whole meet the target (AB 32 requires the State as a whole to reduce emissions by 30%, not individual sectors). Since the project is included in the campus growth projections in the CAP and the CAP will allow UC Davis to meet its AB 32 requirements (i.e., 30% reduction), the project will not hinder UC Davis from meeting AB 32 goals overall.

Although the BAAQMD thresholds provide explicit numerical values, these values are based on projected increases in GHG emissions using growth data related to residential and commercial development specific to the Bay Area. Since the proposed project is outside the Bay Area, and the BAAQMD thresholds should only be seen as general guidance for assessing significance.

The second Appendix G criterion, requiring a determination of whether the project will conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, may be evaluated by demonstrating compliance with plans, policies, or regulations adopted by local governments to curb GHG emissions. According to the Natural Resources Agency:

Provided that such plans contain specific requirements with respect to resources that are within the agency's jurisdiction to avoid or substantially lessen the agency's contributions to GHG emissions, both from its own projects and from private projects it has approved or will approve, such plans may be appropriately relied on in a cumulative impacts analysis (California Natural Resources Agency 2009).

The UC Davis CAP is the relevant plan with which to review compliance. As noted above, the CAP describes and incorporates GHG emission reduction goals, a characterization of options and methods to reduce emissions, and a blueprint for future action to reduce GHG emissions to 1990 levels by 2020.

#### **7.7.4 Project Impacts**

##### **Project Level Impacts**

**Impact GHG-1:**            **The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (*No Impact*)**

The proposed solar panel project would decrease GHG emissions by generating electricity from sunlight and allowing UC Davis to reduce purchasing electricity produced by natural gas or coal-fired power plants. During installation, construction equipment would temporarily emit a small amount of GHG but the operational decrease in GHG emissions through the expected 20-year project life would exceed the temporary amount of construction emissions. No impact would occur.

##### **Cumulative Impacts**

**Impact GHG-2:**            **The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (*No Impact*)**

As described above, the proposed project would result in decreased UC Davis GHG emissions. The project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. No impact would occur.

## 7.7.5 References

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## **7.8 HAZARDS & HAZARDOUS MATERIALS**

### **7.8.1 Background**

Section 4.7 of the 2003 LRDP EIR addresses the hazards and hazardous materials effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.7 of the 2003 LRDP EIR.

#### **Campus**

A variety of hazardous materials are used on campus during the course of daily operations. Hazardous chemicals used on campus include: chemical solvents, reagents, and aromatic hydrocarbons that are used in campus laboratories; pesticides, fungicides, and herbicides used by agricultural programs and in landscape maintenance; relatively small amounts of solvents, paints, and acids used by fine arts programs; gasoline and diesel fuels, oils and lubricants, antifreeze, cleaning solvents and corrosives, paints and paint thinners, and freon refrigerants used in vehicle and building maintenance. In addition, radioactive materials, biohazardous materials, and laboratory animals are used in teaching and research activities. The use of hazardous materials on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes.

Generation, transportation, and disposal of hazardous wastes are regulated by various agencies. The lead federal regulatory agency is the Environmental Protection Agency. The State Department of Toxic Substances Control (DTSC) has primary state regulatory responsibility but can delegate enforcement authority to local jurisdictions that enter into agreements with the state agency, as it did with Yolo County Department of Environmental Health (YCDEH) under the Certified Unified Program Agency (CUPA) program.

The campus’ Office of Environmental Health and Safety (EH&S) coordinates most local, state, and federal regulatory compliance functions related to the campus’ health, safety, and environmental issues. EH&S performs safety education and training, regulatory interpretation and applicability, approval of potentially hazardous procedures, resolution of safety problems, surveillance, and monitoring. In addition, EH&S provides guidance for several campus safety programs, including: the Chemical Inventory System, which tracks inventory and use of hazardous materials on campus; the CUPA Self-Audit Program, which complies with the terms of an agreement with the YCDEH; development of laboratory-specific Chemical Hygiene Plans; the Radiation and X-Ray Safety Programs; and the Biological Safety Administrative Advisory Committee. EH&S is also a working partner in such campus administrative advisory groups as the Chemical Safety Committee, the Radiation Safety Committees, the Animal Use and Care Committee, and the Biological Safety Committee. External administrative and benchmarking reviews of the EH&S programs are conducted periodically to identify means of further improving the programs.

#### **Project Site**

The project site is vacant and currently used for agricultural production. The site shows no signs of prior development. Approximately 1/3 of a mile to the west of the project site is a known contamination site, the Laboratory for Energy Related Research/South Campus Disposal site which resulted from from prior university research and operational activities.

### **7.8.2 2003 LRDP EIR Standards of Significance**



The 2003 LRDP EIR considers a hazards and hazardous materials impact significant if growth under the 2003 LRDP would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
- For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Additional standards from the CEQA Guidelines’ Environmental Checklist (“f” and “h” in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

### 7.8.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 related to hazards and hazardous materials are evaluated in Section 4.7 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and no potentially significant hazards and hazardous materials impacts identified in the 2003 LRDP EIR are relevant to the proposed project. LRDP Impact 4.7-12 presented below, is considered less than significant prior to mitigation, but the 2003 LRDP EIR identified mitigation to further reduce the significance of this impact. Less than significant impacts without mitigation measures are not presented here.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>HAZARDS &amp; HAZARDOUS MATERIALS</b>			
4.7-12	Construction activities on campus under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater.	LS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

**2003 LRDP EIR Mitigation Measures**

**HAZARDS & HAZARDOUS MATERIALS**

4.7-12 The campus shall perform due diligence assessments of all sites where ground-disturbing construction is proposed.

**7.8.4 Environmental Checklist and Discussion**

<b>HAZARDS &amp; HAZARDOUS MATERIALS</b>		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The proposed project would not use or transport hazardous materials and would have no possibility to produce upset or accident conditions related to the release of hazardous materials into the environment. No impact would occur.
- b) The 2003 LRDP EIR found that construction activities under the 2003 LRDP would not expose construction workers and campus occupants to contaminated soil or groundwater (Impact 4.7-12). Campus policy requires that due diligence surveys be performed for all proposed project sites as part of the project planning process. A due diligence survey will be conducted as part of the project to determine whether any items of environmental concern are located on the project site. Federal and state regulations require that workers who may be exposed to contaminants during the course of their jobs know of the presence of contamination and be properly trained. In addition, these regulations require that appropriate engineering and administrative controls and protective equipment be provided to reduce exposure to safe levels. Current campus due diligence policy and Cal/OSHA regulations minimize the exposure of construction workers to contaminants. In addition, if contaminants are identified on project sites, the campus would coordinate site remediation. Therefore, the impact would be less than significant. To ensure that due diligence surveys are performed and to further reduce this less-than-significant impact, LRDP Mitigation 4.7-12 will be conducted as part of the proposed project.
- c) The project is not within  $\frac{1}{4}$  of a mile of a school and would not emit hazardous substances. Accordingly, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur.
- d) The Laboratory for Energy Related Research/South Campus Disposal site is the only campus site that is listed as a hazardous materials site pursuant to Government Code Section 65962.5. The proposed project would not disturb this site. The proposed project is approximately  $\frac{1}{3}$  of a mile from the Laboratory for Energy Related Research/South Campus Disposal. No impact would occur.
- e) The 2003 LRDP EIR found that development of certain projects on the west campus under the 2003 LRDP could result in safety hazards associated with aircraft. However, the proposed project is not one of these projects and would not conflict with airport operations. Glare at the project site could potentially be produced by reflection from the solar panels. While the panels are designed to absorb the light energy of sunlight and not reflect glare, certain angles could produce glare towards the sky that would not be noticeable from the ground but could be noticeable from airplanes. During typical operation, the panels will become coated with dust from the surrounding area further reducing the overall amount of glare directed toward the sky. After periodic maintenance (1-4 times per year), to clean the dusty panels, the skyward glare would be temporarily increased. The glare from the panels is not expected to interfere with aircraft operations because the project site is away from airport operations areas and pilots do not need look toward the ground and make piloting decisions while in the area of the project site. Therefore, the impact would be less than significant.
- f) The University Airport is a public use airport, not a private airstrip. No other airport facilities are within the immediate vicinity of the campus. No impact would occur. Refer to item e) above for a discussion of potential safety hazards associated with the University airport, a local public use airport.
- g) The 2003 LRDP EIR found that implementation of the 2003 LRDP could interfere with the campus' Emergency Operations Plan through construction-related road closures (Impact 4.7-17). The project is not located near a road and would not affect emergency operations. No impact would occur.

- h) Areas along Putah Creek are the only areas on campus that could be susceptible to wildland fires. The proposed project site is near Putah Creek in an agricultural field. Weed control within the project site would take place on a regular basis. The levee and levee road between the project site and the Putah Creek would provide separation so that fires from Putah Creek would not affect the site. No impact would occur.

## 7.9 HYDROLOGY & WATER QUALITY

### 7.9.1 Background

Section 4.8 of the 2003 LRDP EIR addresses the hydrology and water quality effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.8 of the 2003 LRDP EIR.

#### **Campus**

##### Surface Water Resources

The UC Davis campus is located in the Lower Sacramento watershed. Putah Creek, the principal waterway in the Davis area, originates from springs in the Mayacamas Mountains northwest of the campus, flows into Lake Berryessa, through Winters, along the southern boundary of Russell Ranch, along the southern boundary of UC Davis’ west and south campuses, and eventually into the Yolo Bypass, an overflow channel for the Sacramento River. The North Fork Cutoff and the Arboretum Waterway on campus follow the historic channel of Putah Creek, but currently have no natural flow. The North Fork Cutoff is a typically dry stream channel on the west campus that is currently occupied by sheep and cattle programs in the Department of Animal Science. The Arboretum Waterway serves as the storm water detention basin for the central campus.

UC Davis is a member of the Solano Project, and currently has rights to purchase 4,000 acre-feet of Putah Creek water from Lake Berryessa per year, although reductions in deliveries can occur during drought conditions. The water is delivered to the southwest corner of the campus via an underground pipeline. UC Davis also has rights to surface water from Putah and Cache Creeks. The campus has not used this water in the recent past, but the tenant farmer at Russell Ranch uses approximately 3,750 acre-feet of water per year from Putah and Cache Creeks (via Willow Canal) for irrigation of commercial crops.

The quantity and quality of flows in Putah Creek are highly variable and depend on releases from Lake Berryessa, precipitation, storm water runoff, and treated effluent discharge. The campus’ tertiary level Wastewater Treatment Plant (WWTP) is the largest discharger of treated effluent to Putah Creek. The plant is regulated under a National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirement (WDR) permit issued by the Central Valley Regional Water Quality Control Board (CVRWQCB).

##### Groundwater Resources

The campus is underlain by sand and gravel alluvial deposits that include deep and shallow/intermediate depth aquifers. Deep gravel and sand aquifers underlie the campus between 600 to 1,500 feet below ground surface and supply the campus domestic/fire system. Historic annual domestic water use on campus over the past three decades has ranged from less than 600 million gallons per year (mgy) during drought conditions to nearly 900 mgy (UC Davis 1997). Despite the campus’ significant growth in recent decades, the campus’ deep aquifer demands have not significantly increased since the late 1960s (Ludorff and Scalmanini 2003), a trend that reflects the success of the campus’ water conservation efforts.

Shallow/intermediate depth sand and gravel aquifers underlie the campus at depths from 150 to 800 feet below ground surface and supply the campus utility water system, main campus agricultural water needs, and campus and tenant farmer irrigation needs at Russell Ranch. Over the past ten years, an average of approximately 2,657 acre-feet per year of shallow/intermediate aquifer water was used for agricultural purposes on campus, including approximately 1,813 acre-feet on the main campus and approximately 844

acre-feet at Russell Ranch (UC Davis Agricultural Services 2003, UC Davis ORMP 2003c). Water levels in the shallow/intermediate aquifer vary seasonally and strongly correlate to precipitation. A generally upward recharge trend over the period from 1957 to 2002 indicates that there has not been long-term overdraft of the shallow/intermediate depth aquifers (Ludorff and Scalmanini 2003).

Regional groundwater quality is generally characterized as having high mineral content. Calcium, magnesium, and sulfates have been identified as the dominant problematic constituents.

### Flooding & Drainage

On campus, the South Fork of Putah Creek, the North Fork Cutoff, and the Arboretum Waterway channels are designated as FEMA 100-year floodplain areas. In addition, a portion of Russell Ranch along County Road 31 and a portion of the west campus along County Road 98 are also subject to flooding during a 100-year storm event.

The central campus drainage system intercepts and collects runoff and directs this water via underground pipes to the Arboretum Waterway. During large storm events, water rises in the Arboretum Waterway, overtops the weir at the west end of the waterway, and flows into the pump pond located north of the weir. From the pump pond, water is pumped through an underground storm drain to the South Fork of Putah Creek. The peak discharge from the Arboretum Waterway to Putah Creek since December 1999 was 65 cubic feet per second (cfs). The majority of land in the west and south campuses and at Russell Ranch is used as teaching and research fields and is not drained by a storm drainage system. Irrigation practices on campus teaching and research fields typically do not generate surface runoff. However, large storm events may result in shallow overland flows that flow to temporary shallow ponds in places such as road and field edges. In addition, developed areas on the west and south campuses include storm water conveyance systems that drain to Putah Creek.

To protect the quality of storm water on campus that ultimately drains to Putah Creek, UC Davis construction and industrial activities are subject to the NPDES storm water requirements. Routine maintenance and minor construction activities on campus are subject to the campus' Phase II Storm Water Management Plan (SWMP).

### **Project Site**

An engineering study of the proposed project site indicates that flooding of approximately 18 inches may occur during a 100-year rain event. The project site is flat with most stormwater infiltrating through the soil to become groundwater.

#### **7.9.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers a hydrology and water quality impact significant if growth under the 2003 LRDP would:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on site or off site.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on site or off site.
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding.

Additional standards from the CEQA Guidelines’ Environmental Checklist (“g” and “j” in the checklist below) were found not applicable to campus growth under the 2003 LRDP.

### 7.9.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on hydrology and water quality are evaluated in Section 4.8 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and significant and potentially significant hydrology and water quality impacts identified in the 2003 LRDP EIR that are relevant to the proposed project are presented below with their corresponding levels of significance before and after application of mitigation measures identified in the 2003 LRDP EIR. In addition, Impact 4.8-1, presented below, is considered less than significant prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of this impact.

<b>2003 LRDP EIR Impacts</b>		<b>Level of Significance Prior to Mitigation</b>	<b>Level of Significance After Mitigation</b>
<b>HYDROLOGY &amp; WATER QUALITY</b>			
4.8-1	Campus construction activities associated with implementation of the 2003 LRDP would not contribute substantial loads of sediment or other pollutants in storm water runoff that could degrade receiving water quality.	LS	LS
4.8-9	Development under the 2003 LRDP could place non-residential structures within a 100-year floodplain, which could expose people and structures to risks associated with flooding and/or impede or redirect flows, contributing to flood hazards.	PS	LS

Levels of Significance: LS=Less than Significant, S=Significant, PS=Potentially Significant, SU=Significant and Unavoidable

Mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project are presented below. Since these mitigation measures are already being carried out as part of implementation of the 2003 LRDP, they are considered part of the project description and will not be readopted in this Initial Study or Negative Declaration. Nothing in this Initial Study in any way alters the obligations of the campus to implement 2003 LRDP EIR mitigation measures.

## 2003 LRDP EIR Mitigation Measures

### HYDROLOGY & WATER QUALITY

- 4.8-1 The campus shall continue to comply with the NPDES state-wide General Permit for Discharge of Storm Water Associated with Construction Activity by implementing control measures and BMPs required by project-specific SWPPPs and with the Phase II SWMP to eliminate or reduce non-storm and storm water discharges to receiving waters.
- 4.8-9(a) Prior to final design, the campus will review the plans for all structures to be constructed in the 100-year floodplain for compliance with the following FEMA requirements for non-residential structures:
- (i) Elevate the lowest floor (including the basement) to or above the base flood level; or
  - (ii) Together with attendant utility and sanitary facilities, design so that below the base flood level, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
  - (iii) Require that fully enclosed areas below the lowest floor that are subject to flooding be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for entry and exit of flood waters.
- 4.8-9(b) For structures placed within the 100-year floodplain, flood control devices will be designed to direct flows toward areas where flood hazards will be minimal.

## 7.9.4 Environmental Checklist and Discussion

### HYDROLOGY & WATER QUALITY

Would the project...	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,f) **Construction**

The 2003 LRDP EIR found that construction on campus under the 2003 LRDP would not contribute substantial loads of sediment or other pollutants to storm water runoff (Impact 4.8-1). Construction on campus is covered under the NPDES state-wide General Permit for Discharge of Storm Water Associated with Construction Activity. As part of this permit, campus construction projects managed by outside contractors and/or disturbing over one acre (including the proposed project) must implement Storm Water Pollution Prevention Plans (SWPPPs), which specify Best Management Practices (BMPs) to reduce the contribution of sediments, spilled and leaked liquids from construction equipment, and other construction-related pollutants to storm water runoff. All routine maintenance activities and any construction projects disturbing less than one acre that are not managed by outside contractors are covered under the campus' Phase II Municipal Storm Water Management Plan, which requires BMPs to reduce contribution of pollutants to storm water runoff. Because the UC Davis campus is required to comply with the NPDES state-wide permit and Phase II requirements, the water quality effects associated with construction activities on campus are considered to be less than significant. In addition, LRDP Mitigation 4.8-1, included as part of the project, requires the campus to implement BMPs to reduce construction-related water quality impacts.

**Operation**

The proposed project would not increase discharge of treated effluent from the campus WWTP into the South Fork of Putah Creek. No effects are expected from operation of the solar power plant.

b) **Deep Aquifer**

The project would not utilize water from the deep aquifer. No impact would occur.

**Shallow/Intermediate Aquifer**

The project would not decrease the permeability at the project site and the cessation of agricultural groundwater pumping to grow crops at the site would result in a net increase in shallow/intermediate aquifer levels. The project would have no potential to increase withdrawals from the shallow/intermediate aquifer. No impact would occur.

c,d,e) The proposed project would include minor grading to ensure that water does not drain from the project site. The proposed project would not increase flows to drainage facilities and would have no components that could result in the alteration in the course of a stream or river. No effects on drainage patterns are expected. No impact would occur.

- g) Under the 2003 LRDP, housing (including on-campus student housing and housing within the proposed neighborhood) would be constructed outside the 100-year flood zones on campus (see 2003 LRDP EIR, Figure 4.8-4, 100-Year Floodplain). The proposed project includes no housing. Therefore, no impact would occur.
- h, i) The 2003 LRDP EIR found that development under the 2003 LRDP could place non-residential structures within a 100-year floodplain, which could expose people and structures to risks associated with flooding and/or could impede or redirect flows, contributing to flood hazards (LRDP Impact 4.8-9). The proposed project would be located within the 100-year floodplain and although the project would not expose people or structures to flood hazards, the project would expose the solar panels to potential flooding. Implementation of LRDP Mitigation 4.8-9(a-b) would take place with design of the proposed supports for the solar panels so that the panels are installed on stanchions tall enough to keep the solar panels above the 100-year flood level. At the project site, the 100-year flood level is expected to be approximately 1-2 feet and the stanchions are expected to elevate the panels one to five feet above the ground surface. The potential impact would be less-than-significant.
- j) The campus is not subject to inundation by seiche, tsunami, or mudflow. The campus is generally flat and is not located in close proximity to any large water bodies. Therefore, no impact would occur.

## 7.10 LAND USE & PLANNING

### 7.10.1 Background

Section 4.9 of the 2003 LRDP EIR addresses the land use and planning effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.9 of the 2003 LRDP EIR.

#### Campus

The approximately 5,300-acre UC Davis campus is located within Yolo and Solano counties. Local land use is predominantly agricultural, with small cities and towns. The campus is surrounded by extensive agricultural uses to the west and south and by residential, institutional, and commercial land uses in the City of Davis, to the north and east. The City of Davis is a university-oriented community with over 62,000 residents. The UC Davis campus consists of four general units: the central campus, the south campus, the west campus, and Russell Ranch. In addition, the University of California owns several properties in the City of Davis, including buildings in downtown Davis and buildings and vacant parcels in the South Davis Research Park, located south of I-80.

As a state entity, UC Davis is not subject to municipal policies such as the City of Davis General Plan. Nevertheless, such policies are of interest to the campus. The campus has a tradition of working cooperatively with the local communities and it is University policy to seek consistency with local plans and policies, where feasible.

The 2003 LRDP is the campus’ primary land use planning guide. It designates campus lands for the following uses through 2015-16: *Academic and Administrative* (High and Low Density); *Teaching and Research Fields*; *Teaching and Research Open Space*; *Parking*; *Physical Education, Intercollegiate Athletics, and Recreation* (PE/ICA/Recreation); *Research Park* (High and Low Density); *Formal Open Space*; *Community Gardens*; *Faculty/Staff Housing*, *Student Housing*; *Mixed Use Housing*; and *Elementary School*.

#### Project Site

The proposed project site was not designated for development in the 2003 LRDP EIR and consequently, the LRDP EIR did not identify the project site as part of the approximately 745 acres for anticipated conversion from agricultural uses to non-agricultural uses. The University desires to develop the project site at this time but seeks to maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land identified for conversion from agricultural to non-agricultural uses.

The 2003 LRDP indicates that the *Teaching and Research Fields* land use designation provides for uses related to teaching, research and support of academic programs primarily in the plant and animal sciences. The 2003 LRDP states that *Teaching and Research Fields* are typically free from large buildings but may include agriculture-related buildings and facilities on sites smaller than two acres.

The 2003 LRDP indicates that the *Support* land use designation provides for uses related to support services and facilities required to serve the campus on a daily basis. The designation includes unique land uses such as the University Airport. The 2003 LRDP states that UC Davis maintains and operates many of its own physical support service systems independent of local jurisdictions. This assigns the campus a higher degree of control over the operation of these systems, and places UC Davis more firmly in an environmental systems management role than many other UC campuses. Facilities in other UC Davis

areas designated for *Support* include the campus landfill, operations and maintenance areas, heating and cooling facilities, the electrical substation, water and wastewater facilities, and fleet services.

### 7.10.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a land use and planning impact significant if growth under the 2003 LRDP would:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

An additional standard from the CEQA Guidelines' Environmental Checklist ("a" in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.10.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 related to land use and planning are evaluated in Section 4.9 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. The 2003 LRDP EIR did not identify any potentially significant or significant land use and planning impacts. The less than significant land use and planning impacts identified in the 2003 LRDP EIR do not require mitigation.

### 7.10.4 Environmental Checklist and Discussion

LAND USE & PLANNING		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) The proposed project would have no potential to physically divide an established community. No impact would occur and no additional analysis is required.

b,d) The applicable land use plan for the campus is the 2003 LRDP. As shown on Figure 3, the 2003 LRDP designates the project site for *Teaching and Research Fields*. The proposed solar power

development would not be consistent with the LRDP land use designation. The proposed project includes a proposal to amend the 2003 LRDP land use designation at the South Campus 70-acre site to *Support*.

The proposed project site was not designated for development in the 2003 LRDP EIR and consequently, the LRDP EIR did not identify the project site as part of the approximately 745 acres for anticipated conversion from agricultural uses to non-agricultural uses. The University intends to develop the project site at this time but maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to designate the 70-acre project site for development and re-designate 71.1 acres of other campus land from a designation for future development to a land use designation for on-going agricultural uses.

To amend the LRDP, the campus would change the designation on the project site from *Teaching and Research Fields* to *Support*. Land surrounding the project site would be continue as agricultural land and the project development would not interfere with future farming of these surrounding lands. On the surrounding lands, equipment access, water supply, and parcel sizes after project development would remain adequate for continued farming operations.

In the South Campus, as shown in Figure 4, the campus would re-designate 61.2 acres of land currently shown as *Support* and *Academic and Administrative* to *Teaching and Research Fields*. In the West Campus, 9.9 acres would be designated as *Teaching and Research Fields* rather than the existing designations of *Support* and *Academic and Administrative*. In total, the project site would be 70 acres designated as *Support* and 71.1 acres of South Campus and West Campus land would be designated as *Teaching and Research Fields*. With the amended land uses, the proposed project would be consistent with the 2003 LRDP for both the land uses at the solar project site and with the overall amount of 745 acres of land anticipated for agricultural land conversion to developed uses. With amendment for 71.1 acres, the proposed project would be consistent with the LRDP. The potential impact would be less-than-significant.

Uses surrounding the project solar project site are expected to continue after completion of the proposed project. The project boundary would be fenced and no site activities would extend onto adjacent lands. The surrounding agricultural activities are planned to continue. The proposed project would not be incompatible with surrounding or planned land uses. The potential impact would be less-than-significant.

- c) The campus does not fall within the boundaries of, nor is it adjacent to, an adopted regional HCP or NCCP. The campus has implemented two low effects HCPs for VELB at Russell Ranch. The project is located on the South Campus and includes redesignation of land on the West Campus but would have no effect on the Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP. No impact would occur.

## 7.11 MINERAL RESOURCES

### 7.11.1 Background

Section 4.6, Geology, Soils, and Seismicity, of the 2003 LRDP EIR briefly addresses mineral resources issues. The 2003 LRDP EIR concludes that development on campus would not impede extraction or result in the loss of availability of mineral resources.

Sand and gravel are important mineral resources in the region (CDOC 2000). However, natural gas is the only known or potential mineral resource that has been identified on campus. Natural gas can be extracted at wells placed considerable distances from deposits. No other known or potential mineral resources have been identified on the UC Davis campus. Therefore, development on campus does not impede extraction or result in the loss of availability of mineral resources.

### 7.11.2 2003 LRDP EIR

Because development on campus would not impede extraction or result in the loss of availability of mineral resources, the 2003 LRDP EIR did not identify any standards of significance, impacts, or mitigation measures associated with mineral resources. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR.

### 7.11.3 Environmental Checklist and Discussion

<b>MINERAL RESOURCES</b>		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a, b) Natural gas is the only known or potential mineral resource that has been identified on campus. Natural gas can be extracted at wells placed considerable distances from deposits. Therefore, development on campus would not impede extraction or result in the loss of availability of a known mineral resource. No impact would occur and no further analysis is required.

## 7.12 NOISE

### 7.12.1 Background

Section 4.10 of the 2003 LRDP EIR addresses the noise effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.10 of the 2003 LRDP EIR.

#### Campus

The primary noise source in the vicinity of the campus is vehicular traffic using I-80, SR 113, and local roads. Other sources of noise include occasional aircraft over-flights associated with the University Airport located on the west campus and another small airport in the vicinity, agricultural activities, railroads, and landscaping activities. Land use surrounding the campus is primarily agricultural, with residential, commercial, and other uses concentrated along the northern and eastern boundaries of the main campus.

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB), and the decibel scale adjusted for A-weighting (dBA) is a special frequency-dependent rating scale that relates to the frequency sensitivity of the human ear. Community noise usually consists of a base of steady “ambient” noise that is the sum of many distant and indistinguishable noise sources, as well as more distinct sounds from individual local sources. A number of noise descriptors are used to analyze the effects of community noise on people, including the following:

- $L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise, measured during a prescribed period, typically one hour.
- $L_{dn}$ , the Day-Night Average Sound Level, is a 24-hour-average  $L_{eq}$  with a 10 dBA “penalty” added to noise occurring during the hours of 10:00 PM to 7:00 AM to account for greater nocturnal noise sensitivity.
- CNEL, the Community Noise Equivalent Level, is a 24-hour-average  $L_{eq}$  with a “penalty” of 5 dB added to evening noise occurring between 7:00 PM and 10:00 PM, and a “penalty” of 10 dB added to nighttime noise occurring between 10:00 PM and 7:00 AM.

Noise monitoring over a 24-hour period in 2003 at sites located in urban areas on and adjacent to the campus (including areas next to freeways, roads, residences, and academic buildings) reflected CNEL levels ranging from 63 to 65 dBA CNEL. Ambient noise levels measured over a short period at various urban sites on campus varied from 49 to 63 dBA  $L_{eq}$ .

#### Project Site

The project site is a quiet agricultural field with no current noise sources except during agricultural operations when one or more tractors are on the site. Nearby uses (agricultural fields and the levee access road) do not produce significant noise and are not noise sensitive uses.

### 7.12.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a noise impact significant if growth under the 2003 LRDP would result in the following:

- Exposure of persons to or generation of noise levels in excess of levels set forth in Table 4.10-3 of the 2003 LRDP EIR and reproduced below.

Table 7.11.2: Thresholds of Significance for Noise Evaluations

Noise Source <sup>a</sup>	Criterion Noise Level <sup>b</sup>	Substantial Increase in Noise Level <sup>b</sup>
Road Traffic and Other Long-Term Sources	65 dBA CNEL	>=3 dBA if CNEL w/project is >= 65 dBA >=5 dBA if CNEL w/project is 50–64 dBA >=10 dBA if CNEL w/project is < 50 dBA
Stadium (Periodic, intermittent)	70 dBA L <sub>eq(h)</sub> <sup>c</sup> Daytime (7:00 a-7:00 p) 70 dBA L <sub>eq(h)</sub> Evening (7:00 p-11:00 p) 65 dBA L <sub>eq(h)</sub> Nighttime (11:00 p-7:00 a)	Not Applicable
Railroad	Within 750 feet of railroad line <sup>d</sup>	
Aircraft	65 dBA CNEL	>=1.5 dBA if CNEL w/project is >= 65 dBA >=3 dBA if CNEL w/project is 60–64 dBA >=5 dBA if CNEL w/project is < 60 dBA
Construction (temporary)	80 dBA L <sub>eq(8h)</sub> <sup>e</sup> daytime (7:00 a-7:00 p) 80 dBA L <sub>eq(8h)</sub> evening (7:00 p-11:00 p) 70 dBA L <sub>eq(8h)</sub> nighttime (11:00 p-7:00 a)	Not Applicable

Source: 2003 LRDP EIR

<sup>a</sup> The 2003 LRDP would not substantially increase rail activity; therefore, a threshold of significance for rail noise is not included in this table.

<sup>b</sup> At noise-sensitive land use unless otherwise noted. Noise-sensitive land uses include residential and institutional land uses.

<sup>c</sup> L<sub>eq(h)</sub> is an average measurement over a one-hour period.

<sup>d</sup> Screening analysis distance criterion from FTA 1995.

<sup>e</sup> L<sub>eq(8h)</sub> is an average measurement over an eight-hour period.

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

### 7.12.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 related to noise are evaluated in Section 4.10 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and no significant impacts identified in the 2003 LRDP EIR related to noise are relevant to the proposed project.



## 7.12.4 Environmental Checklist and Discussion

<b>NOISE</b>					
Would the project...	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) The proposed solar panels would generate noise and would not exceed noise standards. No impact would occur.

b,d) The proposed project would temporarily increase noise levels during construction. The noise from construction equipment at the project site would be similar in character to noise from agricultural tractor operations but would be slightly elevated and would occur for an extended period. Rather than the existing 1 to 2 pieces of equipment at the project site, the proposed project would introduce 4-5 pieces of equipment during the estimated 4 month construction period. The elevated noise levels could be noticeable at the project boundary but are not expected to be noticeable beyond approximately 400 feet from the project site. There are no receptors within 400 feet. The potential impact would be less than significant.

c) The proposed project would not permanently generate noise. No impact would occur.

e-f) The proposed project is not near an airport and will introduce no new people to the project site or to other locations on campus. No impact would occur.

## **7.13 POPULATION & HOUSING**

### **7.13.1 Background**

Section 4.11 of the 2003 LRDP EIR addresses the population and housing effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.11 of the 2003 LRDP EIR.

The on-campus population at UC Davis includes students, faculty/staff, and non-UC Davis affiliates working on campus. The current and projected campus population figures are presented in Table 1 of this Tiered Initial Study. As of 2003, approximately 80 percent of the student population and 50 percent of the employee population lived in the Davis area, and approximately 94 percent of students and 90 percent of employees lived within the three-county area of Yolo, Solano, and Sacramento counties. Outside the City of Davis, the predominant residence locations of students and employees are Woodland, West Sacramento, Winters, Dixon, Vacaville, and Fairfield (UC Davis ORMP 2003d).

Vacancy rates in the City of Davis are considered low, and housing costs in the City are generally higher than those elsewhere in the region. Since 1994, the campus has been working toward the goals of maintaining a UC Davis housing supply that can accommodate 25 percent of the on-campus enrolled students and can offer housing to all eligible freshmen. The 2003 LRDP focuses on providing additional on-campus student housing that will accommodate a total of approximately 7,800 students on the core campus (or 26 percent of the peak student enrollment through 2015-16) and an additional 3,000 students in a west campus neighborhood. The campus currently offers one faculty and staff housing area (Aggie Village), which includes 21 single-family units (17 of which have cottages) and 16 duplexes. The 2003 LRDP plans to provide an additional 500 faculty and staff housing units within the west campus neighborhood through 2015-16.

### **Project Site**

The project site is currently vacant. No housing is located or planned on or adjacent to the project site. The proposed project would add no population to the site or to other areas of the UC Davis campus.

### **7.13.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers an impact related to population and housing significant if growth under the 2003 LRDP would:

- Directly induce substantial population growth in the area by proposing new housing and employment.
- Create a demand for housing that could not be accommodated by local jurisdictions.
- Induce substantial population growth in an area indirectly (for example, through extension of roads or other infrastructure).

Additional standards from the CEQA Guidelines’ Environmental Checklist (“b” and “c” in the checklist below) was found not applicable to campus growth under the 2003 LRDP.

### 7.13.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 related to population and housing are evaluated in Section 4.11 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR.

### 7.13.4 Environmental Checklist and Discussion

POPULATION & HOUSING	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a demand for housing that cannot be accommodated by local jurisdictions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The proposed project would install solar panels in an agricultural field and would neither increase or decrease the campus or regional population. No impact would occur.
- b) The proposed project would not displace any existing housing. Therefore, no impact would occur.
- c) The proposed project would not displace substantial numbers of people. Therefore, no impact would occur.
- d) The proposed project would not increase the regional or campus population and would have no factors to create demand for housing. No impact would occur.

## 7.14 PUBLIC SERVICES

### 7.14.1 Background

Section 4.12 of the 2003 LRDP EIR addresses the public services effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.13 of the 2003 LRDP EIR.

In accordance with the CEQA Guidelines, this Public Services analysis evaluates the environmental effects associated with any physical changes required to meet increases in demand for public services, including police, fire protection, schools, and libraries. Project-level public services impacts are addressed by evaluating the effects of on-campus population growth on public services that directly serve the on-campus population (primarily UC Davis services). Cumulative public services impacts are addressed by evaluating the effects of off-campus population growth on the public services in the Cities of Davis, Dixon, Winters, and Woodland.

UC Davis provides most public services needed on campus, including fire protection, police protection, and library services. The Davis Joint Unified School District serves the City of Davis and portions of Yolo and Solano counties. These services are discussed further below:

- **Fire Protection:** The UC Davis Fire Department provides primary fire response and prevention, natural disaster response, hazardous materials incident response, and emergency medical service to the main campus. The fire department’s goal is to respond to 90 percent of campus emergency calls within 6 minutes (UC Davis Fire Department 2003). As of 2003, the UC Davis Fire Department achieves its stated standard of response (Chandler 2003).
- **Police:** In 2001-02, the UC Davis Police Department employed approximately 32 sworn officers to provide 24-hour service to the main campus and facilities owned and leased by UC Davis in the City of Davis, a service area including a campus population of approximately 36,445 people (including UC and non-UC employees, students, and dependents living in on-campus housing) (Chang 2001). Although the campus does not currently rely on any level-of-service standards, the Police Department has indicated that it would like to reach and maintain 1 sworn officer on the main campus per 1,000 members of the campus population. In 2001-02, the campus was just under this level, with approximately 0.9 sworn officers per 1,000 members of the campus population.
- **Schools:** In 2001-02 a total of approximately 8,677 students were enrolled in the DJUSD’s nine elementary schools, two junior high schools, one high school, one continuation high school, and one independent study program. The DJUSD estimates student enrollment based on a rate of 0.69 student per single-family residential unit and 0.44 student per multi-family residential unit in its service area.
- **Libraries:** UC Davis currently has four main libraries, distributed among the academic centers of the central campus, which serve students, faculty, staff, and the general public, including: Shields Library (the main campus library located centrally on the core campus), the Carlson Health Sciences Library, the Law Library, and the Physical Sciences and Engineering Library.

### Project Site

The project site is currently vacant and there are no existing or planned public service facilities (fire, police, schools or libraries) on or adjacent to the site.

### 7.14.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a public services impact significant if growth under the 2003 LRDP would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

Effects associated with recreation services are evaluated in Section 7.14, Recreation, and effects associated with the capacity of the domestic fire water system to provide adequate fire protection are evaluated in Section 7.16, Utilities.

### 7.14.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on public services are evaluated in Section 4.12 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR and no recreation mitigation measures from 2003 LRDP EIR are relevant to the proposed project.

### 7.14.4 Environmental Checklist and Discussion

<b>PUBLIC SERVICES</b>	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a, i&v) The proposed project would install solar panels in an agricultural field. Necessary public services for the project include fire protection and police protection. The project would include weed control to minimize fire hazards and would include a security fence and alarm system to minimize the need for police protection. The proposed project is expected to have the same demand for fire and police services as the existing site and would not require the expansion of fire or police facilities. No impact would occur.

## **7.15 RECREATION**

### **7.15.1 Background**

Section 4.13 of the 2003 LRDP EIR addresses the environmental effects associated with modifying recreational resources to meet campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.13 of the 2003 LRDP EIR.

UC Davis contains many park-like areas and recreation facilities. Park facilities at UC Davis range in size from small picnic and landscaped areas within campus housing areas to extensively landscaped areas in the academic core of the central campus, such as the Arboretum. Areas such as the Quad, the landscaped areas along A Street and Russell Boulevard, the Putah Creek Riparian Reserve in the west campus, and many areas within the Arboretum are used regularly by members of the UC Davis campus and visitors to the campus.

Recreation facilities on the campus include structures, bike paths, and fields used for physical education, intercollegiate athletics, intramural sports, sports clubs, and general recreation. Recreation structures include Hickey Gym, Recreation Hall, the Recreation Swimming Pool, and Recreation Lodge. In addition, two major campus recreation facilities are currently under construction: the Activities and Recreation Center and the Schaal Aquatic Center. The general public may purchase privilege cards to use some campus recreation facilities, or may join community or campus organizations that have access to some facilities.

#### **Project Site**

The project site is currently vacant and there are no existing or planned recreation facilities on or adjacent to the site.

### **7.15.2 2003 LRDP EIR Standards of Significance**

The 2003 LRDP EIR considers a recreation impact significant if growth under the 2003 LRDP would:

- Increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Propose the construction of recreation facilities or require the expansion of recreation facilities, which might have an adverse physical effect on the environment.

### **7.15.3 2003 LRDP EIR Impacts and Mitigation Measures**

Impacts of campus growth under the 2003 LRDP through 2015-16 associated with recreation are evaluated in Section 4.13 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. No.....

### 7.15.4 Environmental Checklist and Discussion

<b>RECREATION</b>	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) The proposed solar panels would be installed on an agricultural field. The project would have no effect on recreation resources and would not generate additional use of recreational facilities. No impact would occur.

## **7.16 TRANSPORTATION, CIRCULATION, & PARKING**

### **7.16.1 Background**

Section 4.14 of the 2003 LRDP EIR addresses the transportation, circulation, and parking effects of campus growth under the 2003 LRDP. The following discussion summarizes information presented in the ‘Setting’ subsection of Section 4.14 of the 2003 LRDP EIR.

#### **Campus**

UC Davis is served by six main campus roadways or “gateways” that connect the campus to residential and downtown areas in the City of Davis, and two gateways that provide direct access to regional freeways (I-80 and SR 113). Circulation within the central campus is accommodated primarily by the campus “loop” roadway system, which includes Russell Boulevard, A Street, New and Old Davis Roads, California Avenue, and La Rue Road. Other roadways within the core campus area are restricted to transit and emergency vehicles, bicyclists, and pedestrians. Primary vehicular access to the south campus is provided by Old Davis Road, to the west campus by Hutchison Drive, and to Russell Ranch by Russell Boulevard.

Level of service (LOS) is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned to roadway intersections. These grades represent the comfort and convenience associated with driving from the driver’s perspective. To assess the worst-case traffic conditions, LOS is measured during morning (7 to 9 AM) and afternoon (4 to 6 PM) peak commute times. The LOS of campus roadways varies. Monitoring of campus intersections during peak hours in Fall 2001 and Fall 2002 found that the Hutchison Drive/Health Sciences Drive intersection (with LOS E during the PM peak hour) was the only study intersection to operate below the campus’ operation standard (standards are identified in the following section). The campus is planning on installing a traffic signal at this intersection by fall 2006.

Bicycles are a major component of the transportation system at UC Davis and in the City of Davis. UC Davis has an extensive system of bicycle paths, which makes bicycles a popular form of travel on campus. The UC Davis Bicycle Plan (UC Davis 2002) estimates that 15,000 to 18,000 bicycles travel to the campus on a typical weekday during the Fall and Spring sessions when the weather is good.

Parking at UC Davis is provided by a combination of surface lots and parking structures. UC Davis Transportation and Parking Services (TAPS) oversees parking services on campus including selling parking passes, providing traffic control at special events, ticketing violators, and measuring parking utilization throughout campus on a quarterly basis. Approximately 11,500 parking spaces were provided on campus as in Fall of 2008.

#### **Project Site**

The proposed project would take place on up to two agricultural fields. Access to the sites would be from University owned service roads.

### **7.16.2 2003 LRDP EIR Standards of Significance**

The following significance criteria were used to identify significant transportation and circulation impacts. For the purpose of this analysis, potentially significant traffic impacts are defined when the project causes any of the following:



- A conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

For intersections at UC Davis; pursuant to the 2003 LRDP EIR, LOS D is the minimum acceptable LOS.

- For signalized intersections, deteriorated peak hour intersection operations from an acceptable level (LOS D) to an unacceptable level (LOS E or worse).
- For unsignalized intersections, deterioration of the average of all movements from an acceptable level (LOS D) to an unacceptable level and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant.
- For signalized and unsignalized intersections that operate unacceptably without the project, the addition of 10 or more vehicles to the intersection's volume.

For intersections in the City of Davis, pursuant to the City of Davis General Plan, LOS E is the minimum acceptable LOS for the City of Davis, LOS F is acceptable for the City for the Davis Core Area (LOS F is acceptable and considered a "congested condition" for Core Area intersections); all City of Davis intersections analyzed in this study are Core Area intersections.

- For signalized intersections, exacerbated unacceptable (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour) operations by increasing an intersection's average delay by five seconds or more.
- For Core Area intersections that operate at congested conditions (LOS F in the weekday AM or PM peak hour or the Saturday peak hour), exacerbate operations by increasing an intersection's average delay by five seconds or more.
- For unsignalized intersections that operate unacceptably (LOS F in the weekday AM or PM peak hour; LOS E or F in the Saturday peak hour; and meet MUTCD's peak hour signal warrant without the project), exacerbate operations by increasing the overall intersection's volume by more than one percent.
- For unsignalized intersections that operate unacceptably but do not meet MUTCD's peak hour signal warrant without the project, add sufficient volume to meet the peak hour signal warrant.

These significance criteria for City of Davis intersections are consistent with those applied in the Second Street Crossing (Target Store) Project Draft Environmental Impact Report (SCH# 2005062142) and the Covell Village Project Draft Program Level EIR (SCH# 2004062089).

- A conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways.
- A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increased hazards due to a design feature (e.g., sharp curves or dangerous intersections) incompatible uses (e.g., farm equipment).
- Inadequate emergency access.

- A conflicts with applicable adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

### 7.16.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on traffic, circulation, and parking are evaluated in Section 4.14 of the 2003 LRDP EIR. Impacts of campus growth under the 2003 LRDP through 2015-16 on aesthetics are evaluated in Section 4.1 of the 2003 LRDP EIR. The proposed project is within the scope of analysis in the 2003 LRDP EIR and no significant impacts identified in the 2003 LRDP EIR related to aesthetics are relevant to the proposed project.

### 7.16.4 Environmental Checklist and Discussion

<b>TRANSPORTATION, CIRCULATION, &amp; PARKING</b>	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
<b>Would the project...</b>					
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards established by the county congestion management agency for designated roads and highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a--f) The proposed project would take place on an agricultural field approximately ¼ mile from the nearest roadway. The project would have no effect on traffic operations and would not cause congestion on local roads or at local intersections. Similarly, the project would have no effect on air traffic patterns and would not create increased hazards due to design features. Emergency access would not be disrupted by the proposed project because the project would not alter any roads or routes used by emergency vehicles. The project would have no effect on bike, transit, or pedestrian planning. No impact would occur.

## 7.17 UTILITIES & SERVICE SYSTEMS

### 7.17.1 Background

Section 4.15 of the 2003 LRDP EIR addresses the effects of campus growth on utility systems under the 2003 LRDP. The campus provides the following utility and service systems to campus projects:

- **Domestic/Fire Water**
- **Wastewater**
- **Electricity**
- **Utility Water**
- **Solid Waste**
- **Natural Gas**
- **Agricultural Water**
- **Chilled Water**
- **Telecommunications**
- **Storm Drainage**
- **Steam**

The campus is required to comply with a UC Policy on Sustainable Practices. The policy encourages principles of energy efficiency and sustainability in the planning, financing, design, construction, renewal, maintenance, operation, space management, facilities utilization, and decommissioning of facilities and infrastructure to the extent possible, consistent with budgetary constraints and regulatory and programmatic requirements. In addition, the policy aims to minimize increased use of non-renewable energy by encouraging programs addressing energy efficiency, local renewable power and green power purchases from the electrical grid (UC Office of the President 2011).

### Project Site

The proposed project would use campus utilities and service systems including: domestic water, electricity, and telecommunications. These utilities and service systems are discussed below:

- **Domestic Water:** Potable water for use rinsing the panels could be provided by the campus domestic water system.
- **Electricity:** The main campus currently receives electricity from the Western Area Power Administration (WAPA) through PG&E transmission lines at the campus substation located south of I-80. The campus electrical system has an available capacity of 64.4 megawatts (MW). Annual electrical usage on campus in 2011-12 was approximately 235 million kilowatt-hours (KWh) per year. The project would not require additional electricity but would instead generate 7 to 14 MW of power during peak production periods. A new overhead electricity line would connect the proposed solar panels with the campus electrical substation.

### 7.17.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a utilities and service systems impact significant if growth under the 2003 LRDP would:

- Exceed the Central Valley Regional Water Quality Control Board's wastewater treatment requirements.
- Require or result in the construction or expansion of water or wastewater treatment facilities, which would cause significant environmental effects.
- Require or result in the construction or expansion of storm water drainage facilities, which could cause significant environmental effects.
- Result in the need for new or expanded water supply entitlements.

- Exceed available wastewater treatment capacity.
- Be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs.
- Fail to comply with applicable federal, state, and local statutes and regulations related to solid waste.
- Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts.
- Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts.

### 7.17.3 2003 LRDP EIR Impacts and Mitigation Measures

Impacts of campus growth under the 2003 LRDP through 2015-16 on utilities and service systems are evaluated in Section 4.15 of the 2003 LRDP EIR. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR and no impacts from the 2003 LRDP EIR are relevant to the proposed project.

### 7.17.4 Environmental Checklist and Discussion

UTILITIES & SERVICE SYSTEMS		Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...						
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- |    |   |                          |                          |                          |                                     |                                     |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| h) | Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| i) | Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
- 

a) The proposed project would install solar panels that would produce no wastewater. No connection would be provided to the campus wastewater treatment plant and the project would not exceed the wastewater treatment requirements of the Regional Water Quality Control Board. No impact would occur.

**b) Water Facilities**

The proposed project would utilize a small amount of water for rinsing the solar panels during periodic maintenance that is expected to occur 3 to 4 times per year. The rinse water will be obtained from the campus domestic water system or from the irrigation well on the project site and would be substantially less than the amount of water currently used to irrigate the field for agricultural purposes. The project would not connect to campus wastewater treatment plant. No impact would occur.

- c) Stormwater on the project site would continue to infiltrate through the soil and evaporate from the site. No modifications to stormwater facilities will be included in the proposed project and no effects to stormwater drainage would occur. No impact would occur.
- d) The proposed project would utilize a small amount of water for rinsing the solar panels during periodic maintenance that is expected to occur 3 to 4 times per year. The rinse water will be obtained from the campus domestic water system or from the irrigation well on the project site and would be substantially less than the amount of water currently used to irrigate the field for agricultural purposes. No new water supplies would be needed. No impact would occur.
- e) The proposed project would result in no wastewater. No impact would occur.
- f) The project would produce no solid waste. No impact would occur.
- g) The project would produce no atypical waste. No impact would occur.
- h) The project would require no changes to natural gas, chilled water, or steam facilities. The project would construct additional facilities to generate electricity and would connect to the campus electrical system in order to deliver the newly produced electricity. No other physical changes or construction would be needed to complete the project. No impact would occur.
- i) Operational data from the solar panels will be transmitted wirelessly to campus telecommunication facilities. No telecommunication facilities would need to be expanded. No impact would occur.

## 7.18 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant with Project-level Mitigation	Impact adequately addressed in 2003 LRDP EIR	Less than Significant Impact	No Impact
Would the project...					
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) The proposed project would not significantly affect fish or wildlife habitat, nor would it eliminate examples of California history or prehistory. Cumulative regional impacts could be significant, but mitigation measures to reduce these potentially significant impacts to less-than-significant levels are not available or are not within the jurisdiction of the University of California to enforce and monitor. These impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

b,c) The proposed project would not contribute to significant unavoidable impacts identified in the 2003 LRDP EIR related to: hydrology and water quality, noise, population and housing, public services, recreation, transportation/circulation, and utilities and service systems. It would incrementally contribute to, but would not exceed, significant and unavoidable impacts related to: aesthetics, agriculture resources, air quality, biological resources, cultural resources. These impacts were adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information has become available since certification of the 2003 LRDP EIR that would alter this previous analysis.

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## **9 AGENCIES & PERSONS CONSULTED**

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**APPENDIX A  
NEGATIVE DECLARATION**

## NEGATIVE DECLARATION

**Lead Agency:** University of California

**Project Proponent:** University of California, Davis

**Project Location:** Solano County, east of Old Davis Road and Yolo County, west of County Road 98 at UC Davis

**Project Description:** UC Davis proposes to construct a new solar photovoltaic facility for electricity generation. The proposed Large Solar Power Plant (LSPP) project is planned for up to 70 acres and would help the campus meet demand for electricity and achieve goals for reducing greenhouse gas emissions. The site, on the South Campus in Solano County, is south of Interstate 80 and approximately ½ mile east of Old Davis Road along the north levee of Putah Creek on land used for agricultural production. The solar panels would be installed in rows to maximize solar efficiency while allowing maintenance access on paths between the rows. The installation would include concrete footings for some accessory equipment and piers driven directly into the ground would support the solar panels approximately one to five feet above the ground.

The proposed project would be constructed and operated by a third-party developer through a power purchase agreement which would allow installation of solar facilities on the 70 acres in one or more phases to provide a solar project with capacity of 7 to 14 megawatts (MW). Electricity generation from the project would provide up to 11% of the current total campus yearly demand for electricity and would reduce campus greenhouse gas emissions.

The proposed site is designated as *Teaching and Research Fields* for agricultural uses in the UC Davis 2003 Long Range Development Plan (LRDP). The proposed electricity generation project would not be consistent with the *Teaching and Research Fields* designation. In conjunction with reviewing the environmental effects of the project, the University would amend the 2003 LRDP land use designation to a *Support* land use designation so that the proposed electricity generation activities would be consistent with the amended LRDP.

The 2003 LRDP anticipated development projects at UC Davis would convert approximately 745 acres of agricultural land to developed uses by 2015-16. The University desires maintain the 2003 LRDP anticipated amount of agricultural land conversion at approximately 745 acres and not increase the amount land previously identified for conversion from agricultural to non-agricultural uses. To maintain the previously identified 745 acres, the University would amend the 2003 LRDP to re-designate other campus land (primarily on the South Campus and West Campus) from a designation for future development to a land use designation for on-going agricultural uses.

Water for washing the panels would be provided to the site using water trucks that would refill using either the existing well at the project site or a campus water main. New overhead electricity lines and support poles would be used to transmit the new electricity from the project site into the campus electrical system at the campus electrical substation approximately ½ mile north of the project site. In order to accept all of the electricity generated from the solar panels, minor equipment upgrades to electrical equipment at the campus electrical substation may be needed.

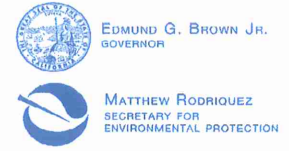
- Mitigation Measure:** No project-specific mitigation measures are identified for the proposed project.
- Reference:** This Negative Declaration incorporates by reference in their entirety the text of the Tiered Initial Study prepared for the project, the 2003 LRDP, and the 2003 LRDP EIR.
- Determination:** In accordance with CEQA, a Draft Tiered Initial Study has been prepared by UC Davis that evaluates the environmental effects of the proposed project. On the basis of the project's Draft Tiered Initial Study the campus found that the proposed project could not have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and no new mitigation measures, other than those previously identified in the 2003 LRDP EIR, are required. A negative declaration will be prepared.
- Public Review:** In accordance with Section 15073 of the CEQA Guidelines, the Draft Tiered Initial Study for the project was circulated for public and agency review from July 12, 2012 to August 12, 2013. During the public review, comment letters were received from the Central Valley Regional Water Quality Control Board, the Central Valley Flood Protection Board, and the Yocha Dehe Wintun Nation. Comment letters received during the review period and responses to these comments are presented in Appendix B of the Tiered Initial Study.

**APPENDIX B**  
**COMMENTS AND RESPONSES TO COMMENTS**

## **COMMENTS AND RESPONSES TO COMMENTS**

### **LETTERS RECEIVED:**

Letter 1: Central Valley Regional Water Quality Control Board  
Letter 2: Central Valley Flood Protection Board  
Letter 3: Yocha Dehe Wintun Nation



EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## Central Valley Regional Water Quality Control Board

29 July 2013

Sid England  
University of California  
Environmental Stewardship and Sustainability  
1 Shields Avenue  
Davis, CA 95616

CERTIFIED MAIL  
7012 1640 0000 4750 8999

### **COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT NEGATIVE DECLARATION, UC DAVIS LARGE SOLAR POWER PLANT PROJECT, SCH NO. 2013072025, YOLO COUNTY**

Pursuant to the State Clearinghouse's 12 July 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Negative Declaration* for the UC Davis Large Solar Power Plant Project, located in Yolo County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

#### **Construction Storm Water General Permit**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml).



### **Phase I and II Municipal Separate Storm Sewer System (MS4) Permits<sup>1</sup>**

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/municipal\\_permits/](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/).

### **Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/industrial\\_general\\_permits/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml).

### **Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

### **Clean Water Act Section 401 Permit – Water Quality Certification**

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

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<sup>1</sup> Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

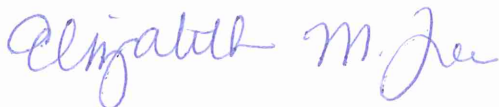
**Waste Discharge Requirements**

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/help/business\\_help/permit2.shtml](http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml).

If you have questions regarding these comments, please contact me at (916) 464-4684 or [tcleak@waterboards.ca.gov](mailto:tcleak@waterboards.ca.gov).



for

Trevor Cleak  
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

## **Response to Letter 1**

The July 29, 2013 letter from the Central Valley Regional Water Quality Control Board lists potential permits that would be needed for the project in relation to water quality control. Details of the on-going UC Davis compliance with water quality requirements is provided in Section 7.9 of the Initial Study. Permits needed for the project would be obtained prior to project implementation.

The comment letter raised no new environmental issues and no new environmental impacts are expected that were not previously addressed in the Initial Study.

**CENTRAL VALLEY FLOOD PROTECTION BOARD**

3310 El Camino Ave., Rm. 151  
SACRAMENTO, CA 95821  
(916) 574-0609 FAX: (916) 574-0682  
PERMITS: (916) 574-2380 FAX: (916) 574-0682



July 31, 2013

Mr. Sid England  
University of California, Davis  
One Shields Avenue  
Davis, California 95616

Subject: UC Davis Large Solar Power Plant  
SCH Number: 2013072025  
Document Type: Negative Declaration

Dear Mr. England:

Staff of the Central Valley Flood Protection Board (Board) has reviewed the subject document and provides the following comments:

The proposed project is located adjacent to or within the levee of South Fork Putah Creek which is under the jurisdiction of the Central Valley Flood Protection Board. The Board is required to enforce standards for the construction, maintenance, and protection of adopted flood control plans that will protect public lands from floods. The jurisdiction of the Board includes the Central Valley, including all tributaries and distributaries of the Sacramento River, the San Joaquin River, and designated floodways (Title 23 California Code of Regulations (CCR), Section 2).

A Board permit is required prior to starting the work within the Board's jurisdiction for the following:

- The placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (CCR Section 6);
- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (CCR Section 6);
- Vegetation plantings will require the submission of detailed design drawings; identification of vegetation type; plant and tree names (i.e. common name and scientific name); total number of each type of plant and tree; planting spacing and irrigation method that will be utilized within the project area; a complete vegetative management plan for maintenance to prevent the interference with flood control, levee maintenance, inspection, and flood fight procedures (CCR Section 131).

Vegetation requirements in accordance with Title 23, Section 131 (c) states "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures."

Mr. Sid England  
July 31, 2013  
Page 2 of 2

The accumulation and establishment of woody vegetation that is not managed has a negative impact on channel capacity and increases the potential for levee over-topping. When a channel develops vegetation that then becomes habitat for wildlife, maintenance to initial baseline conditions becomes more difficult as the removal of vegetative growth is subject to federal and State agency requirements for on-site mitigation within the floodway. The project should include mitigation measures to avoid decreasing floodway channel capacity.

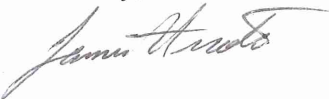
Hydraulic Impacts - Hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Off-site mitigation outside of the State Plan of Flood Control should be used when mitigating for vegetation removed within the project location.

The permit application and Title 23 CCR can be found on the Central Valley Flood Protection Board's website at <http://www.cvfpb.ca.gov/>. Contact your local, federal and State agencies, as other permits may apply.

The Board's jurisdiction, including all tributaries and distributaries of the Sacramento River and the San Joaquin River, and designated floodways can be viewed on the Central Valley Flood Protection Board's website at <http://gis.bam.water.ca.gov/bam/>.

If you have any questions, please contact me by phone at (916) 574-0651, or via e-mail at [jherota@water.ca.gov](mailto:jherota@water.ca.gov).

Sincerely,



James Herota  
Staff Environmental Scientist  
Projects and Environmental Branch

cc: Governor's Office of Planning and Research  
State Clearinghouse  
1400 Tenth Street, Room 121  
Sacramento, California 95814

## **Response to Letter 2**

The July 31, 2013 letter from the Central Valley Flood Protection Board lists potential permits that would be needed for the project in relation to the nearby levee. The proposed project includes no construction activities or planting activities on the nearby levee and no impacts are expected to the levee. The levee would not be affected by the proposed project and no permits from the Central Valley Regional Flood Protection Board are anticipated in relation to the proposed project.

The comment letter raised no new environmental issues and no new environmental impacts are expected that were not previously addressed in the Initial Study.





**Tribal Council**

July 26<sup>th</sup>, 2013

Marshall McKay  
*Chairman*

James Kinter  
*Secretary*

Anthony Roberts  
*Treasurer*

Mia Durham  
*Member*

Matthew Lowell, Jr.  
*Member*

Sid England  
436 Mrak Hall  
University of California  
One Shields Avenue  
Davis, CA 95616

RE: UC Davis Large Solar Power Plant Project

Dear Mr. England:

Thank you for your project notification letter dated, July 12, 2013, regarding cultural information on or near the proposed UC Davis Large Solar Power Plant Project, Davis, Yolo County, CA. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, the Tribe has concerns that the project could impact undiscovered archaeological deposits. Additionally, Yocha Dehe Wintun Nation requests a site visit to the project area to evaluate our cultural concerns.

Please contact the following individual to coordinate a date and time for the site visit.

Mr. James Sarmiento  
Cultural Resources Manager  
Yocha Dehe Wintun Nation  
Office: (530) 723-0452, Email: [jsarmiento@yochadehe-nsn.gov](mailto:jsarmiento@yochadehe-nsn.gov)

Please refer to identification number YD-07222013-02 in any correspondences concerning this project.

Thank you for providing us with this notice and the opportunity to comment.

Marshall McKay  
Tribal Chairman

### Response to Letter 3

The July 26, 2013 letter from the Yocha Dehe Wintun Nation requested a site visit to the project area to evaluate cultural resources. A site visit was provided on August 12, 2013 for James Sarmiento, the Cultural Resources Manager for the Yocha Dehe Wintun Nation. Mr. Sarmiento visited the site accompanied by UC Davis representatives. At the conclusion of the site visit, Mr. Sarmiento indicated that no further consultation would be needed in relation to the proposed project.

The comment letter and August 12<sup>th</sup> site visit raised no new environmental issues and no new environmental impacts are expected that were not previously addressed in the Initial Study.