

UC DAVIS
PHYSICAL SCIENCES EXPANSION
AND
SERVICE UNIT PARK

Tiered Initial Study and
Mitigated Negative Declaration

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

Prepared By:

OFFICE OF RESOURCE MANAGEMENT AND PLANNING

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1 PROJECT INFORMATION

Project title:

Physical Sciences Expansion and Service Unit Park

Project location:

University of California, Davis
Yolo County

Lead agency's name and address:

Office of Resource Management and Planning
University of California
One Shields Avenue
376 Mrak Hall
Davis, CA 95616-8678

Contact person:

A. Sidney England, Director of Environmental Planning, 530-752-2432

Project sponsor's name and address:

See lead agency.

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 will guide 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 Office of Resource Management and Planning in 376 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
- Online at <http://www.ormp.ucdavis.edu/vironreview/>

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 in 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 project's consistency with existing, applicable land use controls, and name of persons who prepared the study.

2.2 TIERING PROCESS

This environmental analysis is a Tiered Initial Study for the proposed Physical Sciences Expansion and Service Unit Park (referred to as the "proposed project" throughout this document). This environmental analysis 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 will guide 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. The proposed project is an element of the growth that was anticipated in the 2003 LRDP and evaluated in the 2003 LRDP EIR.

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]).

Accordingly, the tiering of the environmental analysis for the proposed project allows this Tiered Initial Study to 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.

The purpose of this Tiered Initial Study is to 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 form in Section 6 of this document and based on the analysis contained in this Tiered 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 are not sufficiently addressed by the 2003 LRDP EIR. The analysis contained in this Tiered Initial Study concludes that the proposed project would result in the following categories of impacts, depending on the environmental issue involved: no impact; less-than-significant impact; less-than-significant impact with the implementation of 2003 LRDP EIR or project-specific mitigation measures; or contribution to a significant and unavoidable impact that was adequately analyzed in the 2003 LRDP EIR for which no new mitigation measures are available and no new analysis is proposed. The project would result in one new potentially significant traffic impact that was not previously identified in the 2003 LRDP EIR, but project-specific mitigation measures would reduce these impacts to less-than-significant levels. Therefore, preparation of a Mitigated Negative Declaration is appropriate (the Proposed Mitigated Negative Declaration is presented in Appendix A).

This Initial Study concludes that most 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. The appropriate reference to the LRDP Mitigation Monitoring Program will also be made. 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 the LRDP mitigation measures.

Since none of the conditions described in CEQA or the CEQA Guidelines calling for preparation of a subsequent or supplemental EIR have occurred, this Tiered Initial Study includes only minor technical changes or additions to the analysis set forth in the 2003 LRDP EIR, and it does not raise important new issues about the significant effects on the environment analyzed in the 2003 LRDP EIR.

2.3 PUBLIC AND AGENCY REVIEW

The Draft Tiered Initial Study was circulated for public and agency review from January 14 to February 14, 2005. Copies of this document, the 2003 LRDP, and the 2003 LRDP EIR were available for review at the following locations:

- UC Davis Office of Resource Management and Planning in 376 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
- Online at <http://www.ormp.ucdavis.edu/environreview/>

Comments on the Draft Tiered Initial Study were required by 5 PM on February 14, 2005 and could have been e-mailed to environreview@ucdavis.edu or sent to:

John A. Meyer
Vice Chancellor - Resource Management and Planning
University of California
One Shields Avenue
376 Mrak Hall
Davis, CA 95616

Comments received are presented in Appendix C, along with responses to each comment.

2.4 PROJECT APPROVALS

As the 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 the proposed land use change for the Service Unit Park and design approval of both the proposed Service Unit Park and the Physical Sciences Expansion between March and August of 2005.

2.5 ORGANIZATION OF THE TIERED INITIAL STUDY

This Tiered 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 Tiered 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 Tiered 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 and relevant impacts and mitigation measures from the 2003 LRDP EIR, and an explanation of all checklist answers.

Section 8 – Fish & Game Determination: indicates whether the project has the potential to affect wildlife, requiring a filing fee.

Section 9 – References: lists references used in the preparation of this document.

Section 10 – Agencies and Persons Consulted: provides the names of individuals contacted in preparation of this document.

Section 11 – Report Preparers: lists the names of individuals involved in the preparation of this document.

Appendix A – Proposed Mitigated Negative Declaration: presents the Proposed Mitigated Negative Declaration for the project.

Appendix B – Proposed Mitigation Monitoring Plan: presents the proposed reporting or monitoring program to ensure compliance with the Project-Specific Mitigation Measures that were not previously identified in the 2003 LRDP EIR.

Appendix C – Comments and Responses to Comments: provides the comments that were received during the Initial Study public review period and responses to those comments.

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 general 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 approximately 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 field teaching and research. 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 is proposing the Physical Sciences Expansion and Service Unit Park (the project), which includes construction and operation of two new campus facilities. The proposed project would relocate existing operations and maintenance facilities from a location in the Central Campus to a new Service Unit Park in the West Campus. The new operations and maintenance facilities are needed to provide modernized space and increased area at a single consolidated location. The Central Campus location would then be demolished to provide a site for the Physical Sciences Expansion project. The Physical Sciences Expansion project would be a new stand alone academic building that would house the Department of Geology and teaching laboratory space for the Departments of Chemistry and Physics.

Elements of the Service Unit Park proposal include the construction and operation of a consolidated facility on the West Campus at UC Davis that would house service functions related to the operations and maintenance of UC Davis infrastructure such as plumbing, mechanical, and electrical operations. These uses are similar in function to a municipal corporation yard. In addition, the proposed Service Unit Park would provide facilities for specialized University services such as the campus reprographics unit, architects and engineers office, building alarm staff, shipping and receiving, mail services, and other similar services that support the administration and operation of the UC Davis campus.

The proposed 24-acre Service Unit Park would be located west of the University Airport along the west side of Hopkins Road. The project would be constructed gradually as needed to meet campus growth and to consolidate operations for approximately 750 service employees in approximately 261,000 gross square feet of building area. The first phase of the Service Unit Park would be constructed beginning as early as 2005. Upon completion, the first phase would be located on approximately 16 acres of developed area, would provide approximately 67,000 gross square feet of building area, and would be utilized by approximately 175 employees

Figure 1. Regional Location

on a daily basis. After the first phase, the remaining components of the Service Unit Park could be constructed within the next 10 to 15 years but a schedule for this future construction has not been identified. This Initial Study identifies the potential environmental effects of constructing the entire 24-acre Service Unit Park.

The proposed Physical Sciences Expansion project includes the construction and operation of a new academic building that would provide approximately 52,000 assignable square feet (asf¹) (89,000 gross square feet (gsf)). The Physical Sciences Expansion building would be located in an area north of the University Arboretum, east of California Avenue, south of the existing Physics/Geology Building, and west of King Hall, the site of the UC Davis School of Law.

The Physical Sciences Expansion facility would house the entire Department of Geology, plus class laboratory space for the Departments of Chemistry and Physics. The project would provide new instruction and research space to meet critical campus needs resulting from increased enrollment and faculty research. It would provide teaching laboratories, academic offices, research laboratories, laboratory support facilities, and departmental administrative office space to support expansion of the physical sciences. The Physical Sciences Expansion project would allow reorganization of released space in four buildings to meet critical research and academic support space needs for the physical sciences, responding to a projected enrollment increase of 13 percent between 2001-02 and 2010-11. Existing class laboratory space would be converted to research space or demolished. Existing Geology departmental space would be converted to Physics departmental, instructional and research space providing essential facilities for existing and new initiatives in Physics. Additional details regarding the Physical Sciences Expansion building and the spaces that would be converted to other uses as a result of the Physical Sciences Expansion can be found in Section 3.5 of this Initial Study.

3.3 PROJECT SITES

The project location for the proposed Physical Sciences Expansion site is shown in Figure 2, and the surrounding area is shown in Figure 3. The project location for the Service Unit Park is shown in Figure 4 and the surrounding area of the Service Unit Park is shown in Figure 5.

Physical Sciences Expansion

The proposed Physical Sciences Expansion facility lies in the southern portion of the Physical Sciences area of the Central Campus, on the southwestern periphery of the current Operations and Maintenance (O&M) Complex. An approximately 25,000 square feet of buildings within this portion of the O&M Complex would be demolished (and the facilities rebuilt at the proposed Service Unit Park) to make way for the Physical Sciences Expansion. The O&M Complex currently includes a series of facilities administration and trades buildings, a high-energy physics high-bay building in the southwest corner, and a building currently used for office space and human resources. The site is bordered by the Physics/Geology building to the north; Facilities Services area and Domestic Water Tower 1 to the east, the Arboretum Waterway to the south, and California Avenue and Academic Surge to the west.

¹ Gross square feet (gsf) is the total floor or surface areas of rooms in a building. Assignable square feet (asf) is the total floor or surface area of rooms that are assigned or available for assignments to an occupant or specific use, including every type of space functionally usable by an occupant. For example, lobbies, restrooms, or mechanical space to not have assignable space, and are therefore not included in asf calculations. For similar buildings, asf is significantly lower than the corresponding "rentable square feet" used to describe commercial buildings.

Figure 2. Project Location – PSE

Figure 3. Surrounding Areas – PSE- REPRODUCE IN COLOR

Figure 4. Project Location -- SUP

Figure 5. SUP – Surrounding Area – REPRODUCE IN COLOR

Nearby building construction includes the future King Hall expansion project to the east, a new Mathematical Sciences Building (currently under construction) to the west, and the Watershed Sciences building (currently under construction). The 2003 LRDP designates the site as *Academic/Administrative High Density*.

The Physical Sciences Expansion project would provide approximately 51,250 assignable square feet of new space (88,300 gsf) including 20,380 square feet of instructional laboratories and service; 2,560 square feet of special class laboratories; 17,600 square feet of research laboratories and service; 3,900 square feet of research offices; and 6,800 square feet of academic and departmental administrative offices and support space. The project also includes laboratory support space for experiment preparation, equipment and instrument management, temperature controlled rooms, archive areas, and display and storage space. The building would be three levels and would be a mix of pre-cast concrete elements and curtain wall construction. A site plan of the proposed Physical Sciences Expansion project is shown in Figure 6.

Service Unit Park

The 2003 LRDP identified that the O&M Complex and related campus facilities services functions needed to consolidate and expand in size to keep pace with the growing campus. At the same time, the LRDP identified that the current O&M Complex occupies land that has a high value for academic uses.

To accommodate the anticipated O&M expansion and conversion of the existing site to an academic use, the 2003 LRDP changed the *Support Services* designation of the currently developed O&M complex to *Academic/Administrative High Density*. The 2003 LRDP also designated land in the South Campus as *Support Services* for the relocation and consolidation of O&M functions, and other related facilities and services.

After completion of the 2003 LRDP, the campus began detailed assessments of the South Campus Service Unit Park relocation site. The detailed review included proximity needs to central campus for the Service Unit Park employees and the development costs for providing infrastructure to the South Campus Service Unit Park site. The assessments indicated that the previously identified South Campus Service Unit Park site was not financially feasible for the campus to pursue and that an alternative site would be needed.

The campus identified the currently proposed West Campus Service Unit Park site west of Hopkins Road as a potential alternative. Subsequent planning for the Service Unit Park has indicated that the Hopkins Road site would meet all project objectives and could proceed within the identified budget of the proposed project. During the 2003 LRDP planning process, the Hopkins Road site was identified as a site for a future Research Park project that could attract research partners to the UC Davis campus. As explained in additional detail in Section 4.2 of this Initial Study, the Research Park land use designation is no longer needed on the West Campus. Because the West Campus site is available for the Service Unit Park and because the West Campus site meets the site needs for the Service Unit Park, the West Campus site along Hopkins Road is proposed as the relocation site. Although the 2003 LRDP identified the land area as *Research Park Low Density* the site designation would be changed to *Support* to make the 2003 LRDP land use designation consistent with the land uses at the proposed Service Unit Park.

Figure 6. Physical Sciences Expansion Site Plan

The proposed Service Unit Park would be located on an approximately 24-acre site within the West Campus area on Hopkins Road. The site is bordered by Hopkins Road and the University Airport to the east, the Contained Research Facility and teaching and research fields to the north, the Avian Sciences Facility to the south and teaching and research fields to the west. The *Support* land use category is identified in the LRDP as land designated for facilities required to service the campus on a daily basis, including facilities for fire and police protection, supplies, water, wastewater, solid waste, electricity, communications, heating and cooling, building maintenance, hazardous waste, and vehicle maintenance/storage.

At buildout the Service Unit Park project would include the development of approximately 97,200 gsf of office and support buildings; 229,000 gsf of shop, storage, and warehouse buildings; and 5 acres of open yard storage area. Construction type would be a mix of pre-engineered metal buildings, concrete tilt-up construction and steel frame building with concrete and metal pan floor construction. Administrative services, shops, warehouse and covered storage would be housed in a variety of one-story high-bay, one-story low-bay, and two-story buildings, organized around a central core that would help to create a sheltered green space and a campus-like atmosphere. The project would also include infrastructure improvements for domestic water, wastewater service, natural gas, electrical, communication and data, utility water, access roads and parking. Figure 7 shows the Site Plan for Phase 1 of the Service Unit Park. Buildout of the Service Unit Park Master Plan is shown in Figure 8.

3.4 PROJECT NEED AND OBJECTIVES

Physical Science Expansion

The Physical Science Expansion would consolidate the Department of Geology program into a single, modern facility that presents a distinctive identity to strengthen the department and optimize the teaching opportunities throughout the program. The project would replace obsolete and inadequate teaching and research laboratories, consolidate their activities into a new facility, and release needed program space to the Departments of Chemistry and Physics. The project would also consolidate various Physics and Chemistry teaching laboratories and support spaces into one facility.

The Physical Sciences Expansion project would replace obsolete class laboratories, locate all Organic Chemistry 8 and 118 class laboratories, all Geology teaching laboratories, and all Physics 7 class laboratories in one building, and provide for projected increases in enrollment. The current condition of existing facilities, the impact of planned enrollment growth on class laboratories, and the immediate need for new and improved facilities are described below. The most significant deficiencies are:

- Obsolete and inadequate teaching laboratories
- Fire and life safety concerns in the general design and location of the undergraduate class laboratories
- Class laboratories are located in six separate buildings resulting in operational inefficiencies
- Insufficient class laboratories to meet projected enrollment growth

Figure 7. Service Unit Park Site Plan (Phase 1) – REPRODUCE IN COLOR

Figure 8. Service Unit Park Site Plan (Phase 2) – REPRODUCE IN COLOR

These deficiencies affect the efficiency of laboratory performance and the safety of the occupants and buildings. In addition, the existing departmental and research space for Physics and Geology is outmoded and inadequate.

The California Postsecondary Education Commission (CPEC) provides guidelines for the amount of Instruction and Research building space on college campuses. In 2006-07 the guideline amount for the Davis campus will exceed the space that is currently available and planned in proposed building projects by 311,000 asf. This gap is expected to grow when the campus enrollments beyond 2006-07 increase to meet new demands.

The Department of Geology is currently housed in the Physics/Geology building along with the Department of Physics. Due to growth in the Geology and Physics departments, the space within the Physics/Geology Building is no longer adequate for both programs. The Department of Physics currently has less than 50 percent of the space recommended based on the CPEC formula. With the addition of the release space from Geology, Physics will have 67.9 percent of the CPEC formula. To accommodate the demand for these gateway courses and reduce the load of the existing six laboratories, the campus was forced in the fall 2001 to make temporary short-term assignments for the Physics 7 course series into three laboratories in three separate buildings. One of the temporary laboratories was available in fall 2001. In 2001/02 the legislated utilization standards for the six permanent and one temporary class laboratories used by the Physics 7, Physics 9 and Physics Honors 9 course series averaged over 187 percent. The other two temporary laboratories were available in fall 2002 and helped reduce the utilization load. The distance between the laboratories causes significant operational inefficiencies. The temporary assignments are inadequate, obsolete, and inefficient. They are a short-term solution until the Physical Sciences Expansion project is completed. Two of the laboratories are identified for demolition as soon as Physics 6 releases the space and the third will return to its use as campus surge space.

The Organic Chemistry 8 and 118 laboratories are located in the Chemistry Building and are in need of significant modernization. The mechanical support system including fume hoods, air handlers, temperature controls, vacuum systems, and plumbing need major renovation or replacement. The Chemistry Building lacks code required fire-rated separations between laboratories. Other deficiencies include the lack of fire and smoke controlling dampers, and the inadequately sealed penetrations between areas. It would not be cost-effective to modernize the outdated teaching laboratory space to continue the current use. Instead, the space will be renovated as a future non-state funded project to accommodate needed chemistry research space. The annual average utilization rate in 2001-02 for the five Organic Chemistry undergraduate teaching laboratories is essentially 103 percent of legislated utilization standards, and projected enrollment growth would result in utilization of approximately 117 percent of standards in 2010-11 if the Physical Sciences Expansion project were not built.

The Physics 7 series and the Organic Chemistry 8 and 118 course series serve as a gateway to other lower and upper division courses in the physical sciences, biological sciences, and engineering. It is critical that these programs be available to students who need to complete the course series prior to taking courses that are required in their degree programs. Currently, due to a shortage of academic laboratory space there is a limitation on the number of students that can enroll in these gateway courses.

The following are essential goals and objectives of the proposed Physical Sciences Expansion facility:

- Bring together within the Physical Sciences Expansion facility the Geology Department, and Physics and Chemistry Department program activities dispersed over multiple campus locations;
- Improvement of the ability to recruit top quality faculty and students by providing top quality facilities;
- Provision of space to accommodate departmental growth;
- Provision of flexible teaching and research facilities that anticipate changing future needs;
- Enhancement of the identity of the Geology Department on campus;
- Creation of more opportunities for interaction within the faculty research community;
- Reconciliation of program and building costs with project budget; and
- Conformance of the design of the new facility with UC Policies on “Green Buildings” and sustainable design.

Service Unit Park

The divisions to be housed within the Service Unit Park currently occupy dozens of buildings throughout the campus and off-campus, resulting in an inefficient business model. The main location of operations and maintenance and materials management was once at the campus perimeter, but as the campus has grown is now considered part of the core campus. Accordingly, the space occupied by the O&M complex is now highly desirable for academic expansion. In addition, many of the buildings housing service functions are antiquated and ill-suited for their designated uses. The new Service Unit Park would house facilities that would be demolished to make way for the new Physical Sciences Expansion, plus additional facilities that would be consolidated at the new site from locations around the campus. Development of the Service Unit Park would be in two phases with a total of 50 service units located at the site (a service unit is a group of staff providing a particular service, such as bulk mail, reprographics, and operations and maintenance services such as plumbing, HVAC controls and the carpentry and cabinet shop).

It is the University’s goal to provide a facility that is safe, efficient, and cost-effective for the divisions housed within. Furthermore, it is the University’s desire to create an environment that inspires a sense of community, cooperation and pride in the hundreds of craftspeople, staff, and administrators who would work there. The physical structures should be secure and energy efficient, and arranged to allow for flexibility, adaptability and phasing over time.

Construction of the Service Unit Park on Hopkins Road would achieve the following objectives:

- Places the facility in an area that is outside the core campus;
- Allows sufficient space and consolidates over 50 campus service units to increase efficiency and cost-effectiveness in their operations;
- Creates space in the central core for academic buildings;
- Creates the opportunity for the people employed by the service units to work in better, safer conditions;

- Fosters a spirit of communication, cooperation and community within the facility through the building architecture and arrangement of functions;
- Releases core campus sites for new academic projects;
- Aligns with campus design guidelines, growth objectives and design standards in the design of the new facility;
- Creates an architecture appropriate to the facility's function and rural location;
- Responds to the site's external influences, both environmental and man-made, which include climate, topography, vegetation, wildlife, traffic, environmental conservation and neighboring facilities;
- Creates a built environment that is flexible, adaptable over time, can be built in phases, and is readily expandable in the future;
- Provides the appropriate site infrastructure to support the Service Unit Park in coordination with adjacent planned facilities;
- Provides safe and convenient access to the site via bicycles, automobiles, service vehicles and delivery vehicles of every size;
- Achieves the equivalent of LEED-certified rating for sustainable building standards;
- Complies with the campus energy standard of using 20 percent less energy than mandated by Title 24 standards;

3.5 PROJECT ELEMENTS

3.5.1 Buildings

Physical Sciences Expansion

The new Physical Sciences Expansion facility would be three stories and would contain research and teaching laboratories, and offices. Building circulation would be arranged in a series of two, parallel corridors creating a rectangular building footprint. The building structure would be a concrete flat slab system with dropped panels supported on columns, and the footprint would maintain a minimum 40-foot setback from implied property lines between adjacent existing and future buildings. The proposed building would also include a loading dock with a stair or ramp to grade. The footprint of the building would be approximately 27,000 square feet.

The proposed project would provide approximately 51,250 assignable square feet (asf) to the Physical Sciences Expansion. This includes the entire Department of Geology, and teaching laboratories and support spaces for the Department of Chemistry and the Department of Physics. The overall program areas for the departments are summarized below in Table 1:

Table 1
Physical Sciences Expansion Building Area (asf) by Department

Department	Lab (asf)	Support (asf)	Other (asf)	Total (asf)
Chemistry	8,130	3,150	360	11,640
Physics	4,500	600	420	5,520
Geology	18,760	4,800	9,930	33,490
Building Facilities	0	500	100	600
Total ASF	31,390	9,050	10,810	51,250

Source: UC Davis, 2004.

The following descriptions provide additional details regarding the uses of space within the proposed Physical Sciences Expansion for the Geology, Physics, and Chemistry Departments.

Geology

The relocation of the Department of Geology to the Physical Sciences Expansion facility would accommodate department growth and allow Geology to optimize existing programs. The project would provide Geology with 33,490 asf of new teaching and research laboratories. It would include appropriate class laboratories, open laboratories, special laboratories, research laboratories, research laboratory support space, academic and research office space and office support space. This project provides essential facilities for undergraduate and graduate education in Geology.

The Physical Sciences Expansion project would provide facilities that are specifically designed to meet the program needs of the Department of Geology. The class laboratories, special laboratories, open laboratories and research laboratories have been programmed to optimize Geology's primary programs. Significant efforts have been taken in the development of the project to program the spaces to compliment the way courses, laboratories and research operate. The lower division teaching laboratories include 15 student stations and multimedia teaching technologies. The microscope-based special class laboratories include 12 student stations, multimedia teaching technologies, and rock storage cabinets. The map-based class laboratories include 24 student stations, multimedia teaching technologies, rock storage cabinets, and map storage facilities. Several configurations of research laboratories are included in the project design, which are specific to each research discipline. The research laboratories include 9 chemistry-based laboratories, 7 map-based laboratories, 4 computational/GIS laboratories, a mass spectrometer laboratory, isolation and magnetic shield laboratory, an electric microprobe laboratory, a press/furnace laboratory, and a multi collector clean laboratory. In addition, specialized support space provides map, archive and display storage areas, field storage wash off facility, cold storage room, rock receiving and rock saw facility, and a small machine shop. These specialized laboratories and support space would facility the highest level of teaching and research.

The project would accommodate the extensive use of rocks and physical evidence in both the teaching and research laboratories. Unique storage and handling facilities would maximize the amount of materials that can be accommodated in the facility, while also minimizing the amount of space needed. Geology is unique in the scope of activity that occurs through the breadth of their teaching and research activities. There is an intensive field work component, large quantities of physical evidence to store, archive, and display, industrial shop operations, computational activities, lecture and laboratory class activities, chemistry, biology and physics based activities, and the intensive use of mapping technology. The Physical Sciences

Expansion project would provide the diverse facilities necessary for Geology teaching and research to thrive.

Physics

The Department of Physics would locate the undergraduate teaching labs and support space for the Physics 7 course series to the Physical Sciences Expansion Facility. The Physics 7 course series is the three-course introduction to general principles and analytical methods used in physics. Locating all the laboratories in one centralized, modern facility would provide more effective coordination of laboratory operations processes. The laboratory support staff, laboratory support functions, and the sharing of equipment would be easier to coordinate. Providing permanent long range space for the gateway course series is an essential step in insuring the ability of the program to serve future increased campus enrollments.

The five Physics class laboratories would accommodate 30 stations each and operate 14 hours each day. The Physics 7 course series would benefit from the adjacency of the laboratories to each other and their support space. This would facilitate a higher level of operational efficiency that would allow the Physics faculty to dedicate a larger amount of time to teaching. The new modern laboratories would allow a greater number of students to access this important gateway course series. This in turn would facilitate student access to lower and upper division courses in both the physical and biological sciences.

Locating Geology in the new Physical Sciences Expansion facility would release 27,506 asf to the Department of Physics and accommodate the currently constrained growth throughout this organization. The space is essential to meet Physics goals and to accommodate growth in instruction, research, teaching and research support uses, and department administration. The space would accommodate faculty and initiatives in areas such as condensed matter physics, cosmology, high energy physics, and computational physics. Physics is recruiting new faculty, specifically experimentalists, to compliment the existing theorists in the department. Because of limited facilities, faculty members that joined the department over the last ten years were given only a nominal amount of space for their research projects. The released space from Geology is essential to the expansion of research initiative for existing and new faculty and their students.

Chemistry

The six Organic Chemistry laboratories would be used to teach Organic Chemistry 8B, which is a lab-based introductory organic chemistry course. In addition, the laboratories would also be used for the Organic Chemistry 118B and 118C courses. CHEM 118 B and C comprise the two lab-based courses of the three course series in organic chemistry preparing students for professional school studies in health and life sciences. The proposed laboratories would facilitate the implementation of the two essential gateway course series in modern, efficient, safe laboratories and laboratory support space.

The Organic Chemistry Class Laboratories provide a fume hood intensive program space that would accommodate 24 stations in each of six teaching laboratories. Each laboratory includes twelve 6-foot fume hoods for student activities and two 6-foot fume hoods for dispensing and waste activities. The laboratories are anticipated to be in operation 14 hours each day. Each laboratory would be able to provide one locking drawer per student. The laboratories would accommodate 12 sections of 24 students each. Each class laboratory would have a ceiling mounted multi-media projector that would facilitate the latest advances in laboratory teaching

technologies. The labs would be fully supported by 1,200 asf of preparation/storage rooms and 1,800 asf of dispensary/stock rooms. These support facilities would allow the Organic Chemistry staff to optimize the set up and tear down logistics between laboratory sections to facilitate efficient operations. The new facilities would allow the gateway Organic Chemistry 8 and 118 course series to accommodate the maximum number of students in modern, efficient, safe laboratories. This in turn would facilitate student access to lower and upper division courses in both the physical and biological sciences. The project also releases 7,300 asf of class labs and support space to be converted by a campus funded project into research laboratories for the department. The redeveloped research laboratories would create needed opportunities to pursue the challenging issues that are at the forefront of chemistry research today.

Secondary Effects of Physical Sciences Expansion

Existing physical science space would be released for conversion to other less intensive uses. The released space is located in departments where the reassignment to those departments would address their present shortages of space. The space that Geology releases to the Department of Physics would facilitate the goals and objectives in their growth plans. The Organic Chemistry class laboratories would be converted to research space for new faculty.

Table 2 identifies the space that would be released when the Physical Sciences Expansion project is complete. The 5,052 asf in the Chemistry building and the 1,540 asf in the Chemistry Annex that accommodates five Organic Chemistry Laboratories would be converted to chemistry research laboratories. The conversion of the class laboratories to research laboratories would be a future campus funded project. The Physics 7 laboratories have been temporarily housed in Walker Annex, TB 114, and Everson Hall. When vacated, the space in Walker Annex and TB 114 would be available for demolition in conjunction with the future redevelopment of Walker Hall or could be reassigned to a new use. The temporary assignment of laboratory space in Everson Hall would be released to be used as surge space to meet short-term campus space needs.

Table 2
Secondary Effects of Physical Sciences Expansion

Program	Release Space Physical Sciences Expansion	ASF	Release Space To:
Geology	Physics Building	27,506	Physics
Physics 7	Walker Annex 112, 113, 114, 115, 116	2,021	Uncertain (Demolition or Reassignment)
Physics 7	Everson Hall 266	1,079	Campus Surge Space
Physics 7	TB 114	880	Uncertain (Demolition or Reassignment)
Organic Chemistry	Chemistry 359, 271, 375, 381	5,248	Chemistry (Research)
Organic Chemistry	Chemistry Annex 3430	2,034	Chemistry (Research)
Total		38,768	

Source: UC Davis, 2004.

Service Unit Park

The Service Unit Park project would involve construction of buildings for administration/office spaces, shops, warehouse space and covered storage areas. The office buildings would be no more than two stories in height and would be placed near visitor entrances. The shop buildings would have a combination of high bay, low bay and office areas, and would be designed for flexible space use. Warehouse buildings would also be designed for flexible use and would accommodate both high bay and low bay storage. Loading docks would be consolidated to improve loading, parking and truck circulation space. Covered storage areas would be located under high bay structures to allow for flexibility in the types of items stored and to allow future renovation as high bay warehouse space if needed. Building exterior systems for the Service Unit Park would be durable, water-resistant, thermally insulated, energy efficient, cost-effective assemblies that are compatible in appearance with the surrounding rural, agricultural context and the intended uses. In addition, the buildings would be designed to be adaptable to changing internal functions over time.

A summary of the approximate gross square footage (gsf) of the proposed project, categorized by type of use, and the phase of construction is presented below in Table 3. In addition to the facilities summarized below, the Service Unit Park would also include extensive outdoor storage areas and vehicle parking areas.

Table 3
Service Unit Park Structures

Type of Structure	Phase 1 gsf	Masterplan Buildout gsf
Office and Support Buildings	7,800	97,200
Shop/Storage/Warehouse Buildings (including covered storage)	52,000	229,000
Total	59,800	326,200

Source: UC Davis, 2004.

The first phase would include the extension of necessary utilities to the site, and construction of administrative, shop and warehouse space to accommodate O&M Building Technical Services, O&M Building Maintenance Services, O&M Utility Services, and Material Management. Details of the first phase Service Unit Park users are provided below.

O&M Building Technical Services

The GIS/CADD Unit (Geographic Information Systems/Computer Aided Drafting and Design) is a primary source of facility information, providing technical support to the operation, maintenance, and construction of the UC Davis campus building and infrastructure systems. The group offers a full range of services including computer-aided drafting and design work, survey and mapping responsibilities and an underground utility locating program. Additionally, the unit acts as the Office of Record as the central repository and archive for official as-built documentation on construction, remodeling and maintenance projects.

The Plan Review & Inspection Unit coordinates the review of projects within O&M. Plan Review receives design documents from campus project managers, notifies campus stakeholders to solicit their review and conveys review comments back to the design consultants for correction.

Plan Review employs a staff knowledgeable in campus design standards and code compliance to provide independent review of all design documents. Inspectors are assigned to the unit to provide project inspection for the O&M construction projects on campus, principally in support of the Project Management Group.

The Building Commissioning Unit was recently developed to take on the complex coordination responsibilities related to bringing new buildings up to full operational status. The commissioning process includes utilities, heating, cooling, ventilation, air balance, air filtration, fume hoods and digital building controls.

The Building Audit Unit performs facility condition assessments in support of the University's deferred maintenance planning and preventative maintenance planning efforts. These assessments consist of a multi-craft (structural, mechanical, plumbing, and electrical) building inspection, deficiency identification and prioritization, correction estimating and report production.

O&M Building Maintenance Services

The Alarms Shop is responsible for maintenance, testing, inspection and repair of alarm systems including fire alarm systems, security systems, environmental alarm systems, CCTV and digital recording/monitoring systems. The unit supports the commissioning of alarm systems in new buildings and maintains a program for testing, cleaning and calibration of smoke detectors.

Building Power and Light is responsible for the maintenance of power and lighting systems on the interior of campus buildings. Activities include trouble-shooting problems in motor and electrical controls.

The Elevator Shop maintains, tests and repairs all vertical lift devices on campus, ensuring safe and reliable operation.

Electrical Construction is the unit responsible for electrical services within buildings up to and including 480 volts. It is also responsible for the electrical construction services for in-house remodeling and alterations.

O&M Utility Services

The Water & Gas Unit operates and maintains the domestic and utility water systems, the natural gas distribution system and campus swimming pools used for recreation and sports. The unit also provides maintenance and construction services for the sanitary sewer, storm drainage and chilled water systems and also assists Utility Power & Lights with construction on the electrical system. The unit also monitors the drinking water quality on campus.

Utility Power & Light operates and maintains the high voltage (greater than 480 volts) electrical power system that distributes power from the electrical grid to the electrical services that supply campus buildings. In addition, the unit tests and maintains emergency generator power systems that serve many campus buildings. Finally, the unit maintains the outdoor lighting on campus.

Material Management

Central Receiving is the designated receiving point for most inbound campus freight deliveries. By having deliveries channeled through one centralized location, the campus is able to reduce the amount of vehicle traffic on campus, and minimize the duplication of receiving related services. Central Receiving is the designated receiving point for most inbound campus freight deliveries. It receives delivery, inspects for damage and routes shipments for delivery to campus departments. Furniture and bulky items are held in both indoor and outdoor areas awaiting distribution. The unit is equipped with two deep docks that allow easy accessibility for tractor trailers, flatbeds and a wide assortment of delivery vehicles. In addition, Central Receiving is outfitted with a variety of material handling equipment. Small freight items are delivered by Central Receiving and Mail Division staff. Larger or specialized items are handled by Special Services (excluding furniture). Furniture originating at Central Receiving is delivered by the Furniture Program Delivery staff.

Special Services is a self-supporting unit with the Material Management Division that specializes in three core areas: moving services, palletized/large freight deliveries, and furniture installations. Special Services performs on-demand deliveries and moves for campus departments and specialized deliveries of small and large items (excluding furniture) from Central Receiving to campus departments. The unit also maintains a program for delivery and pick-up of banquet tables and chairs for special events.

Secondary Effects of Relocation of Service Unit Park Uses

Space released in the Central Campus by relocation of Service Unit Park uses to the West Campus would either be reused for other campus uses or demolished. The complete details of these future plans are not known at this time, but the existing facilities at the Physical Sciences Expansion site would be demolished as described in Section 3.3.

3.5.2 Landscaping

Physical Sciences Expansion

The development of a landscape that blends with the established landscape context, and is responsive to the proposed building, is a principal objective of the landscape design. The site is already developed and little if any natural vegetation remains. However, the site is ringed by a number of trees and is adjacent to the University Arboretum. Planting concepts for the Physical Sciences Expansion would be developed to respond to:

- The existing landscape context;
- Reinforcement of building architecture;
- The need for shade in summer months;
- The desire for winter sun;
- Protection from prevailing winds;
- Maintenance practices of the UC Davis Grounds Division;
- Spatial definition of the entry plaza;
- The opportunity for seasonal interest and fragrance;

- Campus security concerns;
- Drought tolerance;
- Site exposure; and
- Protection of the existing vegetation that would remain (i.e., existing trees along California Avenue and along the northern site perimeter), as recommended by the campus arborist.

The 2003 LRDP land use indicates and promotes the unification of a Garden Walk system, which encourages a landscaped pedestrian-only pathway around the campus. An east-west segment of the Garden Walk would be constructed to the north of the Physical Sciences Expansion site, south of and adjacent to the new Mathematical Sciences Buildings. A pedestrian way would connect to the future pedestrian bridge spanning Putah Creek. Future campus plans include extension of this path with the intent of providing a major pedestrian connection between the north and south campus. Future pedestrian ways would assume landscape identity through the use of theme plantings, provide seating opportunities and discourage bicycle traffic. The site plan for the Physical Sciences Expansion is presented in Figure 6.

The landscape irrigation system would be designed to provide the necessary amount of water to introduced plant materials. The system would be designed in accordance with Campus standards and designed according to exposure and the irrigation requirements of the plant materials. The project would provide outdoor furnishings, including bicycle racks, concrete trash, recycling receptacles and ash urns, benches and/or seat walls in context with the UC Davis design guidelines and requirements.

Service Unit Park

Site landscaping would include new ground cover and new trees around and within the site. Where possible, existing trees on the site would be preserved in the landscape design. An alley of olive trees currently runs south on Hopkins Road from Hutchison Drive almost to the project site, and there are other trees located on the north and south boundaries of the site. Primary pedestrian access to the buildings would be from the parking areas.

The edges of the proposed Service Unit Park development would include landscaping to soften the visual appearance of the buildings and provide shade. The east side of the development would include a landscaped drainage swale and a small landscaped courtyard area would be provided in the center of the project.

3.5.3 Parking and Roadways

Physical Sciences Expansion

Vehicle access to the loading dock would be from California Avenue, which runs north-south along the western boundary of the site. Fire Department vehicular access would be accommodated to the east of the building.

Parking for automobiles at UC Davis is provided for the campus as a whole, not for individual buildings. Automobile parking near the Physical Sciences Expansion site would be provided via parking lots or structures located southwest and northeast of the project site.

Service Unit Park

Primary vehicular access to the site for visitors and UC passenger vehicles used by Service Unit Park personnel would be at the east end of the site from Hopkins Road. UC service vehicles would access the site via an improved farm road at the north side of the site and delivery vehicles would enter the site at a dedicated access point at the southeast corner of the site. Access to Hopkins Road is from Hutchison Drive, which provides direct access to the UC Davis campus core to the east and Pedrick Road to the west, which has direct access to Interstate 80 to the south. Hopkins Road would be widened south of Hutchison Drive for the distance necessary to add a left turn lane for northbound Hopkins Road vehicles turning west onto Hutchison Drive.

Parking areas would be provided for university vehicles, shop vehicles close to related shop function buildings, mail delivery service vehicles, warehouse delivery vehicles, employee parking, and visitor parking. Employee parking would be located in several zones throughout the site. Parking for the public would be in designated lots on the eastern portion of the site, adjacent to Hopkins Road.

3.5.4 Utilities and Infrastructure

As discussed briefly below and analyzed in Section 4.15, the proposed project facilities would require connection to campus utilities and infrastructure.

Physical Sciences Expansion

- **Domestic and Fire Water:** A 10-inch water line is proposed on the east side of the building to serve both domestic water and sprinkler systems for the proposed buildings. The 10-inch line would connect the two water lines on the north and south side of the new building to provide a looped system. A second 10-inch line is proposed for both domestic and fire water on the southwest corner of the new building. Based on the results of the Physical Sciences Expansion District Utility Study prepared by UC Davis Architecture and Engineer Department, dated January 2004 (UC Davis, 2004), the Domestic Water Tower 1, located approximately 150 feet east of the proposed building, is adequate to support the new development. Peak demand for domestic water would be 300 gallons per minute (gpm), with a demand for fire service of 450 gpm.
- **Utility Water:** The proposed project includes a 4-inch utility water loop to connect the existing system west of the project site to the existing system to the northeast of the project site. This connection would provide adequate pressure and capacity for this project as well as future projects planned for this area. Demand for utility water would be 40 gpm.
- **Sanitary Sewer:** An existing 10-inch sanitary sewer main would be rerouted from the east side of the new building, then northerly and westerly around the perimeter of the building toward California Avenue. It would then be connected to the existing 12-inch sanitary sewer line in California Avenue. The existing 12-inch sewer would also serve the laterals from the new building. Demand for sewer capacity would be 11,520 gallons per day.

- **Storm Drainage:** Currently, there is an existing 24-inch storm drain on California Avenue and a system of storm drain pipes collecting water around the Facility Shops. These systems discharge to Putah Creek. A new underground storm drain system consisting of 8-inch pipes would be constructed on the northeast and northwest side of the building to collect storm drainage. The northeast system would be connected to the existing storm drain manhole northwest of the water tower, which drains to Putah Creek. The northwest system drains to an existing manhole at the existing 24-inch storm drain line on California Avenue. Runoff from the southeast side of the building would drain into an existing drop inlet. No improvements to the existing storm drain system to increase capacity would be performed under this project.
- **Electricity:** The electrical service for the proposed Physical Sciences Expansion building would be connected to the existing electrical system manhole at the intersection of La Rue Road and California Avenue on the southwest side of the proposed structure. Peak electrical demand would be 1,000 kVA.
- **Natural Gas:** There is an existing gas line in California Avenue approximately 170 feet north of the intersection of La Rue Road and California Avenue, serving an existing building, which would be demolished. A portion of existing gas line within the site would also be demolished. The existing lateral can be utilized to serve the proposed building. Peak demand for natural gas would be 3 CFH.
- **Chilled Water:** On California Avenue, stubs for a new chilled water supply and return main would be provided by the previously approved Robert Mondavi Institute project, which would serve the proposed Physical Sciences Expansion project, the existing Academic Surge Building and potential future development north of the proposed building. Environmental review of the infrastructure associated with the Robert Mondavi Institute project took place with the 2003 LRDP EIR (State Clearinghouse #2002102092). A new 24-inch line would be installed in California Avenue and would provide a point of connection for the project.
- **Steam:** There is no steam service in the vicinity that has the capacity to serve the Physical Sciences Expansion. The UC Davis Robert Mondavi Institute project would provide a point of connection at the intersection of California Avenue and La Rue Road. A looped 10-inch steam line is required to maintain pressure in the east area of the campus and meet the demand of new development. This new line is proposed to be constructed in California Avenue and would serve the Physical Sciences Expansion. Peak demand for steam would be 1,250 pounds per hour.
- **Solid Waste:** UC Davis provides solid waste collection and recycling services for the campus. All nonrecycled and nonhazardous solid wastes collected on campus are disposed at the campus owned and operated Class III sanitary landfill located in the west campus west of County Road 98 and north of Putah Creek. The campus sends approximately 8,700 tons of solid waste to the campus landfill per year (approximately 34 tons per working day).
- **Telecommunications:** The point of connection for new service provided by the project would be at the existing manhole in the access road south of the Physical Sciences Expansion building.

Service Unit Park

- **Domestic and Fire Water:** A new 12-inch water line to serve both Phase 1 and Phase 2 facilities would circle through the entire site to provide domestic and fire service, and is expected to connect with an existing 8-inch water line located beneath Hopkins Road. The water system would also provide landscape irrigation. Total peak demand for domestic water at buildout would be 5,675 gallons per minute (gpm), with a peak demand of 4,000 gpm for fire service, a sprinkler water/hose allowance of 1,500 gpm and a demand of 175 gpm for building domestic water. During the detailed design for the Service Unit Park engineering calculations would determine whether the 8-inch Hopkins line is adequate or whether it needs upgrading to a 12-inch line.
- **Sanitary Sewer:** There is a 12-inch sewer line in Hopkins Road approximately 300 feet north of the site. Two 8-inch lines are proposed to connect to the existing 12-inch service at the Service Unit Park site. The 12-inch line has been extended across a portion of the frontage of the site and would be stubbed out of the manhole for future extension. This is a pumped system that connects to the campus WWTP.
- **Storm Drainage:** Drainage from the site would be directed to an existing 48-inch storm drain that runs southerly along the project frontage, parallel to Hopkins Road, and outlets at Putah Creek. This 48-inch line does not appear adequate to handle the capacity resulting from the proposed project, which is 31.5 cfs, and the project would include the installation of both detention and retention facilities within the site landscaping and in parking areas and open spaces on the site. Capacity requirements for the drainage facilities would be determined by a site hydrology study during project design. Infiltration basins and trenches, bioswales, and detention ponds would be incorporated to reduce storm drainage requirements so that the existing 48-inch line can handle the new flows.
- **Propane:** A natural gas system would require an upgrade by PG&E, which may not be feasible with this project. Therefore, on-grade propane tanks would be installed to supply the peak demand of 100 therms. Natural gas may be used if PG&E system upgrades are provided prior to construction or after completion of the Service Unit Park. To accommodate a propane system, the Service Unit Park would include a 7-500-gallon above ground propane storage tank. The tank would be located along the west side of the Phase1 development near the parking area.
- **Chilled Water:** Chilled water is not available at this site or as part of this project.
- **Steam:** Steam is not available at this site or as part of this project.
- **Solid Waste:** UC Davis provides solid waste collection and recycling services for the campus. All nonrecycled and nonhazardous solid wastes collected on campus are disposed at the campus owned and operated Class III sanitary landfill located in the west campus west of County Road 98 and north of Putah Creek. The campus sends approximately 8,700 tons of solid waste to the campus landfill per year (approximately 34 tons per working day).
- **Electrical:** A new electrical point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the southeast side of the site.

A second point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the northeast side of the site during the construction of Phase 2. The existing campus system has adequate capacity to serve the buildings.

- **Emergency Power:** Emergency power generation would be provided by a diesel generator with a sub-base fuel tank capable of 8 hours of run time. The fuel tank would be approximately 400 gallons and would be located near the northeast entrance to the project site.
- **Telecommunications/Data:** The telecommunications system would be connected through conduits to the existing campus distribution system at one of the nearby manholes on the southeast or northeast side of the site across Hopkins Road. Three 4-inch conduits plus four 2-inch conduits would be provided from the main telecommunications room to the nearest manhole. The system would be able to handle multiple types of interconnection systems including fiber optic systems for local network, campus network or outside campus connections.

3.5.5 Sustainable Design Elements

The Physical Sciences Expansion and Service Unit Park would comply with the UC system-wide green building policy and clean energy standard by achieving the following:

- Equivalent of LEED “Certified” rating;
- 20 percent less energy use than indicated by Title 24;
- Enrollment of the project in the PG&E Energy Savings by Design program;
- Inclusion of sustainable design capabilities and services in the selection criteria and agreements for design consultants, and incorporation of sustainable design workshops and LEED assessment at each phase of design.

3.5.6 Population

Physical Sciences Expansion

The project is part of growth in campus buildings anticipated under the 2003 LRDP in order to serve the increased enrollment and employment that are forecast for the 2003 LRDP. The projected new population would be about 85 faculty and staff who would move to the building from other locations on campus. Because their existing locations could be backfilled with new faculty and staff, it is assumed that the Physical Sciences Expansion project would accommodate an increase of 85 faculty and staff. Graduate students who would occupy the new building have been counted in student population estimates, which are updated annually based on enrollment changes.

Service Unit Park

The project is part of growth on the campus anticipated under the 2003 LRDP in order to serve the increased enrollment and employment that are forecast for the 2003 LRDP. The Phase 1

units would house approximately 175 employees, which includes the employees relocated from the existing O&M facility that is currently located within the site for the Physical Sciences Expansion (which would be demolished as part of this project); accordingly none of these would be new employees. At completion the Service Unit Park would accommodate 744 new staff members, most of which would be moved from existing facilities. Of these, 516 would be relocated from facilities in central campus that would be demolished, and 228 would move from other locations, which could then be backfilled with additional staff. This would result in net decrease in the population of Central Campus of 431 faculty and staff.

3.6 CONSTRUCTION SCHEDULE AND STAGING

Physical Sciences Expansion

Construction of the proposed project is anticipated to begin in the summer of 2006 and end in winter of 2009. Construction staging and contractor parking associated with the proposed project would occur partially within the project boundaries and partially at remote locations at UC Davis that are currently being used for construction staging and parking associated with currently on-going campus construction plans.

Service Unit Park

The Service Unit Park would be constructed in two phases. Construction of Phase 1 is anticipated to begin in January of 2006, and end in fall of 2006. At this time, there is no schedule set for Phase 2 or for completion of the Service Unit Park development. Construction staging and contractor parking associated with the proposed project would occur within the project boundaries.

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.

4.1 2003 LRDP SCOPE OF DEVELOPMENT

The Physical Sciences Expansion would replace the Department of Geology's obsolete and inadequate teaching and research laboratories, and would release needed program space to the Department of Chemistry and Department of Physics. Relocation of campus support services to the new Service Unit Park would free up the existing site in the core campus to allow expansion of academic facilities. The Service Unit Park also would provide more modern, efficient and consolidated facilities that would allow staff to better support campus facilities.

The 2003 LRDP anticipates academic and administrative space on campus would increase to approximately 7,175,000 asf through 2015-16. In fall 2002, the campus had only approximately 4,475,000 asf of academic and administrative space. The Physical Sciences Expansion project, with 51,250 asf of academic/administrative space, in combination with other recently approved and currently proposed projects, would not increase academic and administrative building space on campus to levels that would exceed those projected for 2015-16. Therefore, the proposed Physical Sciences Expansion project is well within the 2003 LRDP's scope of academic and administrative development.

4.2 2003 LRDP LAND USE DESIGNATION

The Physical Sciences Expansion site is designated in the 2003 LRDP for *Academic/Administrative High Density* use. The proposed Physical Sciences Expansion facilities, which include laboratories and associated services and research, and academic and departmental administrative offices, are consistent with that use as defined in the 2003 LRDP EIR. The

design of the building is consistent with the typical large, multi-story facility for academic facilities in the central campus.

The Service Unit Park site is designated in the 2003 LRDP for *Research Park Low Density* use, a land use designation that allows for private, public and nonprofit entities on campus working in research partnerships with UC Davis. However, as discussed in Section 3.3 of this Initial Study, since the preparation of the 2003 LRDP it has been determined that the Research Park land use designation is no longer needed in West Campus. The area in the South Campus that was designated as *Support* in the 2003 LRDP has been determined to be financially infeasible as a location for the Service Unit Park due to the cost of providing infrastructure. Although the proposed Service Unit Park is not consistent with the current land use designation of the West Campus site, the site has been determined to be the most suitable location for the facilities; therefore the designation in the LRDP would be changed to *Support*. Use of the site for *Support* would be compatible with surrounding uses because, as discussed in this Initial Study, the Service Unit Park uses and activities would not restrict or conflict with the planned or existing uses surrounding the Service Unit Park site. Because there is no longer a need for research park facilities in West Campus, it would not be necessary to designate any new area for *Research Park Low Density* use. Section 7.9 includes a discussion of land use compatibility of the new designation with surrounding land uses.

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 employees². 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 2003 on-campus faculty and staff headcount was approximately 10,500, and the 2002-03 three-quarter average on-campus student population was approximately 26,650 (UC Davis ORMP 2003a and b). The Physical Sciences Expansion would accommodate about 85 faculty and staff, who would move to the building from other locations on campus. Because their existing locations can be backfilled with new faculty and staff, it is assumed that the Physical Sciences Expansion project would accommodate an increase of 85 faculty and staff. The student population of the building has already been accounted for as part of annual enrollment updates.

The Service Unit Park would accommodate 744 new staff members, most of which would be moved from existing facilities. Of these, 516 would be relocated from facilities in central campus that would be demolished, and 228 would move from other locations, which could then be backfilled with additional staff. This would result in net decrease in the population of Central Campus of 431 faculty and staff. The proposed project would thus introduce no new students and would add 313 new members to the faculty and staff population of the campus as a whole. These increases, in combination with other recently approved and currently proposed projects, would not increase the campus population to a level that would approach that projected for

² 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).

2015-16. Therefore, the proposed project is well 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;
- 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 relocating support services to a more suitable location, allowing space to provide additional academic facilities within the core campus area. The 2003 LRDP identifies that up to 2.5 million square feet of new facilities may be provided within the Academic and Administrative land uses.

In addition, the 2003 LRDP includes specific objectives that are relevant to the proposed project, including the following:

Built Environment-Location of Programs. Cluster related programs geographically when feasible to promote efficiencies and interaction (Resource Objectives, page 34).

Arboretum Connections to Academic Core. Find opportunities to better connect the environment of pathways open spaces, and buildings in the Central Campus to the Arboretum. Extend the landscape character of the Arboretum into the fabric of the Central Campus where appropriate (Planning Area Objectives, page 41).

Garden Walks. While maintaining the integrity and vitality of the campus bike path systems, substantially improve the network and quality of pedestrian walkways on the campus in the form of garden walks that weave through the Central Campus and connect to the main Quad and Arboretum (Planning Area Objectives, page 41).

10-Minute Walk: The campus's traditional "10 minute walk" standard which locates high-use academic buildings within a 10-minute walk from the center of the campus core should be maintained (Planning Area Objectives, page 41).

Airport Zone. Maintain and expand low density academic, support, and research park uses along the Hopkins Road corridor. Include an open space setback along the west side of Hopkins Road for an off-street bike path and landscaped area to connect points north to the Putah Creek Riparian Reserve (Planning Area Objectives, page 44).

The proposed project would support the 2003 LRDP's "Built Environment-Location of Programs" objective by locating the Physical Sciences Expansion in the south/center of the Physical Sciences area.

The proposed project would support the "Arboretum Connections to Academic Core" objective by accommodating a location for a future connection to the Arboretum Walk.

The design of the Physical Sciences Expansion project would support the "Garden Walks" objective by including a proposed Garden Walk realignment that would extend along the northern edge of the proposed building.

The proposed project would support the “10-minute walk” objective by locating a high intensity academic building within the core campus.

The Service Unit Park’s location is consistent with the “Airport Zone” objective, which calls for locating support uses along the Hopkins Road corridor. The site plan for the Service Unit Park also supports the “Airport Zone” objective by incorporating a 120-foot green space setback on east side of the site, which is on the west side of Hopkins Road. This area is designed to accommodate future construction of an off-street bike path.

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.

The environmental resource discussions that follow in this document conclude that the project would result in the following types of cumulative impacts.

- The proposed project would not contribute to significant and unavoidable cumulative impacts identified in the 2003 LRDP EIR related to: loss of wetland and riparian habitat (Section 7.4); and loss of valley elderberry longhorn beetle habitat (Section 7.4).
- The proposed project would incrementally contribute to, but would not exceed, significant and unavoidable cumulative impacts identified in the 2003 LRDP EIR related to: loss of scenic vistas (Section 7.1); degradation of visual character or quality (Section 7.1); increases in light and glare (Section 7.1); conversion of prime farmland (Section 7.2); increases in criteria pollutant emissions (Section 7.3); loss of habitat for Swainson’s hawks and burrowing owls (Section 7.4); potential loss of archaeological and historical resources (Section 7.5); degraded receiving water quality (Section 7.8); increased water extraction from the deep aquifers (Section 7.8); increased water extraction from the shallow/intermediate aquifers (Section 7.8); increased ambient noise levels (Section 7.11); construction of police and fire service facilities (Section 7.13); construction of school facilities (Section 7.13); development of recreation facilities (Section 7.14); degraded intersection and freeway operations (Section 7.15); and construction of wastewater treatment facilities (Section 7.16).
- The proposed project would incrementally contribute to, but would not exceed, less-than-significant cumulative impacts identified in the 2003 LRDP EIR related to: exposure to

carbon monoxide concentrations; increased toxic air contaminants; exposure to seismic ground shaking; use and transport of hazardous materials and generation of hazardous wastes; exceedance of storm water drainage systems; discharge of treated effluent to Putah Creek; potential conflicts with land use plans, policies, or regulations; inability to meet housing demand; construction of libraries; and expansion of water, solid waste, energy, and natural gas systems.

5 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving 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 Tiered 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 sufficiently addressed by the 2003 LRDP EIR. This Tiered Initial Study has concluded that the project would incrementally contribute to, but would not exceed, certain significant 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, are required. This Tiered Initial Study has identified one potential impact that requires-project specific mitigation: potential traffic congestion at the Hutchison Drive/ LaRue Road intersection would require implementation of project-specific MM-1, which would entail planning and implementing parking lot conversions along Hutchison Drive that would have the effect of reducing PM peak hour vehicle trips at the Hutchison/La Rue intersection. This impact and mitigation is described in greater detail in Section 7.15 of this Initial Study, Transportation, Circulation, & Parking. Therefore preparation of a Mitigated Negative Declaration is appropriate. The Proposed Mitigated Negative Declaration is presented in Appendix A of this document.

6 DETERMINATION

On the basis of this initial evaluation:

- I find 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.
- I find that the proposed project COULD have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and a new project-specific mitigation measure, in addition to those previously identified in the 2003 LRDP EIR, is required to reduce this effect to such a point that clearly no significant impact would occur. A MITIGATED NEGATIVE DECLARATION has been prepared. The Mitigated Negative Declaration is presented in Appendix A of this document.
- I find that 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.

John A. Meyer
Vice Chancellor – Resource Management and Planning

Date

7 EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

The following Environmental Checklist form is based on the checklist suggested in Appendix G of the CEQA Guidelines, and it has been adapted to assist in evaluating the environmental effects of the proposed project with respect to the analysis in the 2003 LRDP EIR.

The Environmental Checklist identifies potential project effects as corresponding to the following categories of impacts:

- Potentially Significant Impact: An effect that was not previously addressed in the 2003 LRDP EIR and may be significant based on substantial evidence and the significant criteria. If the project may result in one or more Potentially Significant Impacts, an EIR is required.
- Less than Significant with Mitigation Incorporated: An effect that was not adequately addressed in the 2003 LRDP EIR, but with the implementation of project-specific mitigation measures, is reduced from potentially significant to less than significant. This Tiered Initial Study identifies a potentially significant traffic impact that was not previously addressed in the 2003 LRDP EIR and presents a project-specific mitigation measure that would reduce the effect to a less-than-significant level.
- Impact for which the 2003 LRDP EIR is Sufficient: An effect that was adequately addressed and mitigated to the extent feasible in the 2003 LRDP EIR (the Program EIR). For these effects, the Tiered Initial Study explains how the effect was addressed in the 2003 LRDP EIR and why the criteria for supplemental environmental review under CEQA Section 21166 (project changes, changed circumstances, and/or new information) have not been triggered. Effects correspond to this category under the following circumstances:
 - a. The 2003 LRDP EIR found the impact would be reduced to a less-than-significant level with the implementation of applicable 2003 LRDP EIR mitigation measures;
 - b. The impact is significant and unavoidable at a cumulative level, and the 2003 LRDP EIR fully addressed the cumulative impact; or
 - c. The impact is significant and unavoidable at a project level, but the LRDP EIR contained an adequate project-level analysis for the impact. This conclusion may also be appropriate where the particular impact and associated mitigation measures are sufficiently generic so that no further analysis is necessary or appropriate (i.e., the LRDP EIR contains all of the analysis that reasonably could be included on the topic with respect to all projects generally, including the specific project under analysis), and where no additional mitigation is feasible.
- Less than Significant Impact: An effect for which no significant impacts, only less than significant impacts, result.
- No Impact: The project does not create an impact.

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 takes place for every major capital project by the campus Design Review Committee, which 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

Physical Sciences Expansion Site

The Physical Sciences Expansion site is located within the Central Campus bordered by the Physics/Geology building to the north; Facilities Services area and Domestic Water Tower 1 to

the east, the Arboretum Waterway to the south, and California Avenue and Academic Surge to the west. The site has existing structures, which are utilitarian and not particularly attractive, is ringed by a number of trees and is adjacent to the Arboretum Waterway. The tree survey conducted for the project identified 20 existing trees within the Physical Sciences Expansion project site.

The site does not afford panoramic views; limited but important off-site views face south and southeast toward the Arboretum Waterway, with visually important views of the pedestrian bridge and view to the Mondavi Center to the southeast. As stated in the 2003 LRDP EIR, the Arboretum is a distinct visual amenity within the Central Campus. Large trees line the Arboretum Waterway to the south bordering the Physical Sciences Expansion site. This existing mature vegetation along the Arboretum provides a buffer obscuring long-range views from the pedestrian bridge and Mondavi Center northwest toward the Physical Sciences Expansion site. From within the Arboretum, views out to surrounding buildings or roads are visible; however, the aesthetic experience is dominated by the linear views of the waterway and the extensive landscaping surrounding the waterway (LRDP EIR 2003).

Service Unit Park Site

The Service Unit Park site is located within the West Campus bordered by Hopkins Road and the University Airport to the east, the Contained Research Facility and teaching and research fields to the north, the Avian Sciences Facility to the south and teaching and research fields to the west. The 2003 LRDP identified the framework of tree-lined streets as a valued visual element and the open views across agricultural lands facing west toward the Coast Range as a scenic vista. The Service Unit Park site is in proximity to two identified visual elements in the UC Davis campus landscape: an alley of olive trees which runs along Hopkins Road (south of the Hutchinson/Hopkins intersection) and an unobstructed view to the west across the open agricultural fields. Off-site views to the north, east, and south are of existing structures and visually compatible with the Service Unit Park site.

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. 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 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. Mitigation measures are included to reduce the magnitude of project-level impact 4.1-1 and cumulative impact 4.1-4, but these impacts are identified as significant and unavoidable because they are considered irreversible. Mitigation measures are included to reduce the magnitude of cumulative impacts 4.1-5 and 4.1-6, but these impacts are 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.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
AESTHETICS			
4.1-1	Development under the 2003 LRDP could have an adverse effect on scenic vistas west across agricultural lands to the Coast Range.	S	SU
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
4.1-3	Development under the 2003 LRDP could create substantial light or glare on campus that could adversely affect daytime or nighttime views in the area.	PS	LS
4.1-4	Development under the 2003 LRDP together with other development in the region could affect local scenic vistas west across agricultural lands to the Coast Range.	S	SU
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 of the region.	S	SU
4.1-6	Implementation of the 2003 LRDP together with cumulative development in the region would create new sources of light and glare that could adversely affect daytime or nighttime views 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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

AESTHETICS

- 4.1-1 The campus Design Review Committee shall consider scenic views while planning for projects under the 2003 LRDP to maintain scenic views to the extent feasible. Design considerations could include establishing open landscaping and deciduous trees along important view corridors.
- 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.
- 4.1-3(a) Design for specific projects shall provide for the use of textured nonreflective exterior surfaces and nonreflective glass.
- 4.1-3(b) Except as provided in LRDP Mitigation 4.1-3(c), all new outdoor lighting shall utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting.
- 4.1-3(c) Non-cutoff, non-shielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape features, or specific architectural features shall be reviewed by the Campus Design Review Committee prior to installation to ensure that: (1) the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and (2) the proposed illumination creates no adverse effect on nighttime views.
- 4.1-3(d) The campus will implement the use of the specified lighting design and equipment when older lighting fixtures and designs are replaced over time.
- 4.1-4(a) Implement LRDP Mitigation 4.1-1.
- 4.1-4(b) The City of Davis, Yolo County, and Solano County can and should implement the General Plan policies that support the long-term establishment and preservation of scenic vistas.
- 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.
- 4.1-6(a) Implement LRDP Mitigation 4.1-3(a) and (b).
- 4.1-6(b) The City of Davis and other surrounding jurisdictions can and should adopt (if necessary) and implement development standards and guidelines, which support the minimal use of site lighting for new developments.

7.1.4 Environmental Checklist and Discussion

AESTHETICS	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
-

a) A scenic vista is defined as an expansive view of a highly valued landscape from a publicly accessible viewpoint. On and near campus, viewpoints along SR 113, Hutchison Drive, La Rue Road, and Russell Boulevard provide scenic vistas to the west across agricultural land to the Coast Range. The Physical Sciences Expansion facility replaces existing buildings in the Central Campus and would not affect scenic vistas. The Service Unit Park site is less than one mile south of Hutchison Drive and off-site views to the west provide a scenic vista across agricultural land to the Coast Range. Although the Service Unit Park is screened by the Contained Research Facility to the north, Avian Research Facility to the south, and several facilities to the east, it does contribute to the loss of views across agricultural land. The 2003 LRDP EIR found that development under the 2003 LRDP could have an adverse effect on scenic vistas west across agricultural lands to the Coast Range (LRDP Impact 4.1-1). In compliance with LRDP Mitigation 4.1-1, in which is relevant to the project, the campus Design Review Committee would consider scenic views as part of the project planning and design process. However, as determined in the 2003 LRDP EIR, scenic views that are lost to development cannot be replaced. Therefore, this impact would be considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

The 2003 LRDP EIR also found that development under the 2003 LRDP together with other development in the region could cumulatively affect local scenic vistas west across agricultural lands to the Coast Range (LRDP Impact 4.1-4). The Service Unit Park contributes to this impact. In compliance with LRDP Mitigation 4.1-4(a-b), the campus would implement LRDP Mitigation 4.1-1 (described above), and local jurisdictions can and should implement policies that support the long-term establishment and preservation of scenic vistas. While these measures would reduce the magnitude of this impact, lost access to scenic vistas is considered irreversible, and this cumulative impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- b) The campus is not located near a state scenic highway and the project would have no effect on scenic resources. No impact is expected.
- 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). The Physical Sciences Expansion would result in the removal of 12 trees,

2 of which are specimen trees. Removal of trees is discussed in Section 7.4, Biological Resources; the removal of trees has been adequately considered in the 2003 LRDP EIR, and is not a new significant impact. As stated in the 2003 LRDP EIR, the nearby Arboretum is a distinct visual amenity within the Central Campus. Large trees line the Arboretum Waterway to the south of the Physical Sciences Expansion site. This existing mature vegetation along the Arboretum provides a buffer obscuring long-range views from the pedestrian bridge and Mondavi Center northwest toward the Physical Sciences Expansion site. From within the Arboretum, there are views out to surrounding buildings or roads; however, the aesthetic experience is dominated by the linear views of the waterway and the extensive landscaping surrounding the waterway (LRDP EIR 2003). The project would not affect trees in the Arboretum. Demolition of the existing maintenance facilities would remove existing clutter and fencing associated with the existing Operation and Maintenance facilities and the new facilities would include landscaping and improved linkage to the Arboretum. The visual impact to the Arboretum would be beneficial.

The Service Unit Park would be located in an open space area, but is adjacent to, and buffered on three sides by existing facilities. 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. 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 applicable 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 under the 2003 LRDP 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 Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

d) The 2003 LRDP EIR found that development on campus under the 2003 LRDP could create substantial light or glare that could adversely affect daytime or nighttime views in the area (Impact 4.1-3). Both the Physical Sciences Expansion and Service Unit Park have the potential to generate daytime and nighttime glare. As stated in the Service Unit Park Detailed Project Plan and Physical Sciences Expansion 50% Schematic Design Report, the lighting levels would be designed in accordance with Illuminating Engineering Society (IES) recommendations and Title 24 requirements. Daytime lighting with appropriate lighting controls would be incorporated where feasible, downlight fixtures and indirect lighting would be used in selected areas, and exterior lighting would be high pressure sodium and be controlled by photo cells and a time clock. In compliance with LRDP Mitigation 4.1-3(a), the project would use textured nonreflective exterior surfaces

and nonreflective glass. In compliance with LRDP Mitigation 4.1-3(b-c), new outdoor lighting associated with the project would use directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting, except in cases to enhance nighttime views of walking paths, specific landscape features, or specific architectural features. In compliance with this measure, the Campus Design Review Committee would also review the proposed project's use of non-directional lighting design to ensure that no adverse effects on nighttime views occur. In compliance with LRDP Mitigation 4.1-3(d), the campus will replace older lighting fixtures over time with directional lighting. With implementation of LRDP Mitigation 4.1-3(a-d), which is relevant to the proposed project, the project's impact associated with light and glare would be less than significant.

The 2003 LRDP EIR found that campus development under the 2003 LRDP in conjunction with other development in the region would add new sources of light and glare that could adversely affect daytime or nighttime views in the area (Impact 4.1-6). LRDP Mitigation 4.1-6(a), in which is relevant to the proposed project, requires the campus to implement Mitigation Measure 4.1-3(a) and (b), discussed above. LRDP Mitigation 4.1-6(b) indicates that local jurisdictions can and should adopt and implement development standards and guidelines that support reduced lighting. However, the feasibility and/or implementation of LRDP Mitigation 4.1-6(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 Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Summary

Mitigation measures 4.1-1, 4.1-2(a,b), 4.1-3(a-d), 4.1-4(a,b), 4.1-5(a, b), and 4.1-6(a, b) from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of aesthetics impacts to the extent feasible. The proposed project would not exceed the levels of significance of aesthetics impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant aesthetics impacts that were not previously addressed.

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

Physical Sciences Expansion Site

The proposed facilities at this site would be developed entirely within an area in the Central Campus that has existing structures and is designated *Academic/Administrative High Density*. Figure 4.2-1 (Agricultural Resources) in the 2003 LRDP EIR identifies the Physical Sciences Expansion site as *Urban and Built-Up Land*. There are no important farmlands or agricultural resources on or adjacent to the Physical Sciences Expansion site.

Service Unit Park Site

The proposed Service Unit Park site is within the West Campus and is currently teaching and research fields. Most of the site is cropland that was used in the past for production of alfalfa and oats. The site has been fallow for several years and has been used for manure spreading. The center portion of the western third of the site is currently being used for rose cultivation research. These existing uses would be discontinued or conducted elsewhere on campus upon completion of the Service Unit Park. Adjacent agriculture uses to the north and west of the site include open fields of cropland/pastureland. A bee house is located adjacent to the site (northwest corner). The 24-acre site is categorized as prime farmland.

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 included 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.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
AGRICULTURAL RESOURCES			
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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

AGRICULTURAL RESOURCES

- 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 Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>

- a) As stated in the 2003 LRDP EIR, approximately 1,695 acres within the West Campus are designated as Prime Farmland in the FMMP and are currently used for Teaching and Research Fields or Teaching and Research Open Space. The Physical Sciences Expansion site is fully developed and as such the 2003 LRDP EIR identifies the site as Urban and Built-Up Land with no important agricultural resources. The Service Unit Park site is within an agricultural area in the West Campus and is identified in the 2003 LRDP EIR as *Prime Farmland Converted to Development*. The project would convert 24 acres of Prime Farmland at buildout and approximately 14 acres in Phase 1 to a developed use. This is within and does not exceed the acreage to be converted under the 2003 LRDP. The 2003 LRDP EIR identifies impacts 4.2-1 (project-level impact associated with loss of prime farmland) and 4.2-3 (cumulative impact associated with loss of prime farmland) as significant and unavoidable because they are considered irreversible. Project impacts on farmland were fully addressed in the 2003 LRDP EIR and Mitigation measures 4.2-1 and 4.2-3 are relevant to the proposed project to reduce the significance of agricultural impacts to the extent feasible. The campus continues to investigate land areas that would be appropriate to designate as prime farmland in compliance with LRDP Mitigation Measure 4.2-1. At this time, the Russell Ranch or Kidwell parcels may still be used for this purpose. Prior to converting the teaching and research fields at the Service Unit Park site, the Chancellor will select a site for Service Unit Park farmland preservation.

- b) Because campus lands are state lands, they are not eligible for Williamson Act agreements. Because both project sites have been designated for development and are not subject to local zoning rules, the proposed project would not conflict with an existing zoning for agricultural use or a Williamson Act contract, and no impact would occur.

- c) There are no important farmlands or agricultural resources on or adjacent to the Physical Sciences Expansion site. The proposed facilities at the Physical Sciences Expansion site would be developed entirely within an area in the Central Campus that has existing structures and is designated *Academic/Administrative High Density*. Figure 4.2-1 (Agricultural Resources) in the 2003 LRDP EIR identifies the Physical Sciences Expansion site as *Urban and Built-Up Land*. Therefore, no other changes that could occur on site or on adjacent sites would result in conversion of farmland to non-agricultural use.

The Service Unit Park site is considered prime farmland and is adjacent to prime farmland. The adjacent undeveloped land is designated as *Teaching and Research Fields* by UC Davis. The Service Unit Park would not be incompatible with use of adjacent teaching and research fields. The potential impact would be less than significant.

Summary

Mitigation measures 4.2-1 and 4.2-3 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of agricultural impacts to the extent feasible. The proposed project would not exceed the levels of significance of agricultural impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant agricultural impacts that were not previously addressed.

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. 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 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, which are called criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns in diameter (PM₁₀), lead (Pb), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). Ozone is evaluated by assessing emissions of its precursors: reactive organic gases (ROG) and NO₂.

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. Air toxics 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 therefore, tend to have a greater influence on changes in measured ambient pollutant concentrations. Ambient concentrations of CO and PM₁₀ are particularly influenced by local emission sources. The EPA has classified the entire SVAB, which includes the campus, as a severe nonattainment area for O₃. The CARB has also designated the area as being in nonattainment under the state ambient air quality standards for O₃ and PM₁₀. The designation of an area as attainment or nonattainment is based on monitored data throughout the SVAB.

Project Site

Physical Sciences Expansion Site

There are no sensitive receptors (defined as schools, daycare centers, hospitals, and nursing homes) on or near the project site. Existing air pollutant sources on or near the site include laboratory facilities for the physics and geology departments, Crocker Nuclear building, and the Academic Surge building.

Service Unit Park Site

There are no sensitive receptors on or near the project site, or near the intersection of Hopkins Road and Hutchison Drive, which would be widened as part of the project. Existing air pollutant sources on or near the site include the University Airport and agricultural fields.

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_x and ROG in excess of 82 pounds a day, CO emissions in excess of 550 pounds a day, and emissions in excess of 150 pounds a day for PM₁₀ 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 included to reduce the magnitude of project-level impact 4.3-1 and cumulative impact 4.3-6, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated. Mitigation is included 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.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
AIR QUALITY			
4.3-1	Implementation of the 2003 LRDP would result in daily operational emissions above the YSAQMD thresholds that may contribute substantially to a violation of air quality standards or hinder attainment of the regional air quality plan.	S	SU
4.3-3	Emissions from construction activities associated with the 2003 LRDP would exceed YSAQMD thresholds.	S	SU
4.3-6	Implementation of the 2003 LRDP, in conjunction with other regional development, would result in a cumulatively considerable increase of non-attainment pollutants.	S	SU
4.3-8	Regional growth could result in an increase in toxic air contaminants if compensating technological improvements are not implemented.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

AIR QUALITY

- 4.3-1(a) Vehicular Sources. The following measures will be implemented to reduce emissions from vehicles, as feasible.
- The campus shall continue to actively pursue Transportation Demand Management to reduce reliance on private automobiles for travel to and from the campus.
 - Provide pedestrian-enhancing infrastructure to encourage pedestrian activity and discourage vehicle use.
 - Provide bicycle facilities to encourage bicycle use instead of driving.
 - Provide transit-enhancing infrastructure to promote the use of public transportation.
 - Provide facilities to accommodate alternative-fuel vehicles such as electric cars and CNG vehicles.
 - Improve traffic flows and congestion by timing of traffic signals to facilitate uninterrupted travel.
 - When the campus purchases new vehicles, the campus will evaluate the practicality and feasibility of acquiring low-pollution vehicles that are appropriate for the task and will purchase these types of vehicles when practical and feasible. When replacing diesel engines in existing equipment, the campus will install up-to-date technology.
- 4.3-1(b) Area Sources. The following measures will be implemented to reduce emissions from area sources, as feasible.
- Use solar or low-emission water heaters in new or renovated buildings.
 - Orient buildings to take advantage of solar heating and natural cooling and use passive solar designs.
 - Increase wall and attic insulation in new or renovated buildings.
 - Provide electric equipment for landscape maintenance.
- 4.3-1(c) The campus will work with the YSAQMD to ensure that emissions directly and indirectly associated with the campus are adequately accounted for and mitigated in applicable air quality planning efforts. The YSAQMD can and should adopt adequate measures consistent with applicable law to ensure that air quality standard violations are avoided.

2003 LRDP EIR MITIGATION MEASURES

AIR QUALITY

- 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(b) The campus shall include in construction contracts for large construction projects near receptors, the following control measures:
- Limit traffic speeds on unpaved roads to 15 mph.
 - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
 - To the extent feasible, limit area subject to excavation, grading, and other construction activity at any one time.
 - Limit the area subject to excavation, grading, and other construction activity at any one time.
- 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

2003 LRDP EIR MITIGATION MEASURES

AIR QUALITY

unnecessary concurrent operation.

4.3-6 Implement LRDP Mitigation 4.3-1(a-c).

4.3-8 EPA and CARB are expected to continue the development and implement programs to reduce air toxics, and UC Davis will continue its efforts in this area.

7.3.4 Environmental Checklist and Discussion

AIR QUALITY		Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 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) Construction

The 2003 LRDP EIR found that construction activities under the 2003 LRDP could exceed YSAQMD thresholds (Impact 4.3-3). The state 24-hour PM₁₀ standards could be violated when multiple construction projects (especially those involving ongoing grading or excavation activities) occur simultaneously in the same area. Although there are no sensitive receptors located adjacent to construction areas, academic facilities near the project sites could be affected by high concentrations of PM₁₀. In addition, exhaust pollutants would be emitted during use of construction equipment.

Construction for the Physical Sciences Expansion sites would be limited to the project site, which is surrounded by other academic uses and is adjacent to the Arboretum Waterway. In addition to on-site construction of the Service Unit Park facilities, Hopkins Road would be widened south of Hutchison Drive to install a left-turn lane, so construction would also take place at this location as part of the Service Unit Park. There are no sensitive receptors near the Service Unit Park facilities or the Hopkins Road/Hutchison Drive intersection. The project would involve ground disturbance for foundation excavating, utility installation and final grading. Construction of the Physical Sciences Expansion

would take place from August 2006 through February 2009. During this period construction might also take place in the summer of 2006 for the expansion of King Hall, east of the project site and for the South Entry District Utility Project, which would include construction on California Avenue, South LaRue Drive and Old Davis Road. Construction of Phase 1 of the Service Unit Park would take place from September 2005 through October 2006. During construction it is expected that 15 to 20 construction vehicles could be present on each site. Construction equipment and building materials that emit air pollutants would further contribute to air emissions during construction. Because potential construction emissions from campus projects could exceed the YSAQMD thresholds, this impact was identified as significant in the 2003 LRDP EIR.

LRDP Mitigation 4.3-3(a) (requiring campus construction contracts to include measures to reduce fugitive dust impacts), 4.3-3(b) (requiring additional specific dust control measures), and 4.3-3(c) (requiring control measures to reduce emissions of ozone precursors from construction equipment exhaust) are relevant to the proposed project. However, the proposed project would involve the short-term emission of exhaust pollutants from construction equipment mainly at the Physical Sciences Expansion Site that would be near other university buildings and student/worker areas, and near the King Hall and South Entry District Utility Project construction sites. The 2003 LRDP EIR found that this impact would be significant and unavoidable. The impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Operation

Criteria Pollutants

The proposed project at the Physical Sciences Expansion site would allow about 85 existing staff to move from their current locations, which could then accommodate additional campus population. Student population would not exceed that evaluated in the 2003 LRDP EIR. Construction of the Service Unit Park would accommodate an increase of 228 staff members, adding to the existing campus population. As discussed in Section 4.3 above, this increase in campus population is well within the 2003 LRDP's on-campus population projections. Therefore, the additional vehicle trips associated with the proposed project would contribute incrementally to, but not exceed, the vehicular emissions estimate in the 2003 LRDP EIR. There are no stationary source emissions of criteria pollutants associated with the proposed project.

The 2003 LRDP EIR found that operational emissions under the 2003 LRDP could substantially contribute to violation of ambient state and federal air quality standards or hinder the attainment of the regional air quality plan (LRDP Impact 4.3-1). The project would contribute to this impact. The campus is located in an area that is in nonattainment of O₃ and PM₁₀ standards. The Sacramento Regional Clean Air Plan, which covers the campus, contains strategies for lowering the region's emissions to meet the O₃ standard by 2005. However, campus growth under the 2003 LRDP through 2015-16 is not addressed by the current Clean Air Plan. LRDP Mitigation 4.3-1 (a-b), which includes measures that encourage alternative transportation and no- or low-emission building designs and operations, would help reduce daily emissions from campus vehicular and stationary sources.

LRDP Mitigation 4.3-1(c) would ensure that the campus will coordinate with the YSAQMD during the update of the Clean Air Plan and other applicable air quality planning efforts. However, given the likelihood of exceedance even with mitigation, it appears that the implementation of the 2003 LRDP, including the proposed project, could potentially hinder the attainment of the regional air quality plan. The project-level impact is therefore considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Toxic Air Contaminants

The proposed Physical Sciences Expansion site includes 8,150 asf of chemistry wet teaching laboratory space, 4,500 asf of physics wet teaching laboratory space, and 18,760 asf of geology wet research and teaching laboratory space. This square footage of laboratory space is within the amounts assumed in the 2003 LRDP EIR. The Chemistry wet laboratory space was modeled in the 2003 LRDP Health Risk Assessment (HRA) with laboratory chemical emission factors associated with Laboratory Type I – Chemistry and Chemical Engineering, and the wet laboratory spaces for the Physics and Geology departments were modeled with Laboratory Type III – Physical Sciences/Other (URS, 2003). These laboratory chemical emission factors are expressed as grams per second (g/s) emissions per square foot of laboratory floor space. In addition, there are three permitted boilers and one permitted gas turbine located at the Central Plant. The gas turbine is fired exclusively on natural gas, while the boilers are primarily fired on natural gas, but can also use diesel fuel. TAC emissions from the natural gas combustion were calculated using emission factors from the California Toxic Emission Factor II database from the California Air Resources Board (CARB, 2000). The proposed project includes the installation of a diesel-powered generator to provide emergency back-up power to the proposed building. The 2003 LRDP HRA included the addition of the new diesel emergency generator at this site and the emissions from the generator were included in the HRA conducted for the LRDP EIR. Additional evaluation of the emergency generator associated with the Physical Sciences Expansion is therefore not required.

There is no laboratory space at the Service Unit Park site, but the buildings would house several work shops for operations and maintenance duties. The proposed project includes the installation of a diesel-powered generator to provide emergency back-up power to the proposed site. The 2003 LRDP HRA included the addition of the 37 new diesel emergency generators on campus and the emissions from the generator at the Service Unit Park were included in the HRA conducted for the LRDP EIR. Additional evaluation of the emergency generator associated with the Service Unit Park is therefore not required. Paint spraying and other maintenance activities conducted at the Service Unit Park would be similar to activities currently occurring at the existing facility and would not result in an increased air quality impact.

HRA calculations performed as part of the 2003 LRDP EIR predicted that the cancer risk from campus operations through academic year 2015-16 will be below 10 in one million for both the off-campus and on-campus Maximally Exposed Individual assuming a 70-year exposure period. The non-cancer health risk was calculated to be below 1.0 on the hazard index. The 2003 LRDP EIR concluded that development under the 2003 LRDP

would not exceed either health risk standard, and the impact associated with TAC generation would be less than significant. The LRDP calculations included all campus growth envisioned through 2015-16 and the proposed project is within the scope of this prior analysis. Therefore, the air quality impact of the TACs from the proposed project would be less than significant.

Cumulative Development

The 2003 LRDP EIR found that implementation of the 2003 LRDP, in conjunction with other regional development, would contribute to emissions of criteria pollutants for which the region is in non-attainment status and could hinder attainment efforts (LRDP Impact 4.3-6). The YSAQMD has accounted for a certain amount of regional growth in the existing Sacramento Regional Clean Air Plan. This plan is currently being updated to extend beyond the year 2005, and campus growth under the 2003 LRDP will be incorporated in the plan update. LRDP Mitigation 4.3-6, included in the proposed project, requires implementation of LRDP Mitigation 4.3-1 (a-c). Regardless, because the YSAQMD remains a nonattainment area for ozone, this cumulative impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- e) The 2003 LRDP EIR concluded that odor impacts associated with development under the 2003 LRDP would be less than significant. The proposed project involves relocation of existing uses that do not generate objectionable odors and would thus not be expected to create any additional sources of objectionable odor. There would be no odor impact.

Summary

Mitigation measures 4.3-1 (a-c), 4.3-3 (a, b), 4.3-6, and 4.3-8 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of air quality impacts to the extent feasible. The proposed project would not exceed the levels of significance of air quality impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant air quality impacts that were not previously addressed.

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 agricultural lands that include remnant riparian areas and urban 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; (6) and 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: the northern California black walnut, burrowing owl, Swainson's hawk, valley elderberry longhorn beetle, California tiger salamander, chinook salmon, giant garter snake, steelhead, and the northwestern pond turtle.

Project Site

Physical Sciences Expansion Site

The proposed facilities at this site would be constructed entirely within an area that is already developed with structures. The site was surveyed on July 8, 2004 and contains no elderberry shrubs. No additional survey for sensitive species was necessary for this site because it is fully developed. A tree survey was conducted and the following trees were found on the site (Table 4):

Table 4
Results of Tree Survey of Physical Sciences Expansion Site

Species	Number Present on Site	Number to be Removed
Coast redwood (<i>Sequoia sempervirens</i>)	3	3
Western redbud (<i>Cercis canadensis</i>)	1	1
Norway maple (<i>Acer platanoides</i>)	1	1
Chinese hackberry (<i>Celtis sinensis</i>)	9 (7 specimen trees)	2 specimen trees
Mulberry (<i>Morus</i> sp.)	1	1
Glossy privet (<i>Ligustrum lucidum</i>)	1	1
Strawberry tree (<i>Arbutus unedo</i>)	1	1
Chinese tallow (<i>Sapium sebiferum</i>)	1	1
Shiny xylosma (<i>Xylosma congestum</i>)	1	1
Aleppo pine (<i>Pinus halepensis</i>)	1 (specimen tree)	0
Total Trees	20	12

Source: UC Davis, 2004.

Service Unit Park Site

The proposed site is currently used for teaching and research fields and supports no natural vegetation. Most of the site is cropland/pastureland that was used in the past for production of alfalfa and oats. The site has been fallow for several years and has been used for manure spreading. The center portion of the western third of the site is orchard/vineyard that is used for cultivation of roses. A survey for elderberry shrubs conducted on, and within 100 feet of the site found five elderberry bushes beyond the boundaries of the site, but none showed exit holes produced by valley elderberry longhorn beetle (VELB) (Fulks 2004b). The project site could provide suitable foraging habitat for burrowing owl, but because it is routinely plowed, it likely would not be used for nesting. The site is also potential foraging area for Swainson's hawk. There are no wetlands, ponds or other water bodies on site. Site surveys conducted in fall of 2004 showed that the site had recently been disked except for a small portion of the site that is used for rose cultivation. The site has previously been surveyed for rare plants (see Figure 4.4-2 of the 2003 LRDP EIR) and no special status plant species were found to be present on the site. Species that require streams or riparian habitat (*i.e.* Chinook salmon, steelhead, giant garter snake and northwestern pond turtle) would not be present on site.

Habitat

The following habitat is present on the Physical Sciences Expansion site:

Urban Landscaping/Developed. Urban habitat includes landscaped areas that are vegetated with trees, shrubs, and maintained grassy areas. While the University Arboretum contains a significant collection of botanical specimens, it is included within this habitat designation because it is essentially a landscaped park with many non-native plantings, and is subject to regular maintenance as well as high frequency use by people (picnicking, jogging, walking, etc.).

Central campus landscaped areas, with their abundance of mature trees, provide wildlife habitat values (food and cover) within the developed areas of central campus. Many species of birds (including the Swainson's hawk) are known to nest in central campus trees. Other resident and

migratory hawks, owls, songbirds, and woodpeckers are also known to use landscaped areas on the campus for nesting, food, and cover.

The following habitat is present on the Service Unit Park site:

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. It has been several years since the Service Unit Park site has been used by the Animal Sciences Department for cultivation of oats and alfalfa.

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.

Orchard Vineyard (Woody Agricultural Cover Types). Orchard Vineyard habitat is dominated by trees or vines or other woody shrubs such as roses and has a relatively low value for wildlife because understory vegetation that would provide food and cover for wildlife is not allowed to grow. Species such as ground squirrels, American crow, and western scrub-jay that use this habitat are often considered agricultural pests.

Special Status Species

No special status plant species are expected to occur on either site. Burrowing Owl and Valley Elderberry Longhorn Beetle could potentially occur on the Service Unit Park site. Also, Swainson's Hawk are known to nest in the vicinity of both the Service Unit Park and Physical Sciences Expansion sites.

Burrowing Owl. The burrowing owl (*Speotyto cunicularia*) is fully protected against take pursuant to Section 3503.5 of the California Fish and Game Code and is a CDFG species of special concern. Burrowing owls are small birds with the relatively unique habits of being active during the day as well as in the evening and nesting underground. They typically use burrow systems formerly occupied by ground squirrels or other large burrow dwelling rodents. Their diet is usually dominated by insects but may also include small mammals, reptiles, and amphibians. Burrowing owls generally forage in open fields with relatively sparse, short vegetation; their foraging ability is disrupted by dense, tall vegetation.

Nesting burrowing owls have been recorded at various central campus locations since 1981. No information is available on the status of burrowing owls on the campus prior to 1981. A significant reduction in the number of breeding pairs has occurred since 22 pairs were observed in 1981. Only 12 pairs were observed in 1986, and breeding was not observed on the central campus from 1992 through 1997 (Jones and Stokes 1992-2000). During the last decade, nesting burrowing owls have been observed adjacent to the University Airport's runway (1 pair) and sporadically on teaching and research fields west of SR 113 between Russell Boulevard and Hutchison Drive (1-2 pairs). The Service Unit Park site is located west of the airport about 1,000 feet from the runway. Dispersed young from other areas could become established on previously unoccupied campus sites. Ground squirrel colonies and scattered burrows along the edges of fields and roads represent potential nesting habitat for the burrowing owl.

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. Most of the Swainson's hawk nests are located in the Putah Creek riparian corridor. The nest locations closest to project facilities are described below.

Physical Sciences Expansion - There are two nest sites within ½ mile of the Physical Sciences Expansion project that have been used by Swainson's Hawks during the last decade. All are over ¼ mile away and are completely screened from the project site by intervening buildings, vegetation and trees. In addition, both are sites with high levels of human activity: one is in a pine tree surrounded by existing campus buildings and next to a major campus road, and the second is adjacent to the Union Pacific Railroad tracks.

Service Unit Park - Over the last decade, Swainson's Hawks have nested within ½ mile of the project site along Putah Creek and in a tree within existing development to the northeast. This latter tree is approximately ¼ mile from the project site and is screened from the site by intervening buildings, vegetation and trees. This nest tree is at a site with high levels of human activity. It is immediately adjacent to the campus swine facility, feed lot, and feed mill. It also is approximately 100 yards from the north end of the University Airport runway. Swainson's Hawks have also nested at several locations

along Putah Creek. All are over ¼ mile away and are completely screened from the project site by intervening buildings, vegetation and trees.

Birds nesting along the creek are habituated to a moderate level of human activity including agricultural operations and University Airport operations.

Valley Elderberry Longhorn Beetle (VELB). The VELB (*Desmoceros californicus dimorphus*) is listed as a threatened species under the Federal Endangered Species Act (FESA). This species requires its host plant, the Mexican elderberry shrub (*Sambucus* spp.), for its complete life cycle. The USFWS considers all elderberry shrubs within the historic range of VELB (the Central Valley and foothills up to 2,000 feet) as potential habitat for this species. Project-specific surveys have been conducted for the Mexican elderberry shrub on campus. Elderberry shrubs occur primarily along both forks of Putah Creek. Scattered shrubs and shrub clusters also are located throughout the campus primarily along fences and power lines where fruit-eating birds may deposit seeds. There are no elderberry bushes at the Physical Sciences Expansion site (Fulks 2004a). Five elderberry bushes are located adjacent to the Service Unit Park site, but none shows evidence of use by VELB (Fulks 2004b).

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, coastal, etc.) 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 local applicable policies protecting biological resources.

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. 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 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. LRDP mitigation measures that are relevant to the project reduce the magnitude of cumulative impacts 4.4-12 and 4.4-14, but these impacts are 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.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
BIOLOGICAL RESOURCES			
4.4-1	Development allowed under the 2003 LRDP could result in the loss of special-status plant species or species that may be added to the special-status plant list in the future.	PS	LS
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
4.4-3	Development allowed under the 2003 LRDP would result in the conversion of approximately 65 acres of Agricultural Land and Ruderal/Annual Grassland habitat suitable for nesting burrowing owls to campus-related development.	PS	LS
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
4.4-6	Development allowed under the 2003 LRDP would result in the loss of potential habitat for the VELB.	PS	LS
4.4-11	Development under the 2003 LRDP could result in the removal of trees recognized to meet the campus' standards for important trees, including: a. Heritage Trees: Healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 54 inches from the ground. b. Specimen Trees: Healthy trees or stands of trees that are of high value to the campus due to their size, species, extraordinary educational and research value, and/or other exceptional local importance.	PS	a. SU b. 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
4.4-14	Development allowed under the 2003 LRDP could contribute to the cumulative loss of valley elderberry beetle habitat.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

BIOLOGICAL RESOURCES

- 4.4-1(a) During the project planning phase, the campus shall conduct a rare plant survey if the site is previously undeveloped and is in a valley-foothill riparian, open water pond, riverine, wetland or ruderal/annual grassland or habitat. Surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted during the blooming period of the plant species with potential to occur in the area, as listed in Table 4.4-2. If these surveys reveal no occurrences of any species, then no further mitigation would be required.
- 4.4-1(b) Should surveys determine that special-status plant species are present, measures will be taken to avoid the plants and the associated habitat necessary for long-term maintenance of the population. If avoidance is not feasible the campus will provide off-site compensation at a 1:1 ratio. Off-site compensation will include preservation of existing populations at other sites and/or enhancement of the affected species. The campus will preserve either an equal number of the affected plants or an equal area of the affected species habitat. The campus shall also develop and fund the implementation of a plan to manage and monitor the preserve to ensure the long-term survival of the preserved population.
- 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.
- 4.4-3(a) The Russell Ranch Mitigation Area shall include at least 195 acres of grassland habitat suitable for use by burrowing owls. Ground squirrels in the mitigation area shall not be subject to control measures and will be allowed to fluctuate in response to local conditions. Artificial burrows may be installed if ground squirrel populations are not providing a sufficient number of burrows to support burrowing owls.
- 4.4-3(b) The campus shall survey proposed development areas with potential habitat for the presence or absence of burrowing owls.
- 4.4-3(c) The campus shall conduct a pre-construction survey of proposed project sites during the breeding season (from approximately February 1 through August 31), consistent with CDFG guidelines, in the same calendar year that construction is planned to begin. The survey shall be conducted by a qualified biologist to determine if any burrowing owls are nesting on or directly adjacent to any proposed project site. If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.
- If the pre-construction breeding season survey does not identify any nesting raptor species on the project site, then no further mitigation would be required. However, should any burrowing owls be found nesting on the project site, then LRDP Mitigation 4.4-3(d) shall be implemented.

2003 LRDP EIR MITIGATION MEASURES

BIOLOGICAL RESOURCES

- 4.4-3(d) During the breeding season, the campus, consistent with CDFG guidelines, shall not disturb an occupied burrow while there is an active nest and/or juvenile owls are present. Avoidance shall include the establishment of a non-disturbance buffer zone around the nest site consistent with CDFG guidelines. The buffer zone shall be delineated by highly visible temporary construction fencing. The occupied nest site shall be monitored by a qualified biologist to determine when the juvenile owl is fledged and independent. Disturbance of an occupied burrow shall only occur outside the breeding season and when there is no nest or juvenile owl based on monitoring by a qualified biologist.
- Based on approval by CDFG, pre-construction and pre-breeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance. These include the following measures:
 - Obviously inactive burrows in the project area will be closed. Active or potentially active ground squirrel burrows will be monitored to confirm use by ground squirrels and not by burrowing owls before ground squirrels are removed and the burrow is closed. One-way doors will be used on active burrows if use by ground squirrels cannot be confirmed.
 - The owls will be displaced from the occupied burrows according to the CDFG burrowing owl guidelines. The owls will be displaced from their burrows by installing one-way exit doors in occupied or potential burrows within the area of disturbance. After 48 hours with the doors in place, the burrows will then be closed to prevent reoccupation by owls.
 - Where feasible, artificial burrows will be provided in adjacent suitable habitat consistent with CDFG guidelines.
- 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:
- A bachelor's degree in biology or a related field;

2003 LRDP EIR MITIGATION MEASURES

BIOLOGICAL RESOURCES

- 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).

4.4-6(a) During the project design stage and as a condition of project approval, the campus shall:

- Conduct a project-specific survey for all potential VELB habitat, including a stem count and an assessment of historic or current VELB use; and
- Avoid and protect all potential VELB habitat within a natural open space area where feasible

4.4-11 Before a project is approved under the 2003 LRDP, the campus will perform a tree survey of the project site. Grounds, the Office of Resource Management and Planning, and the Office of Architects and Engineers will provide input about tree classifications and will modify project design to avoid important trees if feasible. If a project cannot avoid an important tree, the following will apply:

- a. If a project would necessitate removal of a Heritage Tree, no mitigation would be available to fully mitigate the impact, and the impact would be significant and unavoidable. However, implementation of Mitigation 4.4-2 would restore Valley Foothill Riparian Woodland habitat at Russell Ranch, and plantings in this area would include valley oaks.
- b. If a project would necessitate removal of a Specimen Tree, the project would relocate the tree if feasible, or would replace the tree with the same species or species of comparable value (relocation or replacement should occur within the project area if feasible). This would reduce the impact to a less-than-significant level.

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.

4.4-14 Implementation of LRDP Mitigations 4.4-6(a) and (b), in combination with the Yolo County NCCP and Solano County HCP, including compliance with the regulatory and permitting requirements imposed by the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

7.4.4 Environmental Checklist and Discussion

BIOLOGICAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	Less than Significant Impact	No Impact
Would the project...					
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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 Physical Sciences Expansion site is already completely developed and no rare plants are present on the site. The Service Unit Park site was previously surveyed for rare plants, and none are present on the site. There would thus be no impacts on special-status plants. The project has thus already complied with LRDP Mitigation 4.4-1(a).

Wildlife

Swainson's Hawk: The 2003 LRDP EIR found that development under the 2003 LRDP would result in conversion of Agricultural Land, which would result in loss of foraging habitat for Swainson's hawk, and that development could also interfere with nesting efforts of the hawks or other birds of prey (LRDP Impacts 4.4-2, 4.4-4 4.4-5, and 4.4-12).

Construction of the Physical Sciences Expansion would not result in loss of agricultural land, but Swainson's hawks have historically nested in the Central Campus area, and hawks could nest in trees around the Physical Sciences Expansion site before the start of construction. The closest existing nest sites are over ¼ mile away, and due to the distance, screening, and habituation to existing levels of activity, if birds use these existing sites during construction of the Physical Sciences Expansion, no impact is expected.

Construction of the Service Unit Park would result in the loss of 24 acres of teaching and research fields, and could affect nesting Swainson's hawks, if any hawks nest within trees near the project site before the start of construction. The closest existing nest site is about ¼ mile from the project site, north of the airport runway. Due to the distance, screening, and habituation to existing levels of activity, if birds use this existing site during construction of Service Unit Park, no impact is expected. Nesting sites along Putah Creek are over ¼ mile away from the site, and due to the distance, screening, and habituation to existing levels of activity, if birds use these sites along the creek during construction of the Service Unit Park, no impact is expected.

Implementation of LRDP Mitigation 4.4-2 would ensure that foraging habitat for Swainson's hawk is preserved on campus and would mitigate the loss of foraging habitat due to development through the establishment of 650 acres of mitigation lands. Implementation of LRDP Mitigation Measures 4.4-4 (a)-(b) and 4.4-5 requires protection of active raptor nests through pre-construction surveys and avoidance of construction that would affect raptors during breeding season. Cumulative loss of agricultural land is addressed through implementation of LRDP Mitigation Measure 4.4-12. These mitigation measures would reduce LRDP impacts to less than significant, but cumulative loss of agricultural land in the region was determined to be a cumulatively significant impact. The proposed project does not alter the cumulative impact of the LRDP, and analysis of this impact in the 2003 LRDP EIR is sufficient.

Burrowing Owl: The 2003 LRDP EIR found that development under the 2003 LRDP would result in conversion of teaching and research fields, which would result in loss of habitat suitable for nesting burrowing owls (LRDP Impact 4.4-3).

Construction of the Physical Sciences Expansion would not result in loss of agricultural land, and the site does not contain habitat suitable for burrowing owls.

Construction of the Service Unit Park would result in the loss of 24 acres of fields, and burrowing owls have been found as close as the runway of the airport, which is just on the opposite side of Hopkins Road from the project site. The site could be suitable foraging habitat for burrowing owls, and while it appears that none are currently present on the site, owls could nest on the site before construction begins.

Implementation of LRDP Mitigation Measures 4.4-3 (a)-(d) would ensure that habitat for burrowing owls would be preserved and preconstruction surveys shall be conducted at the Service Unit Park. If any occupied burrows of burrowing owls were found on site, they would not be disturbed. If necessary, pre-construction and pre-breeding season exclusion measures would be implemented. Cumulative loss of agricultural land, which provides habitat for burrowing owls, is addressed through implementation of LRDP Mitigation Measure 4.4-12. These mitigation measures would reduce LRDP impacts to less than significant, but cumulative loss of agricultural land in the region was determined to be a

cumulatively significant impact. The proposed project does not alter the cumulative impact of the LRDP, and analysis of this impact in the 2003 LRDP EIR is sufficient.

Valley Elderberry Longhorn Beetle (VELB): Because there are no elderberry bushes on the Physical Sciences Expansion site, there would be no impacts to the VELB from construction of that facility. However, there are five elderberry bushes located along the margins of the Service Unit Park site. The 2003 LRDP EIR found that development under the 2003 LRDP would result in loss of potential habitat for VELB (LRDP Impact 4.4-6). All existing elderberry bushes on the site would be preserved in place, which would comply with LRDP Mitigation Measures 4.4-6 (a). It would not be necessary to transplant elderberry bushes to the Russell Ranch Mitigation Area in compliance with LRDP Mitigation Measure 4.4-6 (b). Because construction at the project site would not result in loss of elderberry bushes it would not contribute to the cumulative loss of VELB habitat.

- b,c) There are no riparian or wetland areas on either site, thus the project would have no impact on these resources.
- d) The Putah Creek corridor 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 site for the Physical Sciences Expansion is adjacent to the Arboretum Waterway, but is buffered from the waterway by existing landscaping to the south of the site; the site is over a mile from the south fork of Putah Creek. The Service Unit Park site is about 1,300 feet from the Putah Creek corridor. 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) Pursuant to Mitigation Measure 4.4-11 in the 2003 LRDP EIR, the campus adheres to a tree protection plan. The campus departments have coordinated to perform a tree survey of the project site. There are 20 trees at the Physical Sciences Expansion site, 12 of which would have to be removed for the project (see Table 4). Two of the trees to be removed are specimen Chinese hackberry trees. To the extent feasible site plans were adjusted to avoid important trees. The project was designed to preserve seven Chinese hackberries (five of which are specimen trees) and a specimen Aleppo pine, all of which face California Avenue. No trees would need to be removed for construction of the Service Unit Park. Loss of two specimen trees at the Physical Sciences Expansion site would be a potentially significant impact, however, LRDP Mitigation 4.4-11(b), which is relevant to the project, would require relocation or replacement of specimen trees and would reduce the impact to less than significant. Replacement of the two specimen trees would take place as part of the landscaping plan for the Physical Sciences Expansion site.
- 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 VELB at Russell Ranch. None of the project facilities is located at Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP.

Summary

Mitigation measures 4.4-1 (a, b) 4.4-2, 4.4-3 (a-d), 4.4-4 (a, b), 4.4-5, 4.4-6 (a), 4.4-11, 4.4-12, and 4.4-14 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of impacts on biological resources to the extent feasible. The proposed project would not exceed the levels of significance of biological resource impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant biological resource impacts that were not previously addressed.

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).

Physical Sciences Expansion Site

The proposed project would alter approximately 2.6 acres of previously developed land within the core campus at UC Davis, where O&M Buildings 3280, 3263, 3408, 4060, 4443, 4481, 4543, 4575 and HA-2 are currently located. Buildings 3280 and 3263 were constructed in 1955. Building HA-2 was constructed in 1914. A Historic Resources Report was performed for the buildings in the O&M Complex that are over 50 years old. Findings from the reports indicate that these buildings do not appear to be eligible for listing in the National Register of Historic Places, nor do they appear to meet the criteria of the California Register of Historic Resources. There are no historic resources adjacent to the site. (JRP Historical Consulting Services 2003)

An archaeological investigation of the proposed site of the Physical Sciences Expansion project was conducted to identify cultural resources in the project area. The investigation consisted of archival research, surface field survey, and limited subsurface excavations (Nadolski 2003). The UC Davis LRDP EIR identifies archaeologically sensitive areas on the UC Davis campus

and in the vicinity. These areas include the original Putah Creek channel and locations next to known archaeological sites and cultural resources. The proposed Physical Sciences Expansion project is located within an archaeologically sensitive area as defined by the LRDP EIR as it borders the original Putah Creek stream channel next to the Arboretum waterway and is in close proximity to a known archaeological site recorded as “P-48-22.” Site P-48-22 is located approximately 375 feet southeast of the project area across the Arboretum waterway and was recently identified during work for the South Entry Parking Structure and the Mondavi Center for the Arts. There are additional documented and undocumented prehistoric archaeological sites located within a mile of the project. Subsurface testing at the project site found no evidence of historic or prehistoric materials.

Service Unit Park

The proposed project would alter approximately 24 acres of previously disturbed teaching and research fields within the West Campus area of UC Davis. The site has been in agricultural use, mainly as a research field. There are no buildings located on the site, although a small, nondescript wooden framed structure constructed in 1924 and used by the Department of Bee Science is located adjacent to the northwest corner of the Service Unit Park site. There is no available information regarding the individuals responsible for the actual design and/or construction of the structure (Pacific Legacy, 1998).

An archaeological investigation of the proposed site was conducted to identify cultural resources in the project area. The investigation consisted of archival research, surface field survey, and limited subsurface excavations. The proposed project site is located beyond the archaeologically sensitive zone identified in the 2003 LRDP, the area adjacent to Putah Creek. There is, however, an archaeological site (CA-SOL-271) located along Putah Creek approximately ½ mile southeast of the project site. Site CA-SOL-271 may be described as a residential and tool manufacturing base camp that includes human burials. The site is reported to have been severely impacted by residential construction and agricultural activity (e.g., construction of irrigation ditches and plowing). Subsurface testing at the project site found no evidence of historic or prehistoric materials.

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 Guideline §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 Guideline § 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 they would:

- cause a significant adverse change in the significance of a historical resource as defined in CEQA Guideline § 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 Guideline Section 15064.5(a)(3) generally, a lead agency should find that a property is historically significant if it determines that it 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. 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 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. LRDP mitigation measures that are relevant to the project 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.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
CULTURAL RESOURCES			
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	S	SU

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
CULTURAL RESOURCES			
	documentation and data recovery.		
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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 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

2003 LRDP EIR MITIGATION MEASURES

CULTURAL RESOURCES

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 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.

4.5-3 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 Mitigation 4.5-1 (a)
- (ii) For an archaeological site, a program of research-directed data recovery shall be conducted and reported, consistent with LRDP Mitigation 4.5-1(b).

4.5-4(a) Implement LRDP Mitigation 4.5-1 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.

2003 LRDP EIR MITIGATION MEASURES

CULTURAL RESOURCES

- 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.

7.5.4 Environmental Checklist and Discussion

CULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) Based on the findings of the Historical Resources Report prepared for the Physical Sciences Expansion site, none of the buildings within the O&M Complex appear to be eligible for listing in the NRHP, nor do they appear to meet the criteria of the CRHR, and thus, they are not historical resources for the purposes of CEQA. Therefore, although buildings 3263, 3408, 4060, 4443, 4481, 4543, 4575 and HA-2 and a portion of Building 3280 would be demolished, there would be no impacts to historical resources resulting from the proposed Physical Sciences Expansion.

There are no buildings currently on the Service Unit Park site. The proposed project does not include any alteration or removal of the small building used by the Department of Bee Science. Therefore, the structure does not require any protective measures and no additional historical survey is recommended. No impacts to historical resources would result from the proposed project and the project does not contribute to cumulative impacts on historic resources.

- b) The 2003 LRDP EIR identified that development under the 2003 LRDP could damage or destroy an archaeological resources as a result of grading, excavation, ground disturbance or other project development (LRDP Impact 4.5-1). This risk is highest on campus along the historic banks of the tributaries and slough channels of Putah Creek and in the vicinity of previously discovered archaeological sites. In compliance with 2003 LRDP Mitigation 4.5-1(a), the campus retained a qualified archaeologist to perform an archaeological survey of the project area, as discussed above. No cultural resources of concern were identified within either project site as a result of the investigations, and no additional archaeological investigations are recommended prior to project implementation (Pacific Legacy, 2003).

In compliance with LRDP Mitigation 4.5-1(b)(ii), an archaeological monitoring plan would be developed and implemented during construction of the Physical Sciences Expansion project and the Service Unit Park project to ensure that, in the remote possibility that any archaeological materials are uncovered during project construction, all work in the immediate vicinity would stop until a qualified archaeologist can assess the find. With implementation of LRDP mitigation measures, this impact would be reduced to less than significant.

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). As any disturbance of native soils carries the potential to result in impacts to archaeological resources, the proposed project could contribute to this impact. LRDP Mitigation 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. However, the University cannot ensure that other regional jurisdictions would act to protect cultural resources. In addition, there is the potential that significant archaeological resources on campus and/or in the region could not be protected. Because this impact cannot be fully mitigated, this cumulative impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- 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), which is relevant to 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.

Summary

Mitigation measures 4.5-1, 4.5-3, 4.5-4, and 4.5-5 from the 2003 LRDP EIR are relevant to the proposed project and would reduce the significance of impacts on cultural resources to the extent feasible. The proposed project would not exceed the levels of significance of cultural resource impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant cultural resource impacts that were not previously addressed.

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 predominant soil constraint to construction on campus is soil shrink-swell potential (the potential for soil volume to change with a loss or gain in moisture).

A series of low foothills, including the Dunnigan Hills, the Capay Hills, and the English Hills, lies 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

Physical Sciences Expansion Site

The proposed project is located within previously developed land in the core campus at UC Davis currently occupied by existing O&M Buildings 3280, 3263, 3408, 4060, 4443, 4481, 4543, 4575 and HA-2. A site-specific geotechnical investigation has not been performed for the project, but would be completed before detailed engineering. Nearby geotechnical studies for other campus projects have revealed subsurface conditions that can be addressed with an engineered foundation using fairly standard construction techniques.

Service Unit Park Site

The site is topographically flat and undeveloped, and is currently used as agricultural research fields. A site-specific geotechnical investigation has not been performed for the project, but would be completed before detailed engineering. Nearby geotechnical studies for other campus

projects have revealed subsurface conditions that can be addressed with an engineered foundation using fairly standard construction techniques.

7.6.1 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 this standard 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.

7.6.2 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. No significant impacts identified in the 2003 LRDP EIR related to geology, soils, and seismicity are relevant to the proposed project and there are no mitigation measures in the 2003 LRDP EIR that are applicable to the proposed project.

7.6.3 Environmental Checklist and Discussion

GEOLOGY, SOILS, & SEISMICITY					
Would the project...	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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,i) The UC Davis campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone, and the closest known active fault rupture zones are over 30 miles away. Therefore, no impact would occur and no further analysis is required.

a,ii) The campus is located in a seismically active area that could experience ground shaking, liquefaction, and settlement. The peak ground acceleration for the main campus is estimated to be 0.2 to 0.3g, and 0.3 to 0.4g on the western portion of Russell Ranch. This intensity of seismic groundshaking has the potential to dislodge objects from shelves and to damage or destroy buildings and other structures. In the case of such a seismic event, people on campus and in the area would be exposed to these hazards.

The campus minimizes hazards associated with damage or destruction to buildings and other structures by reviewing and approving all draft building plans for compliance with the California Building Code (CBC), which includes specific structural seismic safety provisions. The campus also adheres to the University of California Seismic Safety Policy,

which requires anchorage for seismic resistance of nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake. Campus EH&S provides guidance for preparing department-level Illness and Injury Prevention Plans that emphasize methods for minimizing seismic hazards in laboratories, for example, by properly securing chemical containers and gas cylinders. Each campus department has a Safety Coordinator who develops and maintains a departmental emergency response plan. The departmental emergency response plans must be submitted to the Emergency Preparedness Policy Group for annual review to assure consistency with the campus Emergency Operations Plan, which includes seismic safety and building evacuation procedures. The emergency procedures incorporated into the departmental emergency response plans further reduce the hazards from seismic shaking by preparing faculty, staff, and students for emergencies. All of these procedures would be implemented as part of the proposed project at both sites (Physical Sciences Expansion and Service Unit Park). Therefore, the project-level impact associated with risks due to seismic ground shaking would be less than significant. In addition, it is reasonable to assume that all regional jurisdictions would enforce the seismic provisions of the CBC, and therefore the cumulative impact is also considered less than significant.

- a,iii) 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). Furthermore, as discussed above for (a,ii), campus policy requires compliance with the CBC and the University of California Seismic Safety Policy, which include structural and nonstructural seismic safety provisions. 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. Geotechnical investigations would address the potential for liquefaction, lateral spreading, and other types of ground failure. Therefore, because, in compliance with campus procedure, the project at both sites would comply with the CBC and the University of California Seismic Safety Policy, impacts associated with seismic-related ground failure would be less than significant.

The Davis area subsided by approximately 2 inches between 1999 and 2002. Because the subsidence is regional, unlike local differential settlement, it would not affect building foundations. Subsidence can adversely affect utilities such as storm drains which rely on gradient for gravity-driven flow if the differential subsidence across the length of the pipeline causes the gradient of the pipelines to change direction. On the campus, the differential subsidence is about 0.4 inch per mile. Thus, over a period of 10 years, the gradient of a pipeline could change by as much as 4 inches per mile. Gravity-driven pipelines typically used for wastewater and storm water are designed with gradients between 0.5 and 1 percent (27 to 53 feet drop per mile). Given these gradients, the small potential change of about 4 inches per mile over a period of 10 years would not affect the functioning of existing and proposed storm drains or other utilities.

- a,iv) The UC Davis campus and the surrounding area are characterized by flat topography and therefore would not be subject to landslides. Therefore, no impact would occur and no further analysis is required for either project.
- b) The potential for soil erosion is addressed in item (c) in Section 7.8 Hydrology & Water Quality.
- c) See the discussion in item (a,iii) above.

- 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 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 at both sites would comply with the CBC, which would ensure that this impact is less than significant.

- e) The 2003 LRDP EIR identifies that an impact would result if soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. No septic tanks or alternative wastewater disposal system are included at either site, and therefore, there would be no impacts resulting from implementation of the project.

Summary

No mitigation measures from the 2003 LRDP EIR are relevant to the proposed project. The proposed project would not exceed the levels of significance of cumulative geology, soils, and seismicity impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant impacts that were not previously addressed.

7.7 HAZARDS & HAZARDOUS MATERIALS

7.7.1 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. Benchmarking performed by the Campus Safety, Health, and Environmental Management Association (CSHEMA) in 2000 honored the UC Davis EH&S with a "Unique or Innovative Program Award" for its daily on-call program.

Project Site

Physical Sciences Expansion Site

A preliminary site investigation was conducted for the entire existing O&M Facility site in June 2003. The investigation was performed as part of the due diligence process and to identify any

environmental issues that might impact the project. A summary of the findings of the investigation for the facilities that would be affected by the proposed project is presented below:

Chemical Storage Building (CAAN 3263)

This building was used to store acids and solvents in closed containers. No prior documentation of spillage was found nor was staining of the concrete floor noted. However, there are floor drains that lead to a dry well outside of the structure. The dry well was located at the southeast corner of the building and consisted of a rock filled, 42-inch diameter by 20-foot deep hole. It is not known if the dry well was properly abandoned; however, the campus Office of Environmental Health and Safety indicate that the drains were plugged several years ago.

In addition to the above area, it is possible that the buildings themselves have asbestos-containing materials within their structures. Most of the O&M buildings have an asbestos/concrete exterior siding. The oldest structure, HA2, was constructed in 1914 (CAAN 3257A) with several structures constructed in 1955. It is likely that most, if not all, of the buildings contain these materials.

Service Unit Park

The proposed site is currently undeveloped agricultural land. Most of the site is cropland/pastureland that was used in the past for production of alfalfa and oats. The site has been fallow for several years and has been used for manure spreading. The center portion of the western third of the site is orchard/vineyard that is currently being used for cultivation of roses. There are no buildings located on the property, so potential use of hazardous materials on the site would have been limited to use of agricultural chemicals. None of the adjacent facilities have been identified as contaminated sites.

Schools and Childcare Centers near Campus

The 2003 LRDP EIR identifies the following schools and childcare centers within ¼ mile of campus: Martin Luther King High School on B Street in downtown Davis, Emerson Junior High School on Calaveras Avenue, Rivendell Nursery School, Davis Montessori School, and Redbud Montessori School north of the West Campus, and the Grace Valley Christina Academy on County road 98. No proposed Davis Joint Unified School District school sites are within ¼ mile of the campus. The Neighborhood Master Plan (NMP) may include elementary or high school facilities, but they are over a mile from the project site. Childcare centers are currently located on the campus, and development under the 2003 LRDP and associated with the NMP could include construction of additional childcare facilities.

7.7.2 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.

7.7.3 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. As analyzed in Section 4 of this Initial Study, the proposed project is within the scope of analysis in the 2003 LRDP EIR. Potentially significant hazards and hazardous materials 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, LRDP Impacts 4.7-1, 4.7-2, 4.7-3, 4.7-4, 4.7-5, 4.7-6, 4.7-8, 4.7-9, 4.7-12, 4.7-13, 4.7-15, and 4.7-17, presented below, are considered less than significant prior to mitigation, but the 2003 LRDP EIR identified mitigation to further reduce the significance of these impacts. Less than significant impacts without mitigation measures are not presented here.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
HAZARDS & HAZARDOUS MATERIALS			
4.7-1	Implementation of the 2003 LRDP would increase routine hazardous chemical use on campus by UC Davis laboratories and departments and in maintenance and support operations, which would not create significant hazards to the public or the environment.	LS	LS
4.7-2	Implementation of the 2003 LRDP could increase routine generation of hazardous wastes on campus by UC Davis laboratories and departments and from maintenance and support operations, which would not create significant hazards to the public or the environment.	LS	LS
4.7-3	Implementation of the 2003 LRDP could increase routine use of radioactive materials on campus at UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS
4.7-4	Implementation of the 2003 LRDP could increase routine generation of radioactive wastes on campus by UC Davis laboratories, which would not create significant hazards to the public or the environment.	LS	LS

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
HAZARDS & HAZARDOUS MATERIALS			
4.7-8	Implementation of the 2003 LRDP would increase the routine transport of hazardous materials to and from campus, which would not significantly increase hazards to the public or the environment.	LS	LS
4.7-9	Implementation of the 2003 LRDP would not 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.	LS	LS
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
4.7-13	Demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to contaminated building materials.	LS	LS
4.7-15	Implementation of the 2003 LRDP would include campus development within 2 miles of public use airports, which could result in safety hazards for people residing or working in the area, and would include lighting on recreation fields that could result in a hazard for aircraft.	PS	LS
4.7-17	Campus development under the 2003 LRDP could physically interfere with the campus' Emergency Operations Plan.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

HAZARDS & HAZARDOUS MATERIALS

- | | |
|----------|---|
| 4.7-1 | The campus shall continue to implement the same (or equivalent) safety plans, programs, practices, and procedures related to the use, storage, and disposal of hazardous chemical materials during the 2003 LRDP planning horizon, including, but not necessarily limited to, the Business Plan, Hazardous Materials Communication Program, Chemical Inventory System, CUPA Self-Audit program, Injury and Illness Prevention Program, Chemical Hygiene Plans, Medical Surveillance Program, Chemical Safety Advisory Committee, Chemical Carcinogen Safety Program, and EH&S audits and safety training. These programs may be replaced by other programs that incorporate similar health and safety measures. |
| 4.7-2(a) | Implement LRDP Mitigation 4.7-1. |
| 4.7-2(b) | The campus shall continue to implement the same (or equivalent) hazardous waste management programs during the 2003 LRDP planning horizon, including, but not necessarily limited to, hazardous waste storage and handling procedures, the waste minimization program, the pretreatment program, and the Waste Exclusion Program. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures. |

2003 LRDP EIR MITIGATION MEASURES

HAZARDS & HAZARDOUS MATERIALS

- 4.7-3(a) Implement LRDP Mitigation 4.7-1.
- 4.7-3(b) The campus shall continue to implement the same (or equivalent) Health Physics Program during the 2003 LRDP planning horizon. This program may be subject to modification as more stringent standards are developed or if the program becomes obsolete through replacement by other programs that incorporate similar health and safety protection measures.
- 4.7-4(a) Implement LRDP Mitigation 4.7-1.
- 4.7-4(b) Implement LRDP Mitigation 4.7-3 (b).
- 4.7-4(c) The campus shall continue to implement measures to reduce the generation of radioactive waste, including the requirement that employees working with radioactive materials be trained in radioactive waste minimization, EH&S online information about radioactive waste minimization, and exploration of waste minimization techniques by EH&S staff.
- 4.7-8 The campus shall continue to require that packaging of chemicals to be transported on public roads conform with all legal requirements.
- 4.7-9 Implement LRDP Mitigations 4.7-1 through 4.7-8.
- 4.7-12 The campus shall perform due diligence assessments of all sites where ground-disturbing construction is proposed.
- 4.7-13 The campus shall survey buildings for potential contamination before any demolition or renovation work is performed.
- 4.7-15(b) Lighting for recreation fields in the NMP and other campus facilities will be tested by night flights, and adjusted as necessary to eliminate glare that could pose a hazard for aircraft.
- 4.7-17 To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available due to construction-related road closures, the campus shall provide a temporary traffic signal, signal carriers (i.e., flag persons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, the campus shall provide appropriate signage indicating alternative routes. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, the campus shall inform emergency services, including the UC Davis Police and Fire Departments, and American Medical Response, of the closures and alternative travel routes.

7.7.4 Environmental Checklist and Discussion

HAZARDS & HAZARDOUS MATERIALS

HAZARDS & HAZARDOUS MATERIALS	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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) During construction, workers could be exposed to soil contaminants during ground disturbing activities, including pesticides contained in the agricultural field at the Service Unit Park site. Potential exposure to contaminants at the Physical Sciences Expansion site would include solvents, petroleum hydrocarbons, volatile organic compounds, lead, and heavy metals. Additionally, asbestos and lead particles could be released during demolition of buildings containing these substances on the Physical Sciences Expansion site.

Operation of the proposed facilities at the Physical Sciences Expansion site includes laboratories for the geology, chemistry, and physics departments. Operation of the Service Unit Park would include most of the same materials as the O&M buildings being demolished on the Physical Sciences Expansion Site. Impacts related to hazardous materials and wastes that may occur on the sites are addressed below.

Hazardous Chemicals

The 2003 LRDP EIR found that implementation of the 2003 LRDP would increase routine hazardous chemical use (Impact 4.7-1), routine hazardous materials transport to and from the campus (Impact 4.7-8), and routine generation of hazardous chemical wastes (Impact 4.7-2) by UC Davis laboratories, departments, and maintenance/support operations, which would not create significant hazards to the public or the environment. The campus achieves a high level of compliance with regulatory standards and campus policies relevant to use, transport, and disposal of hazardous materials, as discussed further in the 'Setting' subsection to Section 4.7 of the 2003 LRDP EIR. Hazardous waste treatment,

storage, and disposal facilities currently have available capacity to accept and safely manage UC Davis chemical waste. The campus will continue to implement relevant safety programs and meet relevant standards regarding hazardous materials use, transport, and waste management for the proposed project, as well as for other projects proposed under the 2003 LRDP. Therefore, these project-level impacts would be less than significant. LRDP Mitigations 4.7-1, 4.7-2(a-b), and 4.7-8 are relevant to the proposed project and would ensure that safety policies continue to be implemented to further reduce the significance of these impacts

Given the campus' and local jurisdiction's existing policies and compliance with state and federal regulations, the 2003 LRDP EIR found that cumulative impacts related to the use and transport of hazardous materials and the generation of hazardous waste are less than significant.

Radioactive Materials

Radioisotopes may be used in low concentrations within the Physical Sciences Expansion. If a radioisotope hood is required, a dedicated system would be designed, incorporating bag in charcoal, HEPA and prefilters in a welded stainless steel cabinet. It is not anticipated that radioactive materials would be used at the Service Unit Park site.

The campus will continue to implement relevant safety programs and meet relevant standards regarding hazardous materials use, transport, and waste management for the proposed project, as well as for other projects proposed under the 2003 LRDP. Therefore, these project-level impacts would be less than significant. LRDP Mitigations 4.7-1, 4.7-3(a)-(b), and 4.7-4 (a)-(c) are relevant to the proposed project and would ensure that safety policies continue to be implemented to further reduce the significance of these impacts,

Biohazardous Materials

The Physical Sciences Expansion and Service Unit Park facilities would not use biohazardous materials or generate biohazardous waste.

Laboratory Animals

No live or whole animal carcasses would be housed or brought into the proposed Physical Science Expansion laboratories or the Service Unit Park facilities.

Building Materials

The 2003 LRDP EIR finds that demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to a significant risk from building materials contaminated with lead and asbestos (LRDP Impact 4.7-13). LRDP Mitigation 4.7-13, which requires that the campus survey buildings for potential lead and asbestos contamination before any demolition or renovation work is performed, is relevant to the proposed project and would further reduce this less-than-significant impact. Following standard campus procedures, once a construction schedule has been established, the campus offices of Architects and Engineers and Facilities would conduct a survey of the project site for lead-based paint and asbestos-containing building materials. The campus Environmental Health and Safety (EH&S) department would also

work with the Campus Safety, Health, and Environmental Management Association (CSHEMA) to discuss the need for decontamination of any building materials that have been contaminated as a result of past uses. Following decontamination, EH&S would test to verify that the space has been cleaned. 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. These regulations also require that appropriate engineering and administrative controls and protective equipment be provided to reduce exposure to safe levels. Current campus policy and Cal OSHA regulations minimize the exposure of construction workers to contaminants. If contaminants are identified on the project sites, the campus would coordinate site remediation. The Physical Sciences Expansion Preliminary Site Investigation determined that additional assessment is warranted for volatile and semivolatile organics at Building 3263 (Matten 2003). In addition, the report recommended sampling at least two points along the on-site storm drain system and sampling soil in at least locations for oil and grease, heavy metals and volatile/semivolatile organics. The recommended sampling was conducted on December 7, 2004 and UC Davis Environmental Health and Safety staff are currently reviewing the results of the investigation.

- b) The 2003 LRDP EIR found that implementation of the 2003 LRDP would not 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 (Impact 4.7-9). Compliance with all applicable federal and state laws, as well as campus programs, practices, and procedures related to the transportation, storage, and use of hazardous materials would continue for the proposed project as well as other projects proposed under the 2003 LRDP, minimizing the potential for an accidental release of hazardous materials and providing for prompt and effective cleanup if an accidental release occurs. Therefore, this impact is considered less than significant. LRDP Mitigation 4.7-9 is relevant to the project and would ensure continued compliance with relevant laws and campus policies and would further reduce this less-than-significant impact.
- c) Existing schools within ¼ mile of campus include Martin Luther King High School on B Street in downtown Davis; Emerson Junior High School on Calaveras Avenue, Rivendell Nursery School, Davis Montessori School, and Redbud Montessori School north of the west campus; and the Grace Valley Christian Academy on County Road 98. Childcare centers are currently located on the campus. In addition, the future west campus neighborhood is planned to include elementary and high school facilities. Hazardous materials use associated with the project is discussed in item a). However, none of these facilities are within ¼ mile of the Physical Sciences Expansion or Service Unit Park sites. No impact would occur.
- d) The Laboratory for Energy Related Research/South Campus Disposal site is the only campus site that was listed as a hazardous materials site pursuant to Government Code Section 65962.5. The proposed project would not disturb this site.

In addition, 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) and that demolition or renovation of buildings under the 2003 LRDP would not expose construction workers or campus occupants to contaminated building materials (Impact 4.7-13). Campus policy requires that due

diligence surveys be performed for all proposed project sites as part of the project planning process. As part of the due diligence process, a preliminary site investigation was conducted at the Physical Sciences Expansion Site (EH&S, 2003). The findings of the preliminary investigation identified several areas that require additional assessment to determine remediation, as discussed above under "Project Site" in this section. A subsurface investigation was conducted on December 7, 2004 and the UC Davis Environmental Health and Safety staff are currently reviewing the results of the investigation. 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. Site remediation would be determined based on the results of the recommended additional assessments for those sites. Therefore, the impacts would be less than significant. To ensure that due diligence surveys are performed and to further reduce this less-than-significant impact, LRDP Mitigations 4.7-12 and 4.7-13 have been implemented.

- 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. The Service Unit Park Site is just west of the University Airport. The Airport Land Use Commission (ALUC) for the counties of Sacramento, Sutter, Yolo, and Yuba published an ALUC Policy Plan for the UC Davis Airport in 1992. The plan places restrictions on certain areas in the vicinity of the airport to minimize the number of people exposed to aircraft crash hazards. However, the ALUC has not published a land use compatibility plan for the UC Davis Airport. Since 1994, Section 21096 of the California Public Resources Code has required that Caltrans' *California Airport Land Use Planning Handbook* (2002) be utilized for projects situated within an airport influence area as defined in an ALUC compatibility plan, or, if a compatibility plan has not been adopted, within 2 miles of a public-use airport.

Night lighting on campus facilities could result in upward glare, which could pose a hazard for aircraft in the vicinity of the University Airport. The campus would implement LRDP Mitigation 4.7-15(b) to ensure that lighting is appropriately directed and would check lighting from the air after new lighting is installed to ensure that there is no upward glare that would pose an aircraft hazard.

The Caltrans handbook defines six safety compatibility zones that reflect the geographic pattern of aircraft accident risks, with residential and schools the highest risk sites. The Service Unit Park site, which is located directly west of the airport, across Hopkins Road, has no residential uses planned for the site, and is considered to be in Airport Safety Compatibility Zone 6. Zone 6, Traffic Pattern Zone, has a low risk factor of accident occurrence. The qualities of this zone allow both residential and non-residential uses, but prohibit schools, large day care centers, hospitals, nursing homes, and uses with very high intensities such as outdoor stadiums. The facilities within this area are designated as *Support*, and do not include any of the uses prohibited from Zone 6. This type of land use is consistent with Caltrans guidelines. With implementation of LRDP Mitigations 4.7-15(b), which is relevant to the project, impacts 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). Internal roads adjacent to the Physical Sciences Expansion site could be affected by road closure, as well as Hopkins Road for the Service Unit Park site. Under current campus procedures, if there are changes in traffic patterns resulting from construction lane or roadway closures, the UC Davis Office of Architects and Engineers initiates notification of emergency services, including the UC Davis Fire Department and Police Department, and American Medical Response, which provides regional ambulance services to the campus. In addition, to ensure that the proposed project would not impair implementation of or physically interfere with emergency response and evacuation efforts, LRDP Mitigation 4.7-17, which requires the campus to keep at least one lane open in both directions to the extent feasible, is applicable to the proposed project. No other potential impacts associated with interference of an adopted emergency response plan or emergency evacuation plan would occur.
- h) Areas along Putah Creek are the only areas on campus that could be susceptible to wildland fires. Urbanization will not occur in close proximity to these areas under the 2003 LRDP because land along Putah Creek is designated for Open Space and Teaching and Research Fields, and land adjacent to these open areas is designated primarily for Teaching and Research Fields and low density development. The project site is not located along Putah Creek. Therefore, no impact would occur.

7.7.5 Summary

Mitigation measures 4.7-1, 4.7-2 (a, b), 4.7-3 (a, b), 4.7-4 (a)-(c), 4.7-8, 4.7-9, 4.7-12, 4.7-13, 4.7-15 (b), and 4.7-17 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of hazards and hazardous materials impacts to the extent feasible. The proposed project would not exceed the levels of significance of hazards and hazardous materials impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant hazards and hazardous materials impacts that were not previously addressed.

7.8 HYDROLOGY & WATER QUALITY

7.8.1 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 Mayacmas 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 only major 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, 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.

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 subject to flooding during a 100-year storm event.

The central campus drainage system intercepts and collects runoff and transports this water 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 measured 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. 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

Physical Sciences Expansion Site

This site is located within an existing developed area that is currently connected to the campus drainage, utility water and domestic systems. There are existing storm drains north of the site and beneath California Avenue, which drain to Putah Creek.

Service Unit Park Site

The Service Unit Park is currently teaching and research fields and would require the installation of sewer, water, and storm drainage systems. Existing systems are located beneath Hopkins

Road; a 48-inch storm drain runs southerly along the project frontage and outlets at Putah Creek.

7.8.2 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.

7.8.3 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. 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 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. Other less than significant impacts that do not include mitigation measures are not presented here. Mitigation measures are included to

reduce the magnitude of project-level impacts 4.8-5 and 4.8-6, and cumulative impacts 4.8-13 and 4.8-14, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated. Mitigation is also included to reduce the magnitude of cumulative impact 4.8-10, but this impact is identified as significant and unavoidable because mitigation falls within other jurisdictions to enforce and monitor and therefore cannot be guaranteed by the University of California.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
HYDROLOGY & WATER QUALITY			
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
4.8-2	Development under the 2003 LRDP would increase impervious surface on the campus and could alter drainage patterns, thereby increasing runoff and loads of pollutants in storm water, which could affect water quality.	PS	LS
4.8-3	Implementation of the 2003 LRDP could alter drainage patterns in the project area and increase impervious surfaces, which could exceed the capacity of storm water drainage systems and result in localized flooding and contribution to offsite flooding.	PS	LS
4.8-4	Campus growth under the 2003 LRDP would increase discharge of treated effluent from the campus wastewater treatment plant into the South Fork of Putah Creek, which could exceed waste discharge requirements and degrade receiving water quality.	PS	LS
4.8-5	Campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer and would increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.	S	SU
4.8-6	Campus growth under the 2003 LRDP could increase the amount of water extracted from the shallow/intermediate aquifer and would increase impervious surfaces. Extraction from the shallow/intermediate aquifer could deplete groundwater levels and could contribute to local subsidence, and increased impervious coverage could interfere substantially with recharge. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table.	SU	SU
4.8-10	Development under the 2003 LRDP, in conjunction with construction activities, increased impervious surfaces, and alterations to drainage patterns associated with other development in the region that would increase impervious surface coverage in the watershed, could increase storm water runoff, and could provide substantial sources of polluted runoff, which could affect receiving water quality.	S	SU
4.8-11	Implementation of the 2003 LRDP in combination with regional development could alter drainage patterns and increase the rate or amount of surface runoff, which could exceed the capacity of storm water drainage systems and result in flooding within the Putah Creek watershed.	PS	LS
4.8-12	Growth under the 2003 LRDP and other development in the region would increase discharge of treated effluent to the Putah Creek watershed, which could degrade receiving water quality.	PS	LS
4.8-13	Growth under the 2003 LRDP and other development in the region would	S	SU

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
HYDROLOGY & WATER QUALITY			
	increase the amount of water extracted from the deep aquifer and increase impervious surfaces. This could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer.		
4.8-14	Growth under the 2003 LRDP and other development in the region would increase the amount of water extracted from shallow/intermediate aquifers and increase impervious surfaces. This could contribute to local subsidence, substantially deplete groundwater supplies, and could interfere substantially with recharge of the shallow/intermediate depth aquifer, resulting in a net deficit in the shallow/intermediate aquifer volume or a lowering of the local groundwater table.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 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.
4.8-2	The campus shall comply with the measures in the Phase II SWMP to ensure that project design includes a combination of BMPs, or equally effective measures as they become available in the future, to minimize the contribution of pollutants to receiving waters.
4.8-3(a)	Prior to approval of specific projects under the 2003 LRDP, the campus shall perform a drainage study to evaluate each specific development to determine whether project runoff would exceed the capacity of the existing storm drainage system, cause ponding to worsen, and/or increase the potential for property damage from flooding.
4.8-3(b)	If it is determined that existing drainage capacity would be exceeded, ponding could worsen, and/or risk of property damage from flooding could increase, the campus shall design and implement necessary and feasible improvements. Such improvements could include, but would not be limited to, the following: <ul style="list-style-type: none"> (i) The expansion or modification of the existing storm drainage system. (ii) Single-project detention or retention basins incorporated into project design with features including but not limited to: small onsite detention or retention basins; rooftop ponding; temporary flooding of parking areas, streets and gutters; landscaping designed to temporarily retain water; and gravel beds designed to collect and retain runoff. (iii) Multi-project storm water detention or retention basins.
4.8-4(a)	The campus shall continue to monitor and modify its pretreatment program, WWTP operation, and/or treatment processes as necessary to comply with WDRs.
4.8-4(b)	The campus shall implement a monitoring program specifically targeted at the following constituents: copper, cyanide, iron and nitrate + nitrite, and make appropriate modifications as necessary to the

2003 LRDP EIR MITIGATION MEASURES

HYDROLOGY & WATER QUALITY

- campus pretreatment program to avoid exceedance of permit limits for these constituents.
- 4.8-5(a) The campus shall continue to implement water conservation strategies to reduce demand for water from the deep aquifer. Domestic water conservation strategies shall include the following or equivalent measures:
- (i) Install water efficient shower heads and low-flow toilets that meet or exceed building code conservation requirements in all new campus buildings, and where feasible, retrofit existing buildings with these water efficient devices.
 - (ii) Continue the leak detection and repair program.
 - (iii) Continue converting existing single-pass cooling systems to cooling tower systems.
 - (iv) Use water-conservative landscaping on the west and south campuses where domestic water is used for irrigation.
 - (v) Replace domestic water irrigation systems on the west and south campuses with an alternate water source (shallow/intermediate or reclaimed water), where feasible.
 - (vii) Identify and implement additional feasible water conservation strategies and programs including a water awareness program focused on water conservation.
- 4.8-5(b) The campus shall continue hydrogeologic monitoring and evaluation efforts to determine the long-term production and quality trends of the deep aquifer.
- 4.8-5(c) To the extent feasible, new water supply wells in the deep aquifer should be located on the west campus in sands and gravels that are not used by or available to the City of Davis for deep water extraction.
- 4.8-5(d) If continued hydrogeologic monitoring and evaluation efforts identify constraints in the deep aquifer's ability to provide for the campus' long-term water needs, the campus will treat shallow/intermediate aquifer and/or surface water from the Solano Project to serve domestic water demand.
- 4.8-6(a) The campus shall continue to implement water conservation strategies to reduce demand for water from the intermediate aquifer. Utility water conservation strategies shall include the following or equivalent measures:
- (i) Landscape, where appropriate, with native, drought resistant plants and use lawns only where needed for pedestrian traffic, activity areas, and recreation.
 - (ii) Install efficient irrigation systems including centrally controlled automatic irrigation systems and low-flow spray systems.
 - (iii) Apply heavy applications of mulch to landscaped areas to reduce evaporation
 - (iv) Use treated wastewater for landscape irrigation where feasible.
- 4.8-6(b) The campus shall continue to monitor shallow/intermediate aquifer water elevations at existing campus wells to ascertain whether there is any long-term decline in water levels.
- 4.8-6(c) The campus shall continue to participate in regional subsidence monitoring, including by installing an extensometer, to determine the vertical location of local subsidence.
- 4.8-6(d) If shallow/intermediate aquifer monitoring or subsidence monitoring indicate that campus water use from the intermediate aquifer is contributing to a net deficit in aquifer volume and/or significant subsidence, the campus will reduce use of water from the aquifer by using surface water and/or treated wastewater effluent to irrigate campus recreation fields.
- 4.8-6(e) The campus shall incorporate the following or equally effective measures into project designs under the 2003 LRDP where feasible, to increase percolation and infiltration of precipitation into the underlying shallow/intermediate aquifers:
- (i) Minimize paved surfaces.
 - (ii) Use grassy swales, infiltration trenches, or grass filter strips to intercept storm water runoff.
 - (iii) Implement LRDP Mitigation 4.8-2(b), which specifies construction of detention and infiltration

2003 LRDP EIR MITIGATION MEASURES

HYDROLOGY & WATER QUALITY

facilities in those areas that do not discharge storm water to the Arboretum.

- 4.8-10(a) Implement LRDP Mitigation 4.8-1 and 4.8-2.
- 4.8-10(b) Jurisdictions within the Putah Creek watershed should comply with Phase II NPDES Municipal Storm Water Permit requirements for small municipalities in order to minimize the contribution of sediment and other pollutants associated with development in the region.
- 4.8-10(c) Comprehensive SWPPPs and monitoring programs should be implemented by all storm water dischargers associated with specified industrial and construction activities, in compliance with the state's General Permits. Such plans shall include BMPs or equally effective measures.
- 4.8-11 The campus shall implement LRDP Mitigation 4.8-3(a-c) in order to prevent flooding on campus.
- 4.8-12 The campus shall implement LRDP Mitigation 4.8-4(a) and (b) to minimize the potential for degradation of receiving water quality.
- 4.8-13(a) Implement LRDP Mitigation 4.8-5(a-d).
- 4.8-13(b) The City of Davis is expected to implement measures to reduce the amount of water withdrawn from the deep aquifer consistent with policies adopted in its General Plan.
- Give priority to demand reduction and conservation over additional water resource development (Policy WATER 1.1)
 - Require water conserving landscaping (Policy WATER 1.2)
 - Provide for the current and long-range water needs of the Davis Planning Area, and for protection of the quality and quantity of groundwater resources (Policy WATER 2.1)
 - Manage groundwater resources so as to preserve both quantity and quality (Policy WATER 2.2)
 - Research, monitor and participate in issues in Yolo County and the area of origin of the City's groundwater that affect the quality and quantity of water (Policy WATER 4.1)
- 4.8-14(a) The campus should implement LRDP Mitigation 4.8-6(a-e) to minimize its withdrawal from the shallow/intermediate aquifer and maximize the potential for infiltration.
- 4.8-14(b) Consistent with current water planning policies, the City of Davis is expected to implement measures to reduce impervious surfaces and reduce the amount of water withdrawn from the shallow/intermediate aquifer, consistent with, but not limited to, the water policies listed in LRDP Mitigation 4.8-13(b).

7.8.4 Environmental Checklist and Discussion

HYDROLOGY & WATER QUALITY	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	Less than Significant Impact	No Impact
Would the project...					
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 type="checkbox"/> | <input checked="" 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, which is relevant to the project, requires the campus to implement BMPs to reduce construction-related water quality impacts.

Operation

The 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase discharge of treated effluent from the campus WWTP into the South Fork of Putah Creek, which could exceed waste discharge requirements and degrade receiving water quality (Impact 4.8-4). With current and future discharge control programs, possible operational changes, the increased discharge from the WWTP associated with the proposed project as well as other projects under the 2003 LRDP is expected to comply with NPDES regulations, and therefore would not cause degradation of receiving water quality. The campus will continue to monitor effluent discharge in compliance with the applicable WDRs for the WWTP, and if effluent limits are exceeded, the campus will modify its pretreatment program and WWTP operation as appropriate. These practices are further confirmed in LRDP Mitigation 4.8-4(a), which is relevant to the project. In compliance with LRDP Mitigation 4.8-4(b), also relevant to the project, the campus will target monitoring and pretreatment for the contaminants specifically identified as of potential concern by the CVRWQCB. These measures would reduce the impact to a less-than-significant level.

The 2003 LRDP EIR found that growth under the 2003 LRDP and other development in the region would increase the cumulative discharge of treated effluent to the Putah Creek watershed, which could degrade receiving water quality (Impact 4.8-12). However, UC Davis is currently the only major discharger of treated effluent to Putah Creek, and no other major dischargers are expected in the future. LRDP Mitigation 4.8-12, which is relevant to the project, requires implementation of LRDP Mitigation 4.8-4(a-b), discussed above, which would reduce the impact of increased effluent discharge from the campus WWTP to Putah Creek to a less-than-significant level. Therefore, with implementation of LRDP Mitigation 4.8-12, which is included in the proposed project, the cumulative impact would be less than significant.

b) Deep Aquifer

The proposed Physical Sciences Expansion project would result in an increased domestic water demand of 300 gallons per minute (gpm) (about 480 acre-feet per year). The Service Unit Park would result in a domestic water demand of 5,675 gpm (about 9,150 acre-feet per year) but a substantial portion of the water demand is already occurring and would simply transfer to the new Service Unit Park site. The 2003 LRDP EIR found that campus growth under the 2003 LRDP would increase the amount of water extracted from the deep aquifer and would increase impervious surfaces, which could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table but would not interfere substantially with recharge of the deep aquifer (Impact 4.8-5). The deep aquifer is confined with limited lateral and vertical recharge and is overlain by thick clay layers that are relatively impermeable. Because of these characteristics, increased impervious surfaces associated with development under the 2003 LRDP will not significantly affect the recharge capacity of the deep aquifer. The 2001 demand for water from the deep aquifer was approximately 2,671 acre-feet. The annual demand for deep

aquifer water under the 2003 LRDP, including demand associated with the proposed project, is expected to increase to approximately 5,301 acre-feet through 2015-16 (UC Davis ORMP 2003c). LRDP Mitigation 4.8-5(a-c), which is relevant to the project, would require continued water conservation efforts, efforts to determine the ability of the deep aquifer to provide for the campus' long-term water needs, and efforts to minimize withdrawals by UC Davis and the City of Davis from the same deep aquifers. If monitoring efforts identify that the aquifer is unable to meet the campus' long-term needs, consistent with LRDP Mitigation 4.8-5(d), the campus would treat intermediate aquifer water and/or surface water to serve domestic water needs. Regardless of these mitigation measures, if UC Davis' future demand for water from the deep aquifer increases, groundwater levels in the deep aquifer could lower, contributing to a net deficit in the overall groundwater budget. The effects of increased demand on the volume of the deep aquifer are currently not well understood (although consistent with LRDP Mitigation 4.8-5(b), the campus will continue to study these effects). Therefore, this impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

The 2003 LRDP EIR found that growth under the 2003 LRDP and other development in the region would cumulatively increase the amount of water extracted from the deep aquifer and would increase impervious surfaces, which could result in a net deficit in the deep aquifer volume or a lowering of the local groundwater table, but would not interfere substantially with recharge of the deep aquifer (Impact 4.8-13). The long-term reliability of the deep aquifer could be at risk if both UC Davis and the City of Davis rely on the aquifer to meet their future needs. In compliance with LRDP Mitigation 4.8-13(a), in which is relevant to the proposed project, the campus would: minimize withdrawals from those aquifers shared with the City of Davis by locating new wells on the west campus when feasible, monitor the deep aquifer, conserve water, and manage water supplies efficiently. LRDP Mitigation 4.8-13(b) recognizes the City of Davis General Plan's objectives regarding reduction of water extraction from the deep aquifer. However, regardless of mitigation, because the effects of increased demand on the volume of the deep aquifer are currently not well understood, this impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Shallow/Intermediate Aquifer

The proposed Physical Sciences Expansion site would increase the demand for utility water from the shallow/intermediate aquifers for irrigation of the project's landscaped areas. However, the site is currently developed and is already mainly covered by impervious surfaces. The 24-acre Service Unit Park site, which is currently unpaved and not covered by any impervious surfaces, would increase the amount of impervious surfaces through construction of buildings and parking areas, as well as increase the demand for utility water from the shallow/intermediate aquifers for irrigation of the site's landscaped areas. The 2003 LRDP EIR found that the campus' extraction from shallow/intermediate aquifers could deplete groundwater levels and could contribute to local subsidence. In addition, increased impervious coverage could interfere with

recharge of the shallow/intermediate aquifers. This could result in a net deficit in the intermediate aquifer volume or a lowering of the local groundwater table (Impact 4.8-6).

The 2001 baseline annual campus demand (including irrigation demand associated with the tenant farmer at Russell Ranch) for water from the shallow/intermediate aquifers was approximately 3,827 acre-feet. Under the 2003 LRDP, due to conversion of teaching and research fields to other uses with reduced irrigation requirements, overall annual demand for water from the shallow/intermediate aquifers is anticipated to decrease to approximately 3,362 acre-feet through 2015-16 (UC Davis ORMP 2003c). However, these projections do not address the potential identified in LRDP Mitigation 4.8-5(d) for intermediate aquifer water to be used to serve the campus' domestic water needs. If this mitigation is implemented, demand for water from the intermediate aquifer could increase. In addition, recent monitoring efforts indicate subsidence in the campus vicinity. Due to the short history of subsidence monitoring in the area, the extent and cause of this subsidence is currently unknown, however, extraction from the shallow/intermediate aquifer could be a contributing factor. Additionally, development under the 2003 LRDP, including the proposed project, would increase the amount of impervious surfaces on campus. However, because the soils underlying the campus generally have low permeability and would provide limited recharge, new impervious surfaces are not likely to significantly reduce the amount and rate of groundwater recharge. Most recharge in the area is associated with streams and waterways, which would not be affected by the project.

LRDP Mitigation 4.8-6(a-c), which is relevant to the proposed project, would require continued utility water conservation efforts, monitoring of the intermediate aquifer, and subsidence monitoring efforts. Furthermore, implementation of LRDP Mitigation 4.8-6(e) would encourage project designs on campus that increase percolation and infiltration to the shallow/intermediate aquifer. Most of the Physical Sciences Expansion site would be used for landscaped areas, which would not be impervious and would allow some percolation and infiltration on the site. The Service Unit Park would incorporate landscaped areas within the site and green belts around its perimeter to allow percolation and infiltration on the site. If the monitoring efforts required by LRDP Mitigation 4.8-6(b) or (c) identify that campus intermediate aquifer use is contributing to a net deficit in aquifer volume or significant subsidence, LRDP Mitigation 4.8-6(d) would be implemented to reduce campus utility water use by requiring use of Solano Project surface water and/or tertiary treated wastewater effluent from the campus WWTP for irrigation of campus recreation fields. Regardless of mitigation, the combination of effects from continued demand for water from the shallow/intermediate aquifer, local subsidence trends, and increased coverage could potentially result in a significant impact on intermediate aquifer groundwater levels. Therefore, impact 4.8-6 is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

The 2003 LRDP EIR found that growth under the 2003 LRDP and other development in the region would cumulatively increase the amount of water extracted from shallow/intermediate aquifers and would increase impervious surfaces. This could contribute to local subsidence, substantially deplete groundwater supplies, and could interfere substantially with recharge of the shallow/intermediate depth aquifer, resulting in a net deficit in the shallow/intermediate aquifer volume or a lowering of the local

groundwater table (Impact 4.8-14). Although campus extraction of water from the shallow/intermediate aquifers is anticipated to continue to decrease through 2015-16, a potential increase in extraction in the Davis area could cause well levels to decrease. In addition, extraction from these aquifers could be causing subsidence that has been observed in the area, and increases in impervious surfaces could impede the amount of groundwater recharge. Implementation of LRDP Mitigation 4.8-13(a) and (b) would reduce the campus and City extractions from the shallow/intermediate aquifers, would reduce the amount of new impervious surfaces in the area, and would continue groundwater level and subsidence monitoring efforts. Regardless of mitigation, the combination of effects from continued local demand for water from the shallow/intermediate aquifers, local subsidence trends, and increased coverage could result in a significant and unavoidable impact on the aquifers. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- c) The Physical Sciences Expansion would involve demolishing existing O&M structures and constructing a three-story building on an existing developed 2.6-acre site, and would include landscaped areas to allow for infiltration and percolation. Existing storm drain pipelines are located on the north and west sides of the project site. Additionally, there are numerous area catch basins and smaller drain lines within the hardscape and landscaped areas to collect localized storm water runoff. All of these existing lines within the Physical Sciences Expansion site flow through the Arboretum Waterway to Putah Creek. The proposed project would connect to the existing campus storm water drainage system with a new 12-inch storm drain line. This line would connect to the existing site storm drain line that empties into the Arboretum Waterway. The project would also provide an 8-inch line to the north of the proposed facility that would connect to the existing storm drain beneath California Avenue, northeast of the project site. Drain inlets would be used to collect surface flow. Rainwater leaders for the Physical Sciences Expansion site would connect both of the new storm drain lines. Since the majority of the existing site is covered with impervious surfaces or modular buildings, the increase in storm runoff attributed to the proposed project would be minor, if any, and would not be significant, but would contribute to the overall increase in runoff associated with development evaluated in the 2003 LRDP.

The Service Unit Park site project would develop the existing undeveloped approximately 24-acre site with five buildings in Phase 1 (additional buildings would be constructed in Phase II) and associated paved parking areas, but would include landscaped areas within the building area and green belts along the perimeter of the site. A 48-inch storm drain runs southerly along the eastern edge of the project site and outlets at Putah Creek. UC Davis requires storm water detention on any new project along the Hopkins Road system. Landscaped areas north and east of the building areas would provide adequate storm water detention. Additional storage would be provided by drains and inlets within the parking areas and landscaping on the site.

The Service Unit Park site would be graded to protect buildings from a 100-year storm event. Shallow retention ponds would be placed in the planters around the perimeter of the site. Sheet flow across the parking lots is proposed to drain directly into the adjacent detention ponds wherever possible. A secondary small diameter drain pipe system is proposed for the roof drains. The main backbone drainage system would interconnect the detention ponds and would be placed below the ponds with controlled drain inlets to allow

for percolation into the ponds and restricted flow out of the ponds into the existing 48-inch drain line.

The 2003 LRDP EIR found that development under the 2003 LRDP would increase impervious surfaces on the campus and could alter drainage patterns, thereby increasing runoff and loads of pollutants in storm water, which could adversely affect surface water quality (Impact 4.8-2). Discharge of storm water to the Arboretum Waterway is covered under a NPDES Phase II permit for small municipal storm water systems, which requires Best Management Practices (BMPs) to reduce pollutants in storm water discharge to the maximum extent practicable. LRDP Mitigation 4.8-2 requires the campus to comply with Phase II regulations. With implementation of Phase II requirements, increases in storm water runoff and levels of contaminants in runoff associated with implementation of the 2003 LRDP, including the proposed project, would have a less than significant impact on receiving waters. The landscaped areas and detention facilities that are included in the project would reduce contaminants in runoff. The Service Unit Park would contribute to the overall increase in runoff associated with development evaluated in the 2003 LRDP.

The 2003 LRDP EIR found that development under the 2003 LRDP, in conjunction with construction activities, increased impervious surfaces, and alterations to drainage patterns associated with other development in the watershed could increase storm water runoff and could provide substantial sources of polluted runoff, which could adversely affect receiving water quality (Impact 4.8-10). LRDP Mitigations 4.8-10 (a-c) require the campus and regional jurisdictions to comply with NPDES Phase II requirements and implement SWPPPs for specified industrial and construction activities. However, implementation of LRDP Mitigation 4.8-10(b) and (c) cannot be guaranteed by the University of California because it falls within other jurisdictions to enforce and monitor. Therefore, the impact is currently considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- d,e) Runoff from the proposed project sites would drain to the campus storm drainage system. The 2003 LRDP EIR found that implementation of the 2003 LRDP would alter drainage patterns in the project area and would increase impervious surfaces, which could exceed the capacity of storm water drainage systems and result in localized flooding and contribution to offsite flooding (Impact 4.8-3). Campus runoff is not expected to significantly increase peak flows in Putah Creek under the 2003 LRDP because anticipated development represents only a minor increase in the percentage of impervious area in the watersheds. Campus discharges from the Arboretum Waterway to Putah Creek are not expected to exceed the existing pumping capacity of approximately 80 cfs (the current NPDES permit has a maximum discharge limit of 130 cfs). However, under existing conditions, localized flooding on some portions of the campus occurs during the 2-year storm event. In most cases, this flooding consists of temporary water ponding at storm drain inlets and along roads that does not result in property damage or other serious consequences. Without any improvements, increased runoff associated with development under the 2003 LRDP, including the proposed project, would increase the likelihood of localized flooding (West Yost & Associates 2000). In accordance with LRDP Mitigation 4.8-3(a), which is relevant to the project, a drainage study has been performed for the proposed project to determine if capacity in the existing storm drainage systems exist. At the Physical Sciences Expansion site, the existing line to the west, within California

Avenue, is flat and current loads exceed capacity. However, the existing on-site storm water system appears to be adequate for the site. Therefore, because current loads exceed the capacity of the existing storm drain within California Avenue, modifications to the storm drainage system would be made in compliance with LRDP Mitigation 4.8-3(b). The project would connect to the storm drain system at an on-site existing manhole to the southwest of the proposed project with a new 12-inch storm drain service that would bypass the existing storm drain. The proposed Physical Sciences Expansion project would not significantly increase impervious surfaces and therefore would not have any impact on flooding and would not contribute to the cumulative LRDP impact.

The Service Unit Park project, which would be located on a currently undeveloped site, would increase impervious surfaces within the site. The site is outside the FEMA 100-year flood zone, and would be graded to protect buildings from a 100-year storm event. No impact would occur. Landscaped areas within the project site would provide adequate detention for runoff. Shallow retention ponds would be installed in the planters around the perimeter of the site and sheet flow across the parking lots would drain directly into the adjacent detention ponds. A secondary small diameter drain pipe system would be installed for the roof drains. The main backbone drainage system would interconnect the detention ponds and would be placed below the ponds with controlled drain inlets to allow for percolation into the ponds and restricted flow out of the ponds into the existing 48-inch drain line, before emptying into Putah Creek. Therefore, this impact would be less than significant.

The 2003 LRDP EIR also found that implementation of the 2003 LRDP in combination with regional development could alter drainage patterns and increase the rate or amount of surface runoff, which could cumulatively exceed the capacity of storm water drainage systems and result in flooding within the Putah Creek watershed (Impact 4.8-11). In most cases, this flooding consists of temporary water ponding at storm drain inlets and along roads that does not result in property damage or other serious consequences. With implementation of LRDP Mitigation 4.8-11, storm water discharges from the campus would be reduced and would not contribute to regional flooding problems.

Storm water runoff pollution is evaluated further in items a,f) and c) above.

- 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. The project does not include any 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). Neither the Physical Sciences Expansion site nor the Service Unit Park site is located within a 100-year floodplain, and neither would redirect flows. Therefore, there would be no impact.

The campus is located approximately 23 miles downstream of the Monticello Dam (forming Lake Berryessa) and approximately 15 miles downstream of the Putah Diversion Dam. An inundation study prepared by the U.S. Bureau of Reclamation shows that, in the highly unlikely case of a dam breach, the campus (as well as the City of Davis) would be inundated under a maximum of 3 to 9 feet of water approximately 3.5 to 4 hours following the breach (USBR 1998). However, the probability of such a release is far less than one in

one million (USBR 2000). As of June 2000, Monticello Dam was determined to be in satisfactory condition, and the dam exhibited no unusual cracks, seeps, or deformations. In addition, the State Department of Dam Safety evaluates dams regularly, which would give adequate time to respond to any deterioration in the safety of the structure. Therefore, the risk of flooding on campus as a result of a dam failure is considered a less than significant impact.

- 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.

7.8.5 Summary

Mitigation measures 4.8-1, 4.8-2, 4.8-3 (a)-(b), 4.8-4 (a, b), 4.8-5 (a)-(d), 4.8-6 (a)-(e), 4.8-10 (a)-(c), 4.8-11, 4.8-12, 4.8-13 (a, b), and 4.8-14 (a, b) from the 2003 LRDP EIR are relevant to the proposed project to reduce the significance of hydrology and water quality impacts to the extent feasible. The proposed project would not exceed the levels of significance of hydrology and water quality impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant hydrology and water quality impacts that were not previously addressed.

7.9 LAND USE & PLANNING

7.9.1 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 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/IICA/Recreation); *Research Park* (High and Low Density); *Formal Open Space*; *Community Gardens*; *Faculty/Staff Housing*, *Student Housing*; *Mixed Use Housing*; *Support*; and *Elementary School*.

Project Site

Physical Sciences Expansion Site

The proposed 2.6-acre site is located in the Central Campus, south/center of the Physical Sciences area, on the western portion of the current O&M Complex. The O&M Complex includes a series of facilities administration and trades buildings, a high-energy physics high-bay building in the southwest corner, and a building used for office space and human resources. The Physical Sciences Expansion site is bordered by the Physics/Geology building to the north, Facilities Services area and Domestic Water Tower 1 to the east, the Arboretum Waterway to the south, and Academic Surge to the west.

The 2003 LRDP designates the Physical Sciences Expansion site as *Academic/Administrative High Density*. This land use category designates areas for large, multi-story facilities that facilitate the teaching, research, and public service mission of the University of California. These include facilities such as classrooms; research laboratories and research support areas; faculty, student and staff offices; libraries; program support facilities; student activity space; meeting rooms; space for public service, outreach, and cultural activities; and business/service activities that support the University mission (LRDP 2003).

Service Unit Park Site

The Service Unit Park site is located within the West Campus on Hopkins Road. The proposed site is approximately 24 acres and bordered by the Contained Research Facility and teaching and research fields to the north, the University Airport and Hopkins Road to the east, teaching and research fields to the west, and the Avian Sciences Facility to the south. This site is currently designated in the 2003 LRDP as *Research Park Low Density*. Therefore, the proposed Service Unit Park site would require a change in land use designation from *Research Park Low Density* to *Support*. The *Support* Service land use category designates land for facilities required to service the campus on a daily basis including facilities for fire and police protection, supplies, water, wastewater, solid waste, electricity, communications, heating and cooling, building maintenance, hazardous waste, and vehicle maintenance/storage (LRDP 2003). Specialized facilities such as the University Airport are also included in this land use designation.

7.9.2 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.

7.9.3 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.

7.9.4 Environmental Checklist and Discussion

LAND USE & PLANNING	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) The proposed project would have no potential to physically divide an established community, as the Physical Sciences Expansion and Service Unit Park sites are located on UC Davis property and are not in proximity to adjacent communities. Expansion of roads/infrastructure as a result of this project would not act as a barrier. No impact would occur and no additional analysis is required.

b) The applicable land use plan for the campus is the 2003 LRDP. The 2003 LRDP designates the Physical Sciences Expansion site as *Academic/Administrative High Density*. This land use category designates areas for large, multi-story facilities that include facilities such as classrooms; research laboratories and support areas; offices; libraries; student activity space; meeting rooms; and space for public service, outreach, and cultural activities (LRDP 2003). The proposed facility is consistent with this designation.

The Service Unit Park site is currently designated in the 2003 LRDP as *Research Park Low Density*. Therefore, the proposed Service Unit Park site would require a change in land use designation from *Research Park Low Density* to *Support*. An LRDP amendment is part of this project. The *Support* land use category designates land for facilities required to service the campus on a daily basis including facilities for fire and police protection,

supplies, water, wastewater, solid waste, electricity, communications, heating and cooling, building maintenance, hazardous waste, and vehicle maintenance/storage.

The 2003 LRDP envisioned constructing the Service Unit Park at a South Campus site. After completion of the 2003 LRDP, the campus began detailed assessments of the South Campus Service Unit Park relocation site. The detailed review included proximity needs to central campus for the Service Unit Park employees and the development costs for providing infrastructure to the South Campus Service Unit Park site. The assessments indicated that the previously identified South Campus Service Unit Park site was not financially feasible for the campus to pursue and that an alternative site would be needed.

The campus identified the currently proposed West Campus Service Unit Park site west of Hopkins Road as a potential alternative. Subsequent planning for the Service Unit Park has indicated that the Hopkins Road site would meet all project objectives and could proceed within the identified budget of the proposed project. During the 2003 LRDP planning process, the Hopkins Road site was identified as a site for a future Research Park project that could attract research partners to the UC Davis campus. As explained in additional detail in Section 4.2 of this Initial Study, the Research Park land use designation is no longer needed on the West Campus. Because the West Campus site is available for the Service Unit Park and because the West Campus site meets the site needs for the Service Unit Park, the West Campus site along Hopkins Road is proposed as the relocation site. Although the 2003 LRDP identified the land area as *Research Park Low Density* the site designation would be changed to *Support* to make the 2003 LRDP land use designation consistent with the land uses at the proposed Service Unit Park.

The change in land use designation from the LRDP is not deemed to result in a significant impact because the new land use designation is not incompatible with existing or planned adjacent land uses, as discussed in item d), below.

- c) 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 (VELB) at Russell Ranch. The Physical Sciences Expansion site is within the Central Campus approximately 5 miles from Russell Ranch and the Service Unit Park site is within the West Campus and is approximately 2.5 miles from Russell Ranch. Therefore, the proposed project would not conflict with an adopted HCP or NCCP.
- d) The 2003 LRDP EIR identifies that an impact could result if land uses are developed under the 2003 LRDP EIR that are substantially incompatible with existing adjacent land uses or with planned uses. The Physical Sciences Expansion site is compatible with the existing site's land use designation and the adjacent land use designations to the north, west, and east of the project site, which are also Academic/Administrative High Density. Land to the south of the project site is designated *Teaching and Research Open Space* (i.e., the University Arboretum).

The Service Unit Park site's redesignation to *Support* is compatible with the land use designations and existing land uses adjacent to the proposed Service Unit Park site (i.e., *Academic/Administrative Low Density, Teaching and Research Fields, and Support*). Adjacent land uses include the University Airport, Contained Research Facility, and the Avian Sciences Facility. The change in designation would effectively expand the existing *Support* area that currently accommodates the airport.

Summary

The 2003 LRDP EIR did not identify any significant land use and planning impacts, nor did it identify any associated mitigation measures. The proposed project would not exceed the levels of significance of land use and planning impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant land use and planning impacts that were not previously addressed.

7.10 MINERAL RESOURCES

7.10.1 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.

7.10.2 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.

7.10.3 Environmental Checklist and Discussion

MINERAL RESOURCES		Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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.

7.11 NOISE

7.11.1 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 site for the Physical Sciences Expansion is located in the Central Campus to the south of the existing Physics/Geology building, and is now occupied by the Facilities Services building along with other smaller buildings and parking lots that are part of the O&M complex. Existing noise sources on the site are from vehicles entering and leaving the site, as well as typical mechanical equipment, such as air conditioners and ventilation systems for the existing buildings and noise from equipment and machinery in the Facilities Shops located immediately to the east of the Physical Expansion Sciences site. The site is just east of the Math Sciences building, which is currently under construction.

The site for the Services Unit Park is located on the west campus across Hopkins Road from the University Airport. The site is currently vacant; potential noise sources in the surrounding area include the Contained Research Facility north of the site, Avian Research facility to the south of the site and feed lot operations to the north east of the site. Noise from operations at the University Airport to the east of Hopkins Road would also affect the site, although it is not within the 55 db CNEL contour for aircraft operations at the Airport

7.11.2 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. The project would potentially contribute to exposure of persons to long-term road traffic noise. The project also would result in exposure to temporary construction noise. The relevant thresholds of significance are shown in the following table.

**Table 4.10-3 (from 2003 LRDP EIR)
Thresholds of Significance for Noise Evaluations**

Noise Source	Criterion Noise Level	Substantial Increase in Noise Level ^a
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
Construction (temporary)	80 dBA $L_{eq(8h)}$ ^b daytime 80 dBA $L_{eq(8h)}$ evening 70 dBA $L_{eq(8h)}$ nighttime	Not Applicable

^a At noise-sensitive land use unless otherwise noted. Noise-sensitive land uses include residential and institutional land uses.

^b $L_{eq(8h)}$ 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.

7.11.3 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. 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 noise 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 in the 2003 LRDP EIR to reduce the magnitude of project-level impact 4.10-2 and cumulative impact 4.10-5, but these impacts are identified as significant and unavoidable because of the uncertainty regarding mitigation feasibility and effectiveness, and because mitigation falls within other jurisdictions to enforce and monitor and therefore cannot be guaranteed by the University of California.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
NOISE			
4.10-1	Construction of campus facilities pursuant to the 2003 LRDP could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise.	PS	LS
4.10-2	Implementation of the 2003 LRDP would result in increased vehicular traffic on the regional road network, which would substantially increase ambient noise levels at some locations.	S	SU
4.10-5	The 2003 LRDP development in combination with other regional development would increase ambient noise levels.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

NOISE

- 4.10-1 Prior to initiation of construction, the campus shall approve a construction noise mitigation program including but not limited to the following:
- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.
 - Stationary noise sources such as generators or pumps shall be located 100 feet away from noise-sensitive land uses as feasible.
 - Laydown and construction vehicle staging areas shall be located 100 feet away from noise-sensitive land uses as feasible.
 - Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project.
 - Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) within 100 feet of a residential or academic building shall not be scheduled during finals week.
 - Loud construction activity as described above within 100 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, Thanksgiving breaks, Christmas break,

2003 LRDP EIR MITIGATION MEASURES

NOISE

Spring break, or Summer break.

- Loud construction activity within 100 feet of a residential or academic building shall be restricted to occur between 7:30 AM and 7:30 PM.

4.10-2(a) For noise-sensitive uses adjacent to Russell Boulevard between Arlington Boulevard and Arthur Street, the existing soundwall (approximately 6.5 feet in height) could be increased slightly in height and extended to include the daycare center to the east.

For noise-sensitive uses adjacent to Russell Boulevard between Arthur Street and SR 113, and from SR 113 to La Rue/Anderson Road and from La Rue Road to Oak Street, soundwalls may be constructed for exterior residential and recreational land uses within approximately 100 feet of the centerline of Russell Boulevard, where construction of such walls would not interfere with driveway access.

The campus shall reimburse the City of Davis the campus' fair share of the cost of a City of Davis' noise abatement program for reducing interior noise levels in homes along Russell Boulevard that are significantly affected by noise from 2003 LRDP-related traffic growth. The campus' contribution to the City's noise abatement program could be used to extend sound walls as described above or for other noise abatement measures such as retrofit of homes. The campus' fair share shall be determined based on the volume of traffic added to Russell Boulevard by the campus as a result of 2003 LRDP implementation and the percentage that 2003 LRDP-related traffic increases constitute of the average daily traffic on the roadway.

4.10-2(b) For components of the 2003 LRDP having future noise-sensitive land uses such as the Neighborhood and Research Park, building and area layouts shall incorporate noise control as a design feature; including increased setbacks, landscaped berms, and using building placement to shield noise-sensitive exterior areas from direct roadway views.

4.10-5 Implement LRDP Mitigations 4.10-1 and 4.10-2.

7.11.4 Environmental Checklist and Discussion

NOISE	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	Less than Significant Impact	No Impact
Would the project...					
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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?
- 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?
-

- a, c) Generation of noise levels on or adjacent to the project sites associated with vehicle trips, mechanical equipment and other equipment would contribute to ambient noise levels on campus. The Physical Sciences Expansion project would result in an increase in the number of vehicular trips, as the project involves relocation of activities already located in the vicinity of the project site, and the vacated space would be backfilled by other activities. This backfilling would result in a potential population increase of about 85 staff on the Core Campus. It is also expected that the number of employees at the Service Unit Park would increase between 2006 and 2015, from 680 employees to 744 employees, with a resulting increase in both home-to-work and on-campus vehicle trips. The 2003 LRDP EIR found that implementation of the 2003 LRDP would result in increased vehicular traffic on the regional road network, which would substantially increase ambient noise levels at the following locations through 2015-16: Russell Boulevard, just west of Arlington; the west campus neighborhood site adjacent to SR 113; and on Hutchison Drive west of SR 113 (Impact 4.10-2). The Physical Sciences Expansion would contribute to this impact. The Service Unit Park also would contribute increased vehicle traffic and therefore affect ambient noise levels, particularly on Hutchison Drive, which would provide the principal access route for both on-campus and home-to-work trips. LRDP Mitigation 4.10-2(a-b) would address this impact by requiring specific noise abatement and noise control programs on campus and in the City of Davis. However, the campus cannot ensure that LRDP Mitigation 4.10-2(a) would be implemented by the City, and it is uncertain whether this measure would effectively reduce noise to acceptable levels. Therefore, the impact would still be considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

The 2003 LRDP EIR also recognized that development under the 2003 LRDP in combination with other regional development would cumulatively increase ambient noise levels (4.10-5). Cumulative development would increase the number of people in the region who would be exposed to temporary construction-related noise. LRDP Mitigation 4.10-5, which is relevant to the proposed project, would require application of the recommended noise control measures detailed in LRDP Mitigation 4.10-1. The 2003 LRDP EIR found that, with this mitigation, the cumulative impact associated with construction noise would be less than significant. LRDP Impact 4.10-2 addresses traffic noise impacts on and adjacent to the campus associated with the 2003 LRDP and cumulative growth. LRDP Mitigation 4.10-5 would require implementation of the noise control and abatement measures identified in LRDP Mitigation 4.10-2(a-b). However, as discussed above, the effectiveness and implementation of LRDP Mitigation 4.10-2(a) cannot be ensured. Therefore, the cumulative impact is considered significant and

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

- b, d) Construction of the Physical Sciences Expansion and the Service Unit Park would generate temporary construction-related noise using conventional building techniques and equipment; however, pile driving, blasting, or other special construction techniques are not anticipated. The Physical Sciences Expansion project site is within 100 feet of the Academic Surge building, which is located directly across California Avenue. Other academic buildings – the Mathematics building and the Physics/Geology building – are located within 250 feet of the project site. The Service Unit Park project site is located less than 100 feet from portions of the Avian Research facility to the south. The Contained Research facility to the north is approximately 150 feet from the Service Unit Park project site.

The 2003 LRDP EIR found that construction of campus facilities pursuant to the 2003 LRDP could expose nearby receptors to excessive groundborne vibration and airborne or groundborne noise (Impact 4.10-1). Construction under the 2003 LRDP, including the proposed project, would require temporary construction activities using conventional construction techniques and equipment that would not generate substantial levels of vibration or groundborne noise. Routine noise levels from conventional construction activities (with the normal number of equipment operating on the site) range from 75 to 86 dBA Leq at a distance of 50 feet, from 69 to 80 dBA Leq at a distance of 100 feet, from 55 to 66 dBA Leq at a distance of 500 feet, and 48 to 60 dBA Leq at a distance of 1,000 feet (although noise levels would likely be lower due to additional attenuation from ground effects, air absorption, and shielding from miscellaneous intervening structures). Noise levels at the Avian Research facility, which is less than 100 feet from the project site, could be in excess of the significance criteria of 80 dBA Leq daytime. Noise from project construction is predicted to be below the significance criteria of 80 dBA Leq daytime and evening and 70 dBA Leq nighttime at other academic and research facilities in the vicinity of the project sites. However, noise from construction would be audible and would temporarily elevate the local ambient noise level to some degree at distances greater than 100 feet from construction. LRDP Mitigation 4.10-1, which is relevant to the proposed project, would control construction noise to a less than significant level. The mitigation measure includes time-of-day restrictions on construction activities and would reduce the potential impact to a less-than-significant level. No other sensitive receptors would be affected by project construction noise.

- e) The Physical Sciences Expansion project site is located approximately one mile from the University Airport, while the Services Unit Park project site is located directly across Hopkins Road from the Airport. The 2003 LRDP, including the proposed project, does not propose changes to University Airport operations, nor does it propose occupied uses within the airport's 65 CNEL noise contour. Therefore, the project would not expose people to excessive noise levels associated with this public use airport, and the impact is less than significant.
- f) The University Airport is a public use airport, not a private airstrip. No other private airport facilities are within the immediate vicinity of the campus. No impact would occur. Refer to

item e) above for discussion of potential noise impacts associated with the campus' public use airports.

Summary

Mitigation measures 4.10-1, 4.10-2 (a, b), and 4.10-5 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of noise impacts to the extent feasible. The proposed project would not exceed the levels of significance of noise impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant noise impacts that were not previously addressed.

7.12 POPULATION & HOUSING

7.12.1 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 Section 4.3 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 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.

7.12.2 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) were found not to be applicable to campus growth under the 2003 LRDP.

7.12.3 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. A significant population and housing impact identified in the 2003 LRDP EIR that is relevant to the

proposed project is presented below with its corresponding levels of significance. No mitigation was available to reduce the magnitude of this impact, so the impact is considered significant and unavoidable.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
POPULATION & HOUSING			
4.11-1	Implementation of the 2003 LRDP would directly induce substantial population growth in the area by proposing increased enrollment and additional employment. ¹	S	SU

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

¹ No mitigation is available to reduce the magnitude of this impact.

7.12.4 Environmental Checklist and Discussion

POPULATION & HOUSING	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>

- a) The proposed project at the Physical Sciences Expansion site would allow about 85 existing staff to move from their current locations, which could then accommodate an equal number of additional campus population. The student population would not increase above that considered in the 2003 LRDP EIR. Construction of the Service Unit Park would accommodate an increase of 228 staff members, adding to the existing campus population. Population increases associated with the proposed project are minimal and are within the population projections previously addressed in the 2003 LRDP EIR. The 2003 LRDP EIR found that implementation of the 2003 LRDP would directly induce substantial population growth in the area by proposing increased enrollment and additional employment (Impact 4.11-1). The impact analyses for all of the resource areas covered in this Initial Study address the campus population increases associated with the project. Where possible, this document mitigates associated environmental impacts to the extent feasible. In certain circumstances, impacts that are associated with campus population growth are identified as significant and unavoidable. Accordingly, the effect of direct population growth associated with the 2003 LRDP, including the proposed project, is also considered a significant and unavoidable impact. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

There are no roadway extensions or improvements required for the Physical Sciences Expansion site. The Service Unit Park site would require a roadway widening of Hopkins Road from Hutchison Drive south for the distance required to construct a new left turn lane from Hopkins Road to Hutchison Drive, but would not extend roads into any new areas.

Utility extensions for the Physical Sciences Expansion site include a new 10-inch domestic water line connecting to the existing domestic water lines, a 4-inch utility water loop connecting the existing system west of the project site to the existing system to the northeast of the project site, a new 6-inch sanitary sewer line, a gravity storm drain system, new electrical service, relocation of the chilled water supply, a new steam service

connection, and two new telecom lines consisting of four 4-inch conduits connecting to the existing telecommunication vault to the north of the proposed facility. Construction of the Service Unit Park site would require site utilities. Plumbing systems to be designed for the site include sanitary sewer, roof/storm drains, domestic cold and hot water, industrial (utility) cold water, natural gas, and compressed air. A new electrical point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the southeast side of the site. Telecommunications systems would be connected through conduits to the existing campus distribution system at the nearby manhole on the southeast of northeast side of the site across Hopkins Road. None of these systems extend utilities into areas that were previously without services.

However, the 2003 LRDP EIR found that implementation of the 2003 LRDP, including the proposed project, would not induce substantial population growth in the area indirectly through the extension of roads or other infrastructure because these extensions would not be provided with excess capacity in an area where lack of infrastructure is an obstacle to growth.

- 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 2003 LRDP EIR found that future housing in the region is anticipated to adequately accommodate population growth associated with the 2003 LRDP, including the proposed project, as well as other population growth in the region. Therefore, the 2003 LRDP EIR found that the potential for campus growth to create a demand for housing that could not be accommodated by local jurisdictions is a less than significant impact.

Summary

The 2003 LRDP EIR did not identify any mitigation measures to reduce the significance of impacts associated with population and housing. The proposed project would not exceed the levels of significance of population and housing impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant population and housing impacts that were not previously addressed.

7.13 PUBLIC SERVICES

7.13.1 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 (DJUSD) 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.

7.13.2 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.

7.13.3 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. Significant public services 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 impacts 4.12-6 and 4.12-7, but these impacts are identified as significant and unavoidable because they cannot be fully mitigated.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
PUBLIC SERVICES			
4.12-6	Implementation of the 2003 LRDP, in conjunction with regional growth, could generate a cumulative demand for new or expanded police and fire service facilities in the region, the construction of which could result in significant adverse environmental impacts to prime farmland and habitat.	S	SU
4.12-7	Implementation of the 2003 LRDP, in conjunction with regional growth, would increase the number of school-age children living in the area. This could generate a cumulative demand for new school facilities, the construction of which could result in significant environmental impacts to agricultural prime farmland and habitat.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

PUBLIC SERVICES

- 4.12-6 If documented unmitigated significant environmental impacts are caused by the construction of police or fire facilities in the Cities of Davis, Dixon, Woodland, and/or Winters that are needed in part due to implementation of the 2003 LRDP, UC Davis shall negotiate with the appropriate local jurisdiction to determine the campus' fair share (as described in Section 4.12.2.3) of the costs to implement any feasible and required environmental mitigation measures so long as the unmitigated impacts have not been otherwise reduced to less-than-significant levels through regulatory requirements, public funding, or agreements. This mitigation measure shall not apply to any other costs associated with implementation of public service facilities.
- 4.12-7 If documented unmitigated significant environmental impacts are caused by the construction of school facilities in the Cities of Davis, Dixon, Woodland, and/or Winters that are needed in part due to implementation of the 2003 LRDP, UC Davis shall negotiate with the appropriate local jurisdiction to determine the campus' fair share (as described in Section 4.12.2.3) of the costs to implement any feasible and required environmental mitigation measures so long as the unmitigated impacts have not been otherwise reduced to less-than-significant levels through regulatory requirements, public funding, or agreements. This mitigation measure shall not apply to any other costs associated with implementation of public service facilities.

7.13.4 Environmental Checklist and Discussion

PUBLIC SERVICES	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a, i&ii) UC Davis Fire and Police Protection

The proposed project at the Physical Sciences Expansion site would allow about 85 existing staff to move from their current locations, which could then accommodate additional campus population of 85. The student population would not increase above that considered in the 2003 LRDP EIR. Construction of the Service Unit Park would accommodate an increase of 228 staff members, adding to the existing campus population. The proposed project would not exceed the levels of population previously addressed in the 2003 LRDP EIR. Therefore, the proposed project would incrementally

contribute to the demand for campus fire and police services but would not increase demand beyond what was already anticipated under the 2003 LRDP.

In order to continue to meet the UC Davis Fire Department's standard of responding to 90 percent of campus emergency calls within 6 minutes, the 2003 LRDP EIR found that the campus may need to expand or renovate existing or provide new facilities, supply technologically improved equipment, implement improved management techniques, or hire additional staff for the Fire Department. The 2003 LRDP EIR found that to ensure adequate UC Davis Police Department service for the campus population under the 2003 LRDP, the campus may need to expand existing or provide new facilities, supply technologically improved equipment, or implement improved management techniques for the Police Department.

While the expansion and construction of police and fire facilities under the 2003 LRDP could contribute to the 2003 LRDP's effects on air, noise, traffic, agriculture, biological resources, cultural resources, utilities, and other resource areas, with the implementation of mitigation in the 2003 LRDP EIR and due to the relatively small areas that would be disturbed, the 2003 LRDP EIR concluded that the construction of these facilities would not individually result in significant environmental impacts. Therefore, the environmental impact associated with constructing new or altered facilities in order to maintain adequate levels of UC Davis fire and police services is considered less than significant.

Regional Fire and Police Protection

The 2003 LRDP EIR found that implementation of the 2003 LRDP, in conjunction with regional growth, could generate a cumulative demand for new or expanded police and fire service facilities in the region, the construction of which could result in significant adverse environmental impacts to prime farmland and habitat (Impact 4.12-6). To the extent that an increase in off-campus population associated with the 2003 LRDP, including the proposed project, could contribute to the demand for new police and fire facilities, in compliance with LRDP Mitigation 4.12-6, the campus would negotiate with respective jurisdictions to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. The campus' contribution to mitigation for such effects could include implementation of preservation mechanisms for on-campus prime farmland and/or habitat conservation. However, impacts associated with an irreversible loss of prime farmland and habitat could not be mitigated to less-than-significant levels. Therefore, the cumulative impacts related to police and fire facility construction in the Cities of Davis, Winters, Dixon, and Woodland would be significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

a, iii) Schools

The proposed project would contribute to the campus population, but would not increase numbers beyond what was addressed in the 2003 LRDP EIR, nor would it introduce any new significant population impacts that were not previously addressed placing new demand for schools. The 2003 LRDP EIR recognized that implementation of the 2003 LRDP, in conjunction with regional growth, would increase the number of school-age

children living in the area. This could generate a cumulative demand for new school facilities, the construction of which could result in significant environmental impacts (Impact 4.12-7). Construction of new schools in the Cities of Davis, Winters, Dixon, and Woodland could result in development of agricultural areas, which could result in the permanent loss of prime farmland and habitat. Other potentially significant environmental impacts are too speculative to determine at this time. To the extent that the school-age dependents of new campus employees could contribute to the demand for new school facilities in these cities, in compliance with LRDP Mitigation 4.12-7, the campus would negotiate with respective school districts to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. The campus' contribution to mitigation for such effects could include implementation of preservation mechanisms for on-campus prime farmland and/or habitat conservation. However, impacts associated with an irreversible loss of prime farmland and habitat could not be mitigated to less-than-significant levels. Therefore, the impact related to school construction in the Cities of Davis, Winters, Dixon, and Woodland would be significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

a, iv) Effects associated with parks are evaluated in Section 7.14 Recreation.

a, v) **Libraries**

The proposed project would contribute to the campus population but would not increase numbers beyond what was addressed in the 2003 LRDP EIR, nor would it introduce any new significant population impacts that were not previously addressed placing new demands for libraries. UC Davis provides extensive academic library facilities in four general libraries that serve students, faculty, staff, and the general public, as well as in specialized libraries on campus. With its extensive existing libraries and ongoing update processes, UC Davis has adequate facilities to provide sufficient library services to serve the campus and general population's needs through 2015-16. Therefore, construction of additional library facilities on campus as the result of campus growth under the 2003 LRDP is not anticipated. Furthermore, due to the small scale and infill nature of minor library expansions and renovations that could occur in the Cities of Davis, Dixon, Woodland, and Winters to serve cumulative growth through 2015-16, significant environmental impacts are not anticipated to result. Therefore, project-level and cumulative impacts associated with library services are considered less than significant.

Summary

Mitigation measures 4.12-6 and 4.12-7 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of public service-related impacts to the extent feasible. The proposed project would not exceed the levels of significance of public service impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant public service impacts that were not previously addressed.

7.14 RECREATION

7.14.1 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.

7.14.2 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.

7.14.3 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. A significant recreation impact identified in the 2003 LRDP EIR that is relevant to the proposed project is presented below with its 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 4.13-2 but this impact is identified as significant and unavoidable because it cannot be fully mitigated.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
RECREATION			
4.13-2	Implementation of the 2003 LRDP, together with the cumulative impacts of other regional development, could increase the use of off-campus recreation facilities, the development of which could result in significant environmental impacts.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

RECREATION

4.13-2 If documented unmitigated significant environmental impacts are caused by the construction of recreation facilities in the Cities of Dixon, Woodland, and/or Winters that are needed in part due to implementation of the 2003 LRDP, UC Davis shall negotiate with the appropriate local jurisdiction to determine the campus' fair share (as described in Section 4.12.2.3) of the costs to implement any feasible and required environmental mitigation measures so long as the unmitigated impacts have not been otherwise reduced to less-than-significant levels through regulatory requirements, public funding, or agreements. This mitigation measure shall not apply to any other costs associated with implementation of recreation facilities.

7.14.4 Environmental Checklist and Discussion

RECREATION	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a,b) The proposed project at the Physical Sciences Expansion site would allow about 85 existing staff to move from their current locations, which could then accommodate additional campus population of 85. The student population would not increase above that considered in the 2003 LRDP. Construction of the Service Unit Park would accommodate an increase of 228 staff members, adding to the existing campus population. The proposed project would not exceed the levels of population previously addressed in the 2003 LRDP EIR. The proposed project does not include recreation facilities. Impacts of campus growth under the 2003 LRDP through 2015-16 related to population are evaluated in Section 4.11 of the 2003 LRDP EIR. The proposed project would contribute to increased campus population; however, this increase was included as part of the 2003 LRDP EIR. Therefore, the proposed project would not contribute additionally to the campus population beyond what was already analyzed and mitigated for in the 2003 LRDP EIR. As a result, the proposed project would not create additional demand for parks and recreation facilities beyond what was determined sufficient for the 2015-16 projected campus population.

The 2003 LRDP EIR found that increased population at UC Davis under the 2003 LRDP, including the population growth associated with the proposed project, is expected to result in increased demand for and usage of campus recreation facilities. However, to counteract the effects of increased usage, it is campus practice to increase maintenance levels of recreation facilities in response to increases in demand. In addition, the 2003 LRDP designates approximately 18 acres of land west of SR 113 for future recreation fields. The 2003 LRDP also designates land for greenbelts to the west of State Route

113, expansion of the campus Arboretum, expansion of the Putah Creek Riparian Reserve, and enhanced formal open space (garden walks and formal courtyards) within the central campus. The construction of new facilities would take place when warranted by increased demand and when financially feasible. The campus practice of increasing maintenance activities and the planned construction of new facilities would prevent the deterioration of existing recreation facilities, resulting in a less than significant impact.

The 2003 LRDP EIR found that implementation of the 2003 LRDP, together with other regional growth, could result in the development of parks and recreation facilities off-campus that could result in significant environmental impacts (Impact 4.13-2). Depending on the site, development of new parks and recreation facilities in the cities of Dixon, Winters, and Woodland could result in impacts such as loss of prime farmland or valuable habitat. However, environmental impacts are too speculative to determine at this time. In compliance with LRDP Mitigation 4.13-2, the campus would negotiate with respective jurisdictions to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. Due to the speculative nature of this cumulative impact, it is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Summary

Mitigation measure 4.13-2 from the 2003 LRDP EIR is relevant to the proposed project and reduces the significance of recreation-related impacts to the extent feasible. The proposed project would not exceed the levels of significance of recreation impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant recreation impacts that were not previously addressed.

7.15 TRANSPORTATION, CIRCULATION, & PARKING

7.15.1 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 Road, 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 2005.

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 14,500 parking spaces were provided on campus as of 2001-02.

Project Site

The site for the Physical Sciences Expansion is located in the Central Campus to the south of the existing Physics/Geology building, and is now occupied by the Facilities Services building along with other smaller buildings and parking lots that are part of the O&M complex. Primary access to the site is from California Avenue. Parking is provided in a series of surface parking lots and parking structures within the Core Campus, (which is bounded by Russell Boulevard to

the north, Old Davis Road to the south, A Street to the east, and La Rue Road to the west) providing approximately 8,275 parking spaces.

The site for the Service Unit Park is located on the west campus across Hopkins Road from the University Airport. Hopkins Road provides the principal access to the site. As part of the project, Hopkins Road would be widened south of Hutchison Drive to install a left-turn lane for traffic from northbound Hopkins to westbound Hutchison. The site is currently a teaching and research field.

7.15.2 2003 LRDP EIR Standards of Significance

The 2003 LRDP EIR considers a transportation, circulation, and parking impact significant if growth under the 2003 LRDP would:

- Cause an increase in the traffic that may be substantial in relation to the existing roadway capacity of the street system as indicated by LOS standards for congestion at intersections.
- The addition of project traffic causing a LOS change from acceptable to unacceptable would have a significant impact. The following LOS thresholds apply to the study intersections.
 - LOS D is the minimum acceptable LOS for UC Davis.
 - LOS E is the minimum acceptable LOS for the City of Davis. LOS F is acceptable for the City of Davis Core Area.
 - LOS E is the minimum acceptable LOS for I-80 and its associated interchanges.
 - LOS C is the minimum acceptable LOS for SR 113 and its associated interchanges.

In addition, the project would have a significant impact if the project adds 10 or more vehicles to the volume of a study intersection that is expected to operate unacceptably without the project. For intersections that operate unacceptably without the project, even a small amount of additional traffic could increase the delay. For the LRDP EIR, future volumes are rounded to the nearest 10; therefore, 10 vehicles is the minimum amount of traffic that could be added to an intersection already operating at an unacceptable level.

- Increased intersection congestion would also be a significant impact if it would exceed a LOS standard established by the county congestion management agency (or any affected agency or jurisdiction) for designated roads or highways.
 - LOS E is the minimum acceptable LOS for roadways and intersections in Solano County.
 - LOS E is the minimum acceptable LOS for I-80 and its associated interchanges between the Solano County limit and Olive Drive.
 - LOS E is the minimum acceptable LOS for SR 113 and its associated interchanges within the Davis city limits.
 - LOS E is the minimum acceptable LOS for Russell Boulevard between SR 113 and B Street.
 - LOS E is the minimum acceptable LOS for Richards Boulevard between First Street and I 80.

- ~ LOS E is the minimum acceptable LOS for First Street between B Street and Richards Boulevard.
- ~ LOS E is the minimum acceptable LOS for B Street between First Street and 5th Street.

Result in inadequate parking capacity.

For parking, a project would be considered to have a significant impact if it is expected to increase the winter utilization rate to over 90 percent on the central campus, Health Sciences District, and/or major facilities of the west and south campus without adequate time (usually 24 months) to implement a parking solution to campus construction standards.

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

Impacts related to safety risks associated with the UC Davis airport and emergency access are discussed in Section 7.7 Hazards and Hazardous Materials. The 2003 LRDP would make only limited changes to the roadway network and would not create or increase hazards due to design features such as dangerous intersections.

7.15.3 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. 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 traffic, circulation, and parking 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 in the LRDP EIR to reduce the magnitude of impact 4.14-2, but this impact is identified as significant and unavoidable because mitigation falls within other jurisdictions to enforce and monitor and therefore cannot be guaranteed by the University of California.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
TRANSPORTATION, CIRCULATION, & PARKING			
4.14-1	Implementation of the 2003 LRDP would cause unacceptable intersection operations at on-campus intersections.	S	LS
4.14-2	Implementation of the 2003 LRDP would cause unacceptable intersection and freeway LOS operations at off-campus facilities, including facilities contained in the Yolo County and Solano County Congestion Management Plans.	S	SU
4.14-3	Implementation of the 2003 LRDP would create additional parking demand.	PS	LS
4.14-4	Implementation of the 2003 LRDP would increase demand for transit services.	PS	LS
4.14-5	Growth in population levels in the core area of the central campus would result in increased conflicts between bicyclists, pedestrians, and transit vehicles, causing increased congestion and safety problems.	PS	LS

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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

TRANSPORTATION, CIRCULATION, & PARKING

- 4.14-1(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
 - 4.14-1(b) UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways on campus.
 - 4.14-1(c) UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall construct physical improvements such as adding traffic signals or roundabouts at affected study intersections.
 - 4.14-2(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce vehicle-trips to and from campus.
 - 4.14-2(b) UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways in the campus vicinity at least every three years to identify locations operating below UC Davis, City of Davis, Yolo County, Solano County, or Caltrans LOS thresholds and to identify improvements to restore operations to an acceptable level.
 - 4.14-2(c) UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall contribute its fair share towards roadway improvements at affected study intersections.
 - 4.14-3(a) UC Davis shall continue to actively pursue Transportation Demand Management strategies to reduce parking demand.
 - 4.14-3(b) UC Davis shall continue to monitor parking demand on a quarterly basis to identify campus parking areas with a parking utilization over 90 percent. UC Davis shall provide additional parking if a proposed project is expected to increase the winter utilization rate to over 90 percent on the central campus, Health Sciences District, and/or major facilities of the west and south campus.
 - 4.14-4 UC Davis shall monitor transit ridership to identify routes operating over capacity with increased campus growth. UC Davis shall work with transit providers to identify additional service required with campus growth or new transit routes needed to serve future development areas.
 - 4.14-5 UC Davis shall monitor core area pedestrian and bike activity and accidents. UC Davis shall improve bike and pedestrian facilities or alter transit operations to avoid increased bicycle accident rates or safety problems.
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7.15.4 Environmental Checklist and Discussion

TRANSPORTATION, CIRCULATION & PARKING	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	Less than Significant Impact	No Impact
Would the project...					
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Conflict with applicable adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) The Physical Sciences Expansion project would result in an increase in the number of vehicular trips, as the project involves relocation of activities already located in the vicinity of the project site, and the vacated space would be backfilled by other activities. This backfilling would result in a potential population increase of about 85 staff members on the Core Campus. Traffic generated by the Physical Sciences Expansion increase in employees would contribute to the overall increase in traffic levels for the Core Campus projected in the LRDP EIR and resulting exceedance of peak-hour LOS standards at on-campus intersections identified in the LRDP EIR. LRDP Mitigation Measures 4.14-1(a-c) 4.14-2(a-c), which are relevant to the proposed project, require that the campus continue to pursue Transportation Demand Management strategies to reduce vehicle-trips, monitor peak hour traffic operations at critical locations, review individual projects to determine if operations will degrade to unacceptable levels, and contribute fair share costs to roadway improvements if operations degrade. These measures continue to be implemented. Because the feasibility and/or implementation of off-campus roadway and intersection improvements is ultimately within the jurisdiction of other authorities and cannot be guaranteed by the University, this impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

Approximately 680 employees would be relocated to the proposed Service Unit Park from existing locations in the Central Campus and Core Campus. It is expected that the number of employees at the Service Unit Park would increase between 2006 and 2015 by approximately 15 percent with a resulting 15 percent increase in both home-to-work and on-campus vehicle trips at the Service Unit Park. The total number of peak hour vehicle trips generated by the Service Unit Park in 2006 (including home-to-work trips and on-campus trips) would be 295 in the AM peak hour and 224 in the PM peak hour. By 2015, the total number of trips would increase to 340 in the AM peak hour and 259 in the PM peak hour. As part of the project, Hopkins Road would be widened south of Hutchison Drive to install a left-turn lane for traffic from northbound Hopkins to westbound Hutchison; this would be important for outgoing service and delivery vehicles accessing I-80 via County Road 98. Hopkins Road and Hutchison Drive would be the local roadways most affected by the traffic generated by the Service Unit Park. Virtually all of the home-to-work trips and on-campus trips would use these roads to access the site. An estimated 85% of all home-to-work trips and 92% of on-campus trips would travel the segment of Hutchison Drive between Hopkins Road and Highway 113. Highway 113 south of Hutchison Drive would be used by 60% of the home to work trips and 15% of the on-campus trips, while Highway 113 north of Hutchison Drive would be used by 20% of the home-to-work trips.

The 2003 LRDP EIR found that implementation of the 2003 LRDP would cause unacceptable intersection operations at on-campus intersections (Impact 4.14-1). According to the traffic study conducted for the Service Unit Park by Fehr & Peers (2004a), ("Service Unit Park Traffic Impact Study Final Report", January 2004) traffic generated by the Service Unit Park would contribute to exceedance of peak hour LOS standards at the Hutchison Drive/La Rue Road intersection in the PM peak hour under Year 2015 plus project conditions, and would also contribute to exceedance of LOS standards in the AM and PM peak hours at the Hutchison Drive intersections with the northbound Highway 113 ramps and the southbound Highway 113 ramps under Year 2015 plus project conditions. The study also concluded that the same intersections would also operate at unacceptable conditions under Year 2015 conditions without the Service Unit Park, but that under existing 2004 conditions, the Service Unit Park would not result in exceedance of LOS standards at any of these intersections. Thus, the Service Unit Park alone does not result in a significant impact.

The 2003 LRDP EIR found that additional vehicle trips under the buildout of the 2003 LRDP would cause the LOS at ten on-campus intersections to drop below acceptable levels. LRDP Mitigation 4.14-1(a-c), which is relevant to the proposed project and continues to be implemented by UC Davis to mitigate future potential LOS exceedances such as those at the SR113/Hutchison ramps, requires that the campus continue to pursue Transportation Demand Management strategies to reduce vehicle-trips, monitor peak hour traffic operations at critical locations, review individual projects to determine if intersection operations would degrade to unacceptable levels, and implement physical improvements when intersection operations degrade. The roadway improvements in Mitigation Measure 4.14-1 of the LRDP EIR also include improvement of the Hutchison/La Rue intersection by adding a right-hand turn lane on the southbound La Rue approach to the intersection.

UC Davis' continued implementation of Mitigation Measure 4.14-1(a) (TDM strategies to reduce vehicle trip to and from the campus) may be sufficient to mitigate the additional impact of the Service Unit Park on the Hutchison/La Rue intersection. However, to track

the effectiveness of 4.14-1(a), Mitigation Measure 4.14-1(b) (monitoring AM and PM peak hour traffic operations) continues to be implemented to identify intersections that may experience unacceptable delays. As needed, the campus continues to implement Mitigation Measure 4.14-1(c) (constructing intersection improvements to achieve acceptable level of service) on a project-by-project basis and, as needed, constructs additional improvements based on the results of intersection monitoring from 4.14-1(b).

The Traffic Impact Study for the Service Park Unit also recommended an additional improvement to the Hutchison/La Rue intersection, consisting of an added through lane for the westbound Hutchison Drive approach to the intersection. However, this measure was rejected by UC Davis because it would require removal of oak trees at this intersection, and UC Davis is committed to avoiding loss of oak trees where feasible. Instead, the campus has considered other mitigation measures that could be equally effective at reducing the potential SUP level of service impact at the Hutchison/La Rue intersection (Fehr & Peers 2004b). One option includes converting parking lots along Hutchison Drive to uses that do not result in vehicle trips. This would have the effect of reducing the peak hour vehicle usage at the Hutchison/La Rue intersection. Potential parking lots for conversion include Parking Lots 29, 43, 43b, 41, and 40. In total, these lots contain parking for more than 500 vehicles. Parking Lot 29 is planned for conversion to a bus terminal by 2008 (or earlier). Preliminary planning for food service expansion at the Silo food service area has identified potential conversion of Parking Lots 43 and 43b. In addition, the 2003 LRDP identifies Parking Lots 40 and 41 for future academic and administrative uses by 2016. Conversion of some or all of these identified parking spaces along Hutchison Drive is not certain but is considered likely to occur prior to 2016.

If the parking lot conversions do not occur, another option involving operational changes to the usage of the parking lots may be instituted to reduce the PM peak hour vehicle trips at the Hutchison/La Rue intersection. Examples include using portions of the Hutchison Drive parking lots for University vehicles and encouraging service employees to use gate card access at Bioletti Way rather than the Hutchison/La Rue intersection during the PM peak hour.

The following mitigation measure would reduce the potential PM peak hour traffic impact at the Hutchison/La Rue intersection associated with the Service Unit Park in conjunction with cumulative traffic associated with the LRDP to a less-than-significant level.

Mitigation Measure:

MM-1

UC Davis shall proceed with planning and implementing parking lot conversions along Hutchison Drive that will have the effect of reducing PM peak hour vehicle trips at the Hutchison/La Rue intersection. UC Davis shall implement parking lot operational changes at parking lots along Hutchison Drive if the expected parking lot conversions do not occur by 2016. Operational changes shall include conversion of spaces to long term use (rather than metered use), reservation of parking spaces for University vehicles or other non-peak hour uses, or encouraging employees using the University during the peak hour to avoid the Hutchison/La Rue intersection and utilize gate card access at Bioletti Way. Traffic intersection monitoring results from the continued implementation of LRDP Mitigation Measure 4.14-1(b) would be used to determine the need to accelerate planned parking lot conversions or to implement parking lot operational changes.

With implementation of measures identified in the 2003 LRDP EIR, and Mitigation Measure MM-1 as described above, the impact associated with the project's contribution to degraded on-campus intersection operations would be less than significant.

- b) The 2003 LRDP EIR also identified that implementation of the 2003 LRDP would cause unacceptable intersection and freeway operations off-campus (Impact 4.14-2). Traffic generated by the Physical Sciences Expansion and the Service Unit Park would contribute to the overall increase in traffic levels for the Core Campus projected in the LRDP EIR and resulting unacceptable operations for off-campus intersections and freeways. Traffic generated by the Service Unit Park would contribute to unacceptable operation of the weave section on northbound Highway 113 between Hutchison Drive and Russell Boulevard in the PM peak hour; approximately 20 percent of the PM peak hour home-to-work trips generated by the Service Unit Park would utilize this section of Highway 113. LRDP Mitigation 4.14-2(a-c), which is relevant to the proposed project, requires that the campus continue to pursue Transportation Demand Management strategies to reduce vehicle-trips, monitor peak hour traffic operations at critical locations, review individual projects to determine if operations will degrade to unacceptable levels, and contribute fair share costs to roadway improvements if operations degrade. Because the feasibility and/or implementation of off-campus roadway and intersection improvements is ultimately within the jurisdiction of other authorities and cannot be guaranteed by the University, this impact is considered significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.
- c) Impacts related to safety risks associated with the UC Davis airport are discussed in Section 7.7, Hazards and Hazardous Materials.
- d) The project would change the roadway network to accommodate the Hopkins Road northbound turn lane, but it would not create or increase hazards due to design features such as dangerous intersections or incompatible uses. The Physical Services Expansion would provide bike parking in three locations adjacent to the building, and in addition to providing three pedestrian accesses to the facility, would also provide for a future connection to the Arboretum Walk to the south of the facility. The 2003 LRDP EIR identified that growth under the 2003 LRDP would increase conflicts between bicyclists, pedestrians, and transit vehicles on the core campus, resulting in increased congestion and safety problems (Impact 4.14-5). LRDP Mitigation 4.14-5, which is relevant to the proposed project, requires UC Davis to continue to monitor pedestrian and bike activity and accidents on the core campus, and to improve bike and pedestrian facilities or alter transit operations to reduce accident rates or safety problems. With this mitigation, the impact would be less than significant.
- e) Impacts related to emergency access are discussed in Section 7.7, Hazards and Hazardous Materials.
- f) The Physical Sciences Expansion project would result in an increase in the number of vehicular trips and additional demand for parking on the core campus, because the project involves relocation of activities already located in the vicinity of the project site and the vacated space would be backfilled by other activities. This backfilling would result in a

potential population increase of about 85 new staff on the core campus. However, because 516 staff would be relocated from the core campus to the Service Unit Park in the West Campus, there would be a net decrease of 431 staff in the core Campus. The Physical Sciences Expansion would provide 14 on-street parking spaces (2 spaces for electronic vehicles and 12 regular spaces; 2 accessible off-street spaces would also be provided). Land currently designated and used for parking on campus is located throughout the central campus. The 2003 LRDP provides for adequate and convenient parking on the central campus by identifying the following existing surface parking lots for potential redevelopment as parking structures: Parking Lot 25, near the Recreation Hall; Parking Lot 53, along the west side of the Health Sciences District; and Parking Lot 47, located south of the Tercero and Leach housing complexes. The Service Unit Park would require parking for approximately 800 FTE (full time equivalent) vehicles plus visitor parking. This demand would be accommodated on the site. The 2003 LRDP EIR identified that implementation of the 2003 LRDP would create additional parking demand (Impact 4.14-3). In compliance with LRDP Mitigation 4.14-3(a-b), which is relevant to the proposed project, the campus will: continue to pursue Transportation Demand Management strategies to reduce parking demand; monitor parking demand on a quarterly basis; and provide additional parking if a proposed project is expected to increase winter parking utilization rates over 90 percent on the central campus, at the Health Sciences District, and/or at major facilities on the west or south campuses. With implementation of measures identified in the 2003 LRDP EIR, this impact would be less than significant.

- g) The Physical Sciences Expansion project would result in an increase in the demand for transit services, because the project involves relocation of activities already located in the vicinity of the project site and the vacated space would be backfilled by other activities. This backfilling would result in a potential population increase of about 85 new staff on the Core Campus. The Service Unit Park would involve relocating approximately 680 people to the proposed site on the West Campus, which is outside the areas of existing transit service. The 2003 LRDP EIR identified that growth under the 2003 LRDP would increase demand for transit services (LRDP Impact 4.14-4), and that an impact could result if development under the 2003 LRDP could cause conflicts with applicable adopted policies, plans, or programs supporting alternative transportation. LRDP Mitigation 4.14-4, which is relevant to the proposed project, requires the campus to monitor transit ridership to identify routes that operate over capacity and work with transit providers to identify additional service or new transit routes needed to serve future growth. With implementation of this measure, the impact would be less than significant.

Summary

Mitigation measures 4.14-1 (a)-(c), 4.14-2 (a)-(c), 4.14-3 (a, b), 4.14-4, and 4.14-5 from the 2003 LRDP EIR are relevant to the proposed project and reduce the significance of transportation, circulation, and parking impacts to the extent feasible. Project-specific Mitigation Measure MM-1 would be implemented to address congestion at the intersection of LaRue Road and Hutchison Drive that could result from construction of the Service Unit Park. The proposed project would not exceed the levels of significance of transportation, circulation, and parking impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant impacts that were not previously addressed.

7.16 UTILITIES & SERVICE SYSTEMS

7.16.1 Background

Section 4.15 of the 2003 LRDP EIR addresses effects on utilities and service systems under the 2003 LRDP. The following discussion summarizes information presented in the 'Setting' subsection of Section 4.15 of the 2003 LRDP EIR.

The proposed project would use campus utilities and service systems including: domestic water, utility water, chilled water, steam, wastewater, storm drainage, solid waste, natural gas, electricity, and telecommunications systems. These utilities and service systems are discussed below:

- **Domestic Water:** The campus' domestic/fire water system obtains water from six deep aquifer wells to serve the needs of campus buildings, landscape irrigation on the west and south campuses, and heating and cooling systems at the Central Heating and Cooling Plant (CHCP). The system includes approximately 144,000 linear feet of distribution pipelines, a water tower and a ground storage tank with a combined capacity of approximately 500,000 gallons, an underground storage reservoir with a capacity of approximately 1.3 million gallons, and a booster pump station. In 2001-02, annual domestic water consumption was approximately 2,670 acre feet and peak demand was 3,100 gpm.
- Physical Sciences Expansion Site. In order to provide adequate pressure and supply in the domestic water system for this area, the Physical Science Expansion project would connect to existing lines to provide a looped system. A 10-inch water line is proposed on the east side of the building to serve both domestic water and sprinkler systems for the proposed buildings. The 10-inch line would connect the two water lines on the north and south side of the new building to provide a looped system. A second 10-inch line is proposed for both domestic and fire water on the southwest corner of the new building. Peak demand for domestic water would be 300 gallons per minute (gpm), with a demand for fire service of 450 gpm.

Service Unit Park Site. The project site domestic water system would connect with the 8-inch water main located in Hopkins Road with an approved water meter and reduced pressure backflow preventer. Total domestic water demand at peak site use is estimated to be 5,675 gpm.

- **Utility Water:** The campus' utility water system obtains water from six intermediate-depth aquifer wells to provide water for landscape irrigation, greenhouse irrigation, and some laboratories. The system includes one 100,000-gallon water tower. In 2001-02, annual utility water consumption was approximately 1,170 acre feet and peak demand was 1.5 mgd.

Physical Sciences Expansion Site. The existing utility water within the project area consists of a 4-inch pipeline beneath California Avenue and is currently at capacity. The project would thus need to provide a new 4-inch utility water loop to connect to the existing system to the northeast of the site. Demand for utility water would be 40 gpm.

Service Unit Park Site. Utility water would be connected from the domestic water system (that connects to the 8-inch water main) with a separate reduced pressure backflow preventer.

- **Wastewater:** UC Davis operates a campus wastewater conveyance and treatment system that is independent from regional facilities. The campus Wastewater Treatment Plant (WWTP) is located in the south campus, and treated effluent from the plant discharges to Putah Creek. The peak month capacity of the campus WWTP, as regulated under the existing NPDES permit issued by the CVRWQCB, is 2.7 mgd. Since the current WWTP began operation in March 2000, the maximum monthly flow has been 2.2 mgd. Maximum flow in 2001-02 was 1.6 mgd.

Physical Sciences Expansion Site. An existing 10-inch sanitary sewer main would be rerouted from the east side of the new building, then northerly and westerly around the perimeter of the building toward California Avenue. It would then be connected to the existing 12-inch sanitary sewer line in California Avenue. The existing 12-inch sewer would also serve the laterals from the new building. Demand for sewer capacity would be 11,520 gallons per day.

Service Unit Park Site. There is a 12-inch sewer line in Hopkins Road approximately 300 feet north of the site. Two 8-inch lines are proposed to connect to the existing 12-inch service at the Service Unit Park site. The 12-inch line has been extended across a portion of the frontage of the site and would be stubbed out of the manhole for future extension. This is a pumped system that connects to the campus WWTP.

- **Storm Drainage:** The central campus and developed parts of the west and south campuses are served by campus storm water drainage systems. The central campus drainage system involves a system of underground pipes that drain to the Arboretum Waterway (providing the only major detention storage in the system), from which storm water it is pumped to the South Fork of Putah Creek during large storm events.

Physical Sciences Expansion Site. The existing storm drain system on campus was designed for the 2-year storm event. Currently, there is an existing 24-inch storm drain on California Avenue and a system of storm drain pipes collecting water around the Facility Shops. These systems discharge to Putah Creek.

The proposed building includes demolition of approximately 125 feet of existing 6-inch drainage pipe and 180 feet of 12-inch pipe. A new underground storm drain system, which consists of 8-inch PVC pipes is proposed on the northeast and northwest side of the new building to collect surface water and rain water leaders. The northeasterly system would be connected to an existing storm drain manhole located northwest of the existing water tower. This system outfalls to Putah Creek south of La Rue Road. The system on the northwest side would drain into an existing manhole at the existing 24-inch storm drain line on California Avenue. Peak storm water runoff from the site would be 100 cubic feet per second (cfs); storm drain runoff would be 2.6 cfs for a 10-year storm even and 10-minute time concentration.

The runoff from the storm water on the southeast side of the new building would drain into an existing drop inlet. Catch basins located on the northwest side of the building would direct flow west through 8-inch pipes and would connect to the 24-inch storm drain line in California Avenue. Catch basins on the east side of the building would

direct flow eastward through 8-inch pipes and would connect with the 12-inch storm drain pipe located between the building and the water tower. No improvements to the existing storm drain system to increase capacity would be performed under this project.

Service Unit Park. Drainage from the site would be directed to an existing 48-inch storm drain that runs southerly along the project frontage, parallel to Hopkins Road, and outlets at Putah Creek.

- **Solid Waste:** UC Davis provides solid waste collection and recycling services for the campus. All nonrecycled and nonhazardous solid wastes collected on campus are disposed at the campus owned and operated Class III sanitary landfill located in the west campus west of County Road 98 and north of Putah Creek. The campus sends approximately 8,700 tons of solid waste to the campus landfill per year (approximately 34 tons per working day). In addition, approximately 3,300 tons of wastes from the UC Davis Medical Center in Sacramento are disposed at the landfill each year. The permitted capacity of the landfill is 500 tons per day, and the landfill unit currently being used has anticipated capacity to serve the campus needs through 2023. In 2001-02, approximately 10,804 tons of materials were diverted for recycling and reuse. The amount of materials diverted represents approximately 55 percent of the total waste generated on campus.
- **Electricity:** The main campus currently receives electricity from PG&E at the campus substation located south of I-80 and from an approximately 2.7 MW cogeneration plant located on the core campus in the CHCP facility. The campus electrical system has an available capacity of 64.4 megawatts (MW). Annual electrical usage on campus in 2001-02 was approximately 200 million kilowatt-hours (KWh) per year and peak demand was approximately 34,000 KW.

Physical Sciences Expansion Site. The electrical service for the proposed Physical Sciences Expansion building would be connected to existing electrical system manhole at the intersection of La Rue Road and California Avenue on the southwest side of the proposed structure. A standby generator would be installed to provide emergency power to egress lighting, exit signs, fire alarm, and standby power for telecommunications, central exhaust and supply fans at 50 percent volume for laboratories and a percentage of emergency outlets in the laboratories, electrical rooms and mechanical rooms.

Service Unit Park Site. A new electrical point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the southeast side of the site. Underground electrical distribution would be extended to the transformer that would serve the buildings at the site. A second point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the northeast side of the site during the construction of Phase 2. Underground electrical distribution would be extended to transformers for the buildings at the northeast and west portions of the property.

- **Natural Gas:** The campus purchases natural gas from outside vendors and provides it to the campus facilities through PG&E pipelines. Natural gas is provided to four locations on campus for use and distribution: the CHCP, the Primate Center Plant, the Cogeneration Plant, and the Master Meter #1. Peak natural gas demand in 2001-02 was approximately 2,900 therms per hour.

Physical Sciences Expansion Site. There is an existing gas line in California Avenue approximately 170 feet north of the intersection of La Rue Road and California Avenue, serving an existing building that would be demolished. A portion of existing gas line within the site would also be demolished. The existing lateral can be utilized to serve the proposed building.

Service Unit Park Site. There is no existing natural gas service to the site, and no new connections are proposed.

- **Chilled Water & Steam:** The campus chilled water and steam systems produce and convey steam to provide heat and chilled water to cool several buildings on the central campus. Campus buildings that are not connected to the campus chilled water and steam systems use individual heating, ventilation, and air conditioning (HVAC) systems. The campus operates two main chilled water plants (the CHCP and the Thermal Energy Storage Plant) with a total system capacity of approximately 15,500 tons. The campus' main steam plant is located in the CHCP. The total steam capacity at the CHCP is approximately 280,000 pounds per hour (pph) (including a 75,000 pph backup boiler for use in emergencies).

Physical Sciences Expansion Site. On California Avenue, stubs for a new chilled water supply and return main would be provided by the previously approved Robert Mondavi Institute project, which would serve the proposed Physical Sciences Expansion project, the existing Academic Surge Building and potential future development north of the proposed building. Environmental review of the infrastructure associated with the Robert Mondavi Institute project took place with the 2003 LRDP EIR (State Clearinghouse #2002102092). A new 24-inch line would be installed in California Avenue and would provide a point of connect for the project. .

There is no steam service in the vicinity that has the capacity to serve the Physical Sciences Expansion. The UC Davis Robert Mondavi Institute project would provide a point of connection at the intersection of California Avenue and La Rue Road. A looped 10-inch steam line is required to maintain pressure in the east area of the campus and meet the demand of new development. The new steam line is proposed on California Avenue to serve the proposed building and future expansion

Service Unit Park Site. The Service Unit Park would not use chilled water or steam service because there is no service in the vicinity of the project site.

- **Telecommunications:** The majority of all telephone, data, video, and wireless infrastructure and facilities on campus are owned by the campus and operated by the UC Davis Communications Resources Department. The main campus switching facility is located in the Telecommunications Building. As new buildings are constructed, the Communications Resources Department coordinates with the UC Davis Office of Architects and Engineers to design and direct the installation of intra- and inter-building telecommunications facilities in accordance with established standards.

Physical Sciences Expansion Site. The point of connection for new service provided by the project would be at the existing manhole in the access road south of the Physical Sciences Expansion building.

Service Unit Park Site. The telecommunications system would be connected through conduits to the existing campus distribution system at a one of the nearby manholes on the southeast or northeast side of the site across Hopkins Road.

The campus is required to comply with a UC-wide green building policy and clean energy standard. 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 2003).

7.16.1 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.

7.16.2 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. Significant and potentially significant utilities and service systems 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, impacts 4.15-1, 4.15-2, 4.15-3, 4.15-4, 4.15-6, 4.15-8, and 4.15-9, presented below, are considered less than significant prior to mitigation, but mitigation measures were identified in the 2003 LRDP EIR to further reduce the significance of these impact. Less than significant impacts that do not include mitigation are not presented here. Mitigation measures are included to reduce the magnitude of cumulative impact 4.15-10, but this impact is identified as significant and unavoidable because it cannot be fully mitigated.

2003 LRDP EIR IMPACTS		Level of Significance Prior to Mitigation	Level of Significance After Mitigation
UTILITIES & SERVICE SYSTEMS			
4.15-1	Implementation of the 2003 LRDP would require the expansion of campus domestic/fire water extraction and conveyance systems, which would not cause significant environmental impacts.	LS	LS
4.15-2	Implementation of the 2003 LRDP would require the expansion of campus utility water extraction and conveyance systems, which would not cause significant environmental impacts.	LS	LS
4.15-3	Implementation of the 2003 LRDP would require the expansion of wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts.	LS	LS
4.15-4	Implementation of the 2003 LRDP would require the expansion of campus storm drainage conveyance and detention facilities, which would not result in significant environmental impacts.	LS	LS
4.15-6	Implementation of the 2003 LRDP would require the expansion of the campus electrical system, which would not result in significant adverse environmental impacts.	LS	LS
4.15-7	Implementation of the 2003 LRDP would require the expansion of natural gas transmission systems, which would result in environmental impacts.	PS	LS
4.15-8	Implementation of the 2003 LRDP would require the expansion of campus chilled water and steam generation and conveyance facilities, which would not result in significant environmental impacts.	LS	LS
4.15-9	Implementation of the 2003 LRDP would require expansion of campus communication facilities, which would not result in significant environmental impacts.	LS	LS
4.15-10	Implementation of the 2003 LRDP together with other regional development could generate a cumulative demand for wastewater treatment facilities in the region, the construction of which could result in significant environmental impacts on habitat.	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 will not be readopted in this Initial Study or Mitigated Negative Declaration. 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 2003 LRDP EIR mitigation measures.

2003 LRDP EIR MITIGATION MEASURES

UTILITIES & SERVICE SYSTEMS

- 4.15-1(a) Once preliminary project design is developed, the campus shall review each project to determine if existing domestic/fire water supply is adequate at the point of connection. If domestic/fire water is determined inadequate, the campus will upgrade the system to provide adequate water flow and pressure to the project site before constructing the project.
- 4.15-1(b) Implement domestic water conservation strategies as indicated in LRDP Mitigation 4.8-5(a) (see Section 7.8 Hydrology and Water Quality of this Tiered Initial Study).
- 4.15-2(a) Once preliminary project design is developed, the campus shall review each project to determine whether existing utility water supply is adequate at the point of connection. If the utility water supply is determined to be inadequate, the campus will upgrade the system to provide adequate water flow to the project site prior to occupation or operation.
- 4.15-2(b) Implement utility water conservation strategies as indicated in LRDP Mitigation 4.8-6(a) (see Section 7.8 Hydrology and Water Quality of this Tiered Initial Study).
- 4.15-3 Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the sanitary sewer line at the point of connection is adequate. If the capacity of the sewer line is determined inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.
- 4.15-4 Once preliminary project design is developed, the campus shall review each project to determine whether existing storm drainage system is adequate at the point of connection. If the storm drainage system is determined inadequate, the campus will upgrade the system to provide adequate storm water drainage and/or detention prior to occupation or operation.
- 4.15-6(a) Once preliminary project design is developed, the campus shall review each project to determine whether the existing electrical system is adequate at the point of connection. If the electrical system is determined inadequate, the campus will upgrade the system to provide adequate service to the project prior to occupation or operation.
- 4.15-6(b) The campus would continue to meet or exceed Title 24 energy conservation requirements for new buildings, and it would continue to incorporate energy efficient design elements outlined in the UC Davis Campus Standards & Design Guide in new construction and retrofit projects. These energy conservation standards may be subject to modification as more stringent standards are developed.
- 4.15-7(a) Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the natural gas supply pipeline at the point of connection is adequate. If the capacity of the pipeline is determined inadequate, the system will be updated to provide adequate service to the project site prior to occupation or operation.
- 4.15-7(b) To minimize disturbance to archaeological resources associated with CA-Yol-118, PG&E can and should implement directional drilling or other alternative means to trenching, or should have a qualified archaeological monitor present and provide a representative of the local Native American community an opportunity to monitor during construction.
- 4.15-8 Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the chilled water and/or steam system at the point of connection is adequate. If the capacity of the pipelines is determined inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.
- 4.15-9 Once preliminary project design is developed, the campus shall review each project to determine whether existing capacity of the telecommunications system is adequate. If the capacity is determined to be inadequate, the campus will upgrade the system to provide adequate service to the project site prior to occupation or operation.
- 4.15-10 Implementation of the 2003 LRDP together with other regional development could generate a cumulative demand for wastewater treatment facilities in the region, the construction of which could result in significant environmental impacts on habitat.

7.16.3 Environmental Checklist and Discussion

UTILITIES & SERVICE SYSTEMS		Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 permitted peak monthly average capacity of the campus WWTP is currently 2.7 mgd, and growth under the 2003 LRDP, including the proposed project, is anticipated to increase the volume of discharge to 3.85 mgd through 2015-16. As discussed further in item "a,f" in Section 7.8, Hydrology and Water Quality, with continuation of current practices and implementation of 2003 LRDP EIR mitigation measures, the campus anticipates that it will comply with the WWTP's treatment requirements. Therefore, the impact associated with possible exceedances of WWTP requirements would be less than significant.

Both the Physical Sciences Expansion and Service Unit Park would contribute effluent to the campus wastewater treatment plant. The existing 12-inch sanitary sewer line

downstream of the site in La Rue Road, which would accommodate flows from the Physical Sciences Expansion facility, is scheduled for upgrading as part of the Robert Mondavi Institute utility improvements. Proposed utility improvements are planned to accommodate capacity needs in the Central Campus. Environmental review of the infrastructure associated with the Robert Mondavi Institute project took place with the 2003 LRDP EIR (State Clearinghouse #2002102092). The expected peak demand for the sanitary sewer system at the Service Unit Park site is estimated to be 91,200 gallons per day. The existing 12-inch pipe is adequate to handle the project sewer flow.

b) Domestic Water Facilities

A 10-inch water line is proposed on the east side of the Physical Sciences Expansion building to serve both domestic water and sprinkler systems for the proposed buildings. The 10-inch line would connect the two water lines on the north and south side of the new building to provide a looped system. A second 10-inch line is proposed for both domestic and fire water on the southwest corner of the new building. Existing fire hydrants are adequate to serve the project. Backflow preventers would be installed on both services to the building. A fire department connection in accordance with UC Davis standards would be provided.

Based on the results of the Physical Sciences Expansion District Utility Study prepared by UC Davis Architecture and Engineer Department, dated January 2004 (UC Davis, 2004), the Domestic Water Tower 1, located approximately 150 feet east of the proposed building, is adequate to support the new development.

At the Service Unit Park site, the existing 8-inch line in Hopkins Road is adequate to serve the project. The site would be encircled with a new 12-inch water line to provide domestic and fire service. Domestic water would be supplied to the building from the main with an approved water meter and reduced pressure backflow preventer.

The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus domestic/fire water extraction and conveyance systems, the construction of which would not cause significant environmental impacts (LRDP Impact 4.15-1). The domestic water line(s) associated with the project would be constructed within a previously disturbed area where cultural and biological resources would likely not occur. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. The project may also contribute to the need for a new domestic water well on campus, which would occupy a ½ to 1-acre site. Environmental impacts associated with this development (including impacts on agricultural resources and hydrology) would be minor, were thoroughly addressed for other resource topics in the 2003 LRDP EIR, and would be specifically evaluated at the time such a development is proposed. Therefore, effects associated with domestic water utility extensions would be less than significant. LRDP Mitigation 4.15-1(a-b), which is relevant to the proposed project, would further reduce the significance of this impact by requiring the water conservation strategies outlined in LRDP Mitigation 4.8-5(a) (see Hydrology and Water Quality section), and requiring that the campus review the project to determine if the domestic/fire water supply is adequate at the point of connection and if any upgrades to the system are required. Utility evaluations for domestic water supply were conducted for both sites as part of the Detailed Project Plans (DPPs), and the proposed connections were determined to be adequate to serve both facilities.

Utility Water Facilities

The proposed Physical Sciences Expansion site would provide a 4-inch utility water loop to connect the existing system west of the project site to the existing system to the northeast of the project site. This is being required to provide adequate pressure and capacity for this project as well as future projects planned for this area. Utility water at the Service Unit Park site would be connected from the potable domestic cold water system with a separate reduced pressure backflow preventer. Construction of the water loop would take place in previously disturbed land and is not expected to cause any significant impacts.

The 2003 LRDP EIR identified that campus development under the 2003 LRDP would require the expansion of campus utility water extraction and conveyance systems, the construction of which would not cause significant environmental impacts (LRDP Impact 4.15-2). The utility water line(s) associated with the project would be constructed within a previously disturbed area where cultural and biological resources would likely not occur. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. The project may also contribute to the future need for a new utility water well on campus, which would occupy a ½ to 1-acre site. Environmental impacts associated with this development (including impacts on agricultural resources and hydrology) would be minor, are thoroughly in the 2003 LRDP EIR, and would be specifically evaluated at the time such a development is proposed. Therefore, effects associated with domestic water utility extensions would be less than significant. LRDP Mitigation 4.15-2(a-b), which is relevant to the proposed project, would further reduce the significance of this impact by requiring the water conservation strategies outlined in LRDP Mitigation 4.8-6(a) (see Hydrology and Water Quality section), and requiring that the campus review the project to determine if the utility water supply is adequate at the point of connection and if any upgrades to the system are required. Utility evaluations for utility water supply were conducted for both sites as part of the DPPs, and the proposed connections were determined to be adequate to serve both facilities.

Wastewater Facilities

The footprint of the proposed Physical Sciences Expansion building is in conflict with the existing 10-inch sanitary sewer main. This utility would be rerouted from manhole No. SSMH18-10SW on the east side of the new building, then northerly and westerly around the perimeter of the building toward California Avenue. It would then be connected to the existing 12-inch sanitary sewer line in California Avenue. At least two new manholes would be required. Construction of the new facilities would take place in previously disturbed land and would not cause significant impacts. The existing 12-inch sewer would also serve the laterals from the new building. According to the District Utility Study (UC Davis, 2004), the existing 12-inch sanitary sewer line downstream of the site in La Rue Road is either at or over capacity due to insufficient pipe slope. The report also states that the future development would exceed the capacity of the sewer pipe. However, overflow is unlikely due to its depth. A gravity system would be provided for fixtures above grade where it is not possible to meet the invert elevations of the campus sewer system.

The Service Unit Park site would provide two 8-inch lines that would connect to the existing 12-inch line stubbed out of the manhole near the site frontage along Hopkins Road. The existing 12-inch pipe is adequate to handle the site sewer flow. The system is a pumped system that goes to the campus WWTP. The depth of the existing sewer is adequate to serve the project without an additional pump station. However, an additional pump station may be included in the project design in order to accommodate future development (DPP, 2004).

The 2003 LRDP EIR identified that implementation of the 2003 LRDP, including the proposed project, would require the expansion of campus wastewater treatment and conveyance facilities, the construction and operation of which would not result in significant environmental impacts (Impact 4.15-3). Future expansion of the existing WWTP and installation of new sanitary sewer conveyance lines would primarily occur on previously disturbed ground. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. Therefore, this impact would be less than significant. LRDP Mitigation 4.15-3, which is relevant to the proposed project, would further reduce the significance of this impact by ensuring the campus practice of reviewing projects to determine if there is adequate capacity to provide sanitary sewer service, and to upgrade the system as necessary. Utility evaluations for wastewater were conducted for both sites as part of the DPPs, and the proposed connections were determined to be adequate to serve both facilities.

Implementation of the proposed project would result in an increase in campus population due to the potential for additional staff and off campus students. However, the increase in staff and students would not be above the level included in the 2003 LRDP. These additional staff members and their dependents could potentially move into the regional communities to be closer to their places of work. This would contribute to the cumulative demand for wastewater treatment facilities in the region, which the 2003 LRDP EIR recognized could result in significant environmental impacts (Impact 4.15-10). Because expansion of wastewater treatment facilities in local jurisdictions could require development on agricultural land, loss of farmland and/or habitat could result. To the extent that an increase in off-campus population associated with the 2003 LRDP, including the proposed project, could contribute to the demand for wastewater treatment, in compliance with LRDP Mitigation 4.15-10, the campus would negotiate with the affected jurisdictions to determine the University's fair share of costs for feasible mitigation to reduce associated significant environmental impacts. The campus' contribution to mitigation could include implementation of preservation mechanisms for on-campus prime farmland and/or habitat conservation. However, impacts associated with an irreversible loss of prime farmland and habitat could not be mitigated to less-than-significant levels. Therefore, the cumulative impacts related to wastewater treatment facility construction in the Cities of Davis, Winters, Dixon, and Woodland would be significant and unavoidable. This impact was adequately analyzed in the 2003 LRDP EIR and was fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- c) The existing storm drain system on campus was designed for the 2-year storm event. Currently, there is an existing 24-inch storm drain on California Avenue and a system of storm drain pipes collecting water around the Facility Shops. These systems discharge to Putah Creek.

The proposed building is in conflict with approximately 125 feet of 6-inch pipe and 180 feet of 12-inch pipe that would be demolished. A new underground storm drain system, which consists of 8-inch PVC pipes is proposed on the northeast and northwest side of the new building to collect surface water and rain water leaders. The northeasterly system is connected to the existing storm drain manhole No. SDMH18-10SW, located northwest of the existing water tower. This system outfalls to Putah Creek south of La Rue Road. The system on the northwest side drains into existing manhole No. SDMH18-12SW at the existing 24-inch storm drain line on California Avenue.

The runoff from the storm water on the southeast side of the new building drains into an existing drop inlet. Catch basins located on the northwest side of the building would direct flow west through 8-inch pipes and would connect to the 24-inch storm drain line in California Avenue. Catch basins on the east side of the building would direct flow eastward through 8-inch pipes and would connect with the 12-inch storm drain pipe located between the building and the water tower.

The 48-inch storm drain along the Hopkins Road at the Service Unit Park site does not appear to have adequate capacity for the proposed project. The University requires storm water detention on any new projects along the Hopkins Road system. Detention requirements would be determined by a site hydrology study for a 10-year storm event. Landscape areas to the north and east of the building areas would be designed to provide adequate detention, and additional storage would be obtained in parking areas and other parts of the site. The site would be graded to protect buildings from a 100-year storm event. Shallow retention ponds would be placed in the planters that would be located around the perimeter of the site. Sheet flow across the parking lots is proposed to drain directly into the adjacent detention ponds wherever possible. A secondary small diameter drain pipe system would be installed for the roof drains. The main backbone drainage system would interconnect the detention ponds and would be placed below the ponds with controlled drain inlets to allow for bubble-up into the ponds and restricted flow out of the ponds into the existing 48-inch drain line.

Section 4.15 of the 2003 LRDP EIR identified that implementation of the 2003 LRDP would require the expansion of storm drainage conveyance and detention facilities, the construction and operation of which would not result in significant environmental impacts (Impact 4.15-4). Installation of storm drainage conveyance lines on campus would primarily occur on previously disturbed ground. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. LRDP Mitigation 4.15-4, which is relevant to the proposed project, would further reduce this less-than-significant impact by ensuring the campus practice of reviewing projects to determine if there is adequate capacity to provide storm water drainage service for the proposed project, and to upgrade the system as necessary. Utility evaluations for storm drainage were conducted for both sites as part of the DPPs. The proposed connection would be adequate to serve the Physical Sciences Expansion, but drainage system modifications as described above would be required to serve the proposed Service Unit Park.

- d) The proposed project would result in a small increase in the use of domestic/fire water from the deep aquifer. Utility water would be obtained from the Campus utility water distribution system with installation of a 4-inch looped system at the Physical Sciences

Expansion site, and from the domestic water system at the Service Unit Park site. Impacts associated with the project's demand for water from the deep and shallow/intermediate aquifers are addressed in item (b) in Section 7.8, Hydrology and Water Quality. As addressed in Section 7.8, mitigation measures would be implemented under the 2003 LRDP to reduce the campus' demand for domestic/fire and utility water, to monitor impacts on the groundwater aquifers, and to manage water sources if impacts on the aquifers are identified. However, regardless of mitigation, because the effects of increased groundwater extraction are not currently well understood, impacts of increased water use are considered significant and unavoidable (LRDP Impacts 4.8-5 and 4.8-6). This impact was adequately analyzed in the 2003 LRDP EIR and fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

- e) The campus' WWTP would provide wastewater treatment for the proposed project. As discussed in item (b) above, LRDP Mitigation 4.15-3, which is relevant to the proposed project, would ensure the campus practice of reviewing projects to determine if there is adequate capacity to provide sanitary sewer service, and to upgrade the system as necessary. The University has conducted this review and determined that the project would result in a small increase in wastewater flow from both project sites. This increase can be adequately handled by the existing sewage collection system and by the WWTP. The depth of the existing sewer system at the Service Unit Park is adequate to serve the project without an additional pump station. However, an additional pump station may be included in the project design in order to accommodate future development. Therefore, this impact would be less than significant.

As discussed in Section 4.15 in the 2003 LRDP EIR, any expansion to the sanitary sewer system would result in less-than-significant environmental impacts because system lines would be located along existing rights-of-way where sensitive biological and cultural resources are not present and/or where the potential for adverse effects on these resources is low. Furthermore, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts.

- f) The waste disposal needs of the proposed project would be served by the campus landfill. As identified in the 2003 LRDP EIR, given the demands anticipated under the 2003 LRDP (including the proposed project), the life expectancy of the campus landfill is to 2023. In addition, the University's R4 Program, which coordinates campus-wide recycling collection efforts between the Solid Waste Division, Custodial Services, Grounds Division, and other campus entities, would be implemented for the proposed project. Therefore, the campus landfill would have adequate capacity to serve the proposed project and the impact would be less than significant.
- g) As discussed in Section 7.8, the project would generate small amounts of chemical hazardous waste. These would be picked up by EH&S and stored temporarily at the campus Environmental Services Facility pending shipment offsite for recycling or disposal. The proposed project would comply with all applicable federal, state, and local statutes and regulations related to solid waste. Therefore, no impact would occur.
- h) The electrical service for the proposed Physical Sciences Expansion building would be connected to existing electrical manhole No. MH19-12SW at the intersection of La Rue

Road and California Avenue on the southwest side of the proposed structure. Service would be obtained from the campus 12 kV distribution systems. The transformers would be arranged for loop feed. A standby generator would be installed to provide emergency power. Natural gas service would connect to the existing 4-inch pipeline beneath California Avenue. On California Avenue, stubs for a new chilled water supply and return main would be provided by another project to serve the proposed Physical Sciences Expansion project, the existing Academic Surge Building and future development north of the proposed building. Currently, there are existing chilled water utilities serving the Academic Surge Building west of the proposed building, across California Avenue. The new utilities/piping would be connected to the chilled water running from the proposed Robert Mondavi Institute, which is to be installed as part of another project. The UC Davis Robert Mondavi Institute project would provide a point of connection at the intersection of California Avenue and La Rue Road. From this point, newly installed 24-inch supply and return lines would extend north-south beneath California Avenue and would connect to the proposed project's 8-inch chilled water supply and return lines on the west side of the new building.

At the Service Unit Park site, the existing campus electrical system has adequate capacity to serve the building. Preliminary building demand estimates indicate that the buildings would have a load requiring three transformers. The transformers may be oil-filled and pad mounted if a suitable location is identified. Otherwise, the transformers would be integrated into the main electrical room in the form of a secondary unit substation with a cast coil transformer. A new electrical point of connection to the campus power system would be made at the existing pole located on Hopkins Road on the southeast side of the site. Underground electrical distribution would be extended to the transformer that would serve the buildings at the southeast portion of the site as well as a temporary feed to Phase 1 buildings located in the northern portion of the site. The temporary feeds would be removed once Phase 2 work is completed and these buildings would be fed from the northeastern electrical service transformer. A second point of connection to the campus power system would be made at the existing pole (P-47) located on Hopkins Road on the northeast side of the site during the construction of Phase 2. Underground electrical distribution would be extended to transformers for the buildings at the northeast and west portions of the property.

There is no natural gas connection currently at the Service Unit Park site. A natural gas connection would require an upgrade by PG&E, which would not be feasible with this project. Therefore, on-grade propane tanks would be installed. A meter, earthquake valve, and pressure reducing station would be provided where the service enters the building. Propane would be piped to equipment and domestic water heaters. Each new building would be provided with a gas meter. Chilled water and steam is not available at this site and is not a part of this project.

As discussed in Section 4.15 in the 2003 LRDP EIR, expansion to utility systems would result in less-than-significant environmental impacts because system lines would be located along existing rights-of-way where sensitive biological and cultural resources are not present and/or where the potential for adverse effects on these resources is low. Furthermore, the project would implement LRDP mitigations to reduce the potential for significant impacts to these resources.

The 2003 LRDP EIR identified that growth under the 2003 LRDP would require the expansion of the campus chilled water system and campus steam system (LRDP Impacts

4.15-3, 4.15-4, and 4.15-5). Chilled water/steam utility extensions required by the proposed Physical Sciences Expansion site would be constructed within previously disturbed areas. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. Therefore, environmental effects associated with utility extensions would be less than significant.

LRDP Mitigations 4.15-6(a,b), 4.15-7(a), and 4.15-8, which are relevant to the proposed project, would further reduce the significance of this impact by requiring the campus to continue to incorporate energy efficient design elements, meet or exceed Title 24 energy conservation requirements, and review the project to determine if the relevant utility supply is adequate at the point of connection and if any upgrades to the utility system are required. The UC Board of Regents has adopted a system-wide policy for the design of "Green Buildings" and a standard for the use of "Clean Energy." In an effort to conform with UC Policy, the building designs would aspire to "achieve 80 percent or less energy use than mandated by Title 24, and enrollment of this proposed project in the PG&E Energy Savings by Design program." Energy efficient elements that would be incorporated into the proposed project include:

- Utilization of variable frequency motor controllers
- Carbon dioxide sensors to control outside air ventilation rates
- Economizer provisions for air handling units, where applicable
- Direct digital controls for the HVAC system
- High efficiency light fixtures, lamps and ballasts
- Occupancy sensors and time clocks
- Occupancy sensors interfaced with HVAC control system to reduce lab or room ventilation rates during unoccupied times
- Premium efficiency motors
- High efficiency transformers
- Low flow plumbing fixtures
- Optimized system efficiencies
- Utilizing steam condensate for pre-heating domestic hot water, where available
- Operable windows in office areas interfaced with the HVAC system
- Low HVAC (ductwork and coils) system velocities
- Task lighting
- Fume hoods with improved energy efficiency
- Run-around loop heat exchange system

- i) Both the Physical Sciences Expansion site and the Service Unit Park site would require expansion of the telecommunications system. Existing services at the Physical Sciences Expansion site are at capacity; therefore, the two existing telecommunication vaults to the north of the proposed facility would be connected by new telecom lines consisting of four 4-inch conduits. This new connection would also provide increased capacity for future projects. The point of connection for a new service provided by the project would be at the existing telecom vault northeast of the site. A new telecommunications system would be installed at the Service Unit Park and would be connected through conduits to the campus distribution system at the manhole on either the southeast or northeast side of the site across Hopkins Road. Three 4-inch conduits and four 2-inch conduits would be provided from the main telecommunications room to the nearest manhole.

The 2003 LRDP EIR identified that growth under the 2003 LRDP would require the expansion of the campus telecommunications system, which would not result in significant environmental impacts (LRDP Impact 4.15-9). Telecommunication extensions required by the proposed project would be constructed within a previously disturbed area. In addition, the campus would survey the site before construction and perform monitoring during construction (in compliance with 2003 LRDP Mitigations 4.4-1 and 4.5-1) to avoid inadvertent biological and cultural resource impacts. Therefore, environmental effects associated with utility extensions would be less than significant. LRDP Mitigation 4.15-9, which is relevant to the proposed project, would further reduce the significance of this impact by requiring the campus to determine if the telecommunication capacity is adequate at the point of connection and if any upgrades to the system are required. Utility evaluations for telecommunications were conducted for both sites as part of the DPPs, and the proposed connections would be adequate to serve both facilities.

Summary

Mitigation measures 4.15-1 (a, b), 4.15-2 (a, b), 4.15-3, 4.15-4, 4.15-6 (a, b), 4.15-7 (a, b), 4.15-8, 4.15-9 and 4.15-10 from the 2003 LRDP EIR are relevant to the proposed project to reduce the significance of utility and service system impacts to the extent feasible. The proposed project would not exceed the levels of significance of utility and service system impacts previously addressed in the 2003 LRDP EIR, nor would it introduce any new significant impacts that were not previously addressed.

7.17 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant with Mitigation	Impact for which 2003 LRDP EIR is Sufficient	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 Overriding Considerations adopted by The Regents in connection with its approval of the 2003 LRDP. No conditions have changed and no new information is available since certification of the 2003 LRDP EIR that would alter this previous analysis.

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

8 FISH & GAME DETERMINATION

Based on the information presented in this Tiered Initial Study, the project has a potential to adversely affect wildlife or the habitat upon which wildlife depend. Therefore, a filing fee will be paid.

Certificate of Fee Exemption

Pay Fee

9 REFERENCES

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10 AGENCIES & PERSONS CONSULTED

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APPENDIX A
MITIGATED NEGATIVE DECLARATION

MITIGATED NEGATIVE DECLARATION

Lead Agency: University of California

Project Proponent: University of California, Davis

Project Location: Yolo County, UC Davis, Physical Sciences Expansion east of California Avenue, Service Unit Park west of Hopkins Road.

Project Description: The project proposes to relocate existing operations and maintenance facilities from a location in the Central Campus to a new Service Unit Park in the West Campus. The Central Campus location would then become the site for a new Physical Sciences Expansion project. The Physical Sciences Expansion project includes the demolition of a portion of the operations and maintenance complex and construction of a new, stand-alone facility. The Physical Sciences Expansion involves construction of a three-story, approximately 88,300 gross square-foot (gsf) (51,250 assignable square feet [asf]) building on a 2.6-acre site on California Avenue that would house the Department of Geology, and teaching laboratory and support spaces for the Department of Chemistry and Department of Physics in the area currently occupied by the operations and maintenance facility. The site is bordered by the Physics/Geology building to the north; Facilities Services area and Domestic Water Tower 1 to the east, the Arboretum Waterway to the south, and Academic Surge to the west.

UC Davis is proposing the Physical Sciences Expansion project to meet space requirements of the Departments of Geology, Chemistry and Physics. All three departments are in need of additional space, and the new facility must be located in proximity to existing department facilities. The existing Operation and Maintenance Complex in the Central Campus provides a suitable site, but to accommodate the new building, the existing facilities must be relocated. The proposed 24-acre Service Unit Park site in the West Campus has been determined to be an appropriate location for the facilities that must be moved to make room for the Physical Sciences Expansion. The Service Unit Park facilities would create 326,000 gsf of new support facilities at the West Campus site on Hopkins Road. The site is bordered by the University Airport to the east, the Contained Research Facility to the north, and the Avian Sciences Facility to the south.

Mitigation Measure: Project-specific mitigation is required to address potential traffic congestion at the intersection of Hutchison Drive and LaRue Road. Project-specific mitigation measure MM-1 would entail planning and implementing parking lot conversions along Hutchison Drive that would have the effect of reducing PM peak hour vehicle trips at the Hutchison/La Rue intersection.

- Reference:** This Mitigated 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, and the 2003 LRDP's Findings and Statement of Overriding Considerations.
- Determination:** In accordance with CEQA, a 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 Tiered Initial Study the campus found that the proposed project proposed project could have a significant effect on the environment that has not been previously addressed in the 2003 LRDP EIR, and a new project-specific mitigation measure, in addition to those previously identified in the 2003 LRDP EIR, is required to reduce this effect to such a point that clearly no significant impact would occur.
- 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 January 14 to February 14, 2005. Comments received during the review period and responses to these comments are presented in Appendix C of this final Tiered Initial Study.

APPENDIX B
PROPOSED MITIGATION MONITORING PLAN

PROPOSED MITIGATION MONITORING PROGRAM

CEQA requires that the Lead Agency establish a program to report on and monitor measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. This Mitigation Monitoring Program (MMP) is designed to ensure that the project-specific mitigation measures identified in this Tiered Initial Study are implemented. Applicable mitigation measures from the 2003 LRDP EIR will be implemented as part of the proposed project pursuant to the previous MMP adopted by the Regents as part of the 2003 LRDP on November 20, 2003.

The MMP for the proposed project, as outlined in the following table, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for the project-specific mitigation measure identified in the Tiered Initial Study. All monitoring actions, once completed, will be reported in writing to or by the UC Davis Office of Resource Management and Planning, which will maintain mitigation monitoring records for the proposed project. The MMP will be considered by the campus in conjunction with project review and will be included as a condition of project approval.

The components of the MMP include:

- **Project Specific Mitigation Measure:** The project-specific mitigation measure provides mitigation for the proposed project beyond the measures that will be implemented pursuant to the 2003 LRDP EIR.
- **Monitoring and Reporting Procedure:** Identifies the action(s) that must be completed for the mitigation measure to be implemented.
- **Mitigation Timing:** Identifies the timing for implementation of each action associated with the mitigation measure in order to effectively accomplish the intended outcome.
- **Monitoring Responsibilities:** Identifies the UC Davis entity responsible for undertaking the required action and monitoring the mitigation measure.

Mitigation Monitoring Program

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
<p>Measure MM-1. UC Davis shall proceed with planning and implementing parking lot conversions along Hutchison Drive that will have the effect of reducing PM peak hour vehicle trips at the Hutchison/La Rue intersection. UC Davis shall implement parking lot operational changes at parking lots along Hutchison Drive if the expected parking lot conversions do not occur by 2016. Operational changes shall include conversion of spaces to long term use (rather than metered use), reservation of parking spaces for University vehicles or other non-peak hour uses, or encouraging employees using the University during the peak hour to avoid the Hutchison/La Rue intersection and utilize gate card access at Bioletti Way.</p>	<p>Traffic intersection monitoring results from the continued implementation of LRDP Mitigation Measure 4.14-1(b) will be used to determine the need to accelerate planned parking lot conversions or to implement parking lot operational changes. Results will be reviewed by the Office of Resource Management and Planning and if LOS is at Hutchison/LaRue intersection is worse than D, parking lot changes would be implemented to reduce congestion.</p>	<p>Monitoring shall be conducted at the Hutchison/LaRue intersection at least once every three years.</p>	<p>UC Davis Office of Resource Management and Planning</p>

**APPENDIX C
RESPONSES TO COMMENTS**

COMMENTS AND RESPONSES TO COMMENTS

The Draft Tiered Initial Study for the Physical Sciences Expansion and Service Unit Park was circulated for public review from January 14, 2004 to February 14, 2004. Comments were received during this period from the following agencies/individuals:

- Comment 1: Governor's Office of Planning and Research
State Clearinghouse
Terry Roberts, Director
1400 Tenth Street
Sacramento, CA 95812
- Comment 2: Letter from California Department of Health Services
1616 Capitol Avenue, MS 7418
P.O. Box 997413
Sacramento, CA 95899-7413
- Comment 3: Letter from State of California, Department of Transportation (Caltrans)
District 3, Sacramento Office – MS 15
2389 Gateway Oaks
P.O. Box 942874
Sacramento, CA 94274-0001

These comments and responses to comments are provided on the following pages.

Insert Letter 1 (OPR) page 1 (Note we do not have a copy of this letter yet)

Insert Letter 1 (OPR) page 2

Comment 1: Governor's Office of Planning and Research, State Clearinghouse

Comment Summary: The comment indicates that the campus has met the requirements for review of the Draft Tiered Initial Study.

UC Davis appreciates the assistance of the Office of Planning and Research in circulating the Draft Tiered Initial Study to state agencies for review.

Insert Letter 2 (DHS) – page 1

Insert Letter 2 (DHS) – page 2

Comment 2: California Department of Health Services

Comment Summary: The comment points out that if construction of a new domestic water supply well is required in the future, the Department of Health Services would require an amended water supply permit.

When a new well is needed, UC Davis will apply for all necessary permits and complete all appropriate permit requirements. The hydrological aspects of a new well were addressed in the 2003 LRDP EIR. Once the details of specific well location are known, the UC Davis would complete the appropriate level of additional environmental review.

Insert Letter 3 (Caltrans) – page 2

Insert Letter 3 (Caltrans) – page 3

Comment 3: State of California Department of Transportation (Caltrans)

Comment Summary: The comment states that UC Davis should pay its fair share of mitigation fees to Caltrans toward improvements to the SR 113/Hutchison intersection and that funding should help finance needed ramp, mainline, and intersection improvements, and improve the weave on SR 113. .

The comment letter has several bullet points, each of which is addressed below:

- UC Davis agrees that it is appropriate to pay fair share mitigation fees. Cumulative impacts to off-campus roadways are discussed on page 4.14-65 of the 2003 LRDP EIR. LRDP Mitigation Measure 4.14-2 (c), which addresses off-campus facilities, is referenced on page 144 of the Tiered Initial Study, and states that “UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall contribute its fair share (emphasis added) towards roadway improvements at affected study intersections.” The weave section on northbound 113 and impacts on the 113 ramps on Hutchison Drive are discussed on page 4.14-69 of the 2003 LRDP EIR. LRDP Mitigation Measure 4.14-1(c), which addresses on-campus facilities, is also referenced on page 144 of the Tiered Initial Study, and states that “UC Davis shall review individual projects proposed under the 2003 LRDP as they advance through the environmental clearance phase of development to determine if intersection or roadway improvements are needed with the additional traffic generated by the proposed project. If intersection operations are found to degrade to unacceptable levels, UC Davis shall construct physical improvements such as adding traffic signals or roundabouts at affected study intersections.” Because UC Davis views the 113 ramps as on-campus facilities the University has agreed to construct the needed improvements when traffic levels warrant this improvement. The traffic study conducted for the Physical Sciences Expansion and Service Unit Park determined that the contribution of this project to cumulative traffic impacts did not result in any off-campus traffic impacts requiring improvements at this time. On-campus impacts were limited to the Hutchison/La Rue intersection, and project-specific mitigation for this impact is included in the Initial Study. UC Davis looks forward to meeting with Caltrans to discuss the fair share funding mechanism and timing for implementation of mitigation measures.
- UC Davis agrees that cumulative traffic effects of the 2003 LRDP will be considerable. However, as noted in the response to the first bullet point, the increment of traffic represented by this project is not expected to significantly impact freeway and ramp intersection operations.
- UC Davis agrees that the weave section of State Road 113 should be monitored. Monitoring of the weave section will continue to be implemented as specified in LRDP Mitigation Measure 4.14-2(b), which specifies that “UC Davis shall continue to monitor AM and PM peak hour traffic operations at critical intersections and roadways in the campus vicinity at least every three years to identify locations operating below UC Davis, City of Davis, Yolo County, Solano County, or Caltrans LOS thresholds and to identify improvements to restore operations to an acceptable level.” Results of monitoring will be reviewed to determine when improvements are needed.

- UC Davis appreciates Caltrans' recognition of its support for alternate modes of transportation.

The mitigation monitoring plan requested by Caltrans is included as Appendix B of this Initial Study. UC Davis looks forward to meeting with Caltrans.