

UC DAVIS

MATHEMATICAL SCIENCES BUILDING

Draft Tiered Initial Study

Prepared By:

OFFICE OF RESOURCE MANAGEMENT AND PLANNING

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July 2002

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ENVIRONMENTAL CHECKLIST FORM

UNIVERSITY OF CALIFORNIA

July 15, 2002

CAMPUS: Davis

I. PROJECT INFORMATION

1. Project title: Mathematical Sciences Building
2. Project location: University of California, Davis
Yolo County
3. Lead agency name and address: Office of Resource Management and Planning
University of California
One Shields Avenue
376 Mrak Hall
Davis, CA 95616
4. Project sponsor's name and address: See Item 3
5. Contact person and phone number: A. Sidney England
Environmental Planner
(530) 752-2432
6. Location of the administrative record for this project: See Item 3.
7. Identification of previous EIRs relied upon for tiering purposes (including all applicable LRDP and project EIRs) and address where a copy is available for inspection:

This environmental analysis is tiered from the 1994 Long Range Development Plan (LRDP) Environmental Impact Report (EIR) (State Clearinghouse No. 94022005), as updated and revised by a number of subsequent documents (listed below). These documents are available for review during normal operating hours at the UC Davis Office of Resource Management and Planning, 376 Mrak Hall on the UC Davis campus; at Reserves in Shields Library on the UC Davis campus; at the Yolo County Public Library, 315 E. 14th Street, Davis; at the Vacaville Public Library, 1020 Ulatis Drive, Vacaville; and online at <http://www.ormp.ucdavis.edu/environreview/> (technical appendices are not available online). Hereafter, reference to the 1994 LRDP EIR includes the 1994 LRDP EIR as revised by the documents listed below.

Revisions to the 1994 LRDP EIR identified in subsequent environmental review documents are summarized in the list below. Appendix A of this Tiered Initial Study includes further information about the changes to the 1994 LRDP and LRDP EIR since original publication.

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- Wastewater Treatment Plant (WWTP) Replacement Project EIR (State Clearinghouse Nos. 95123027 and 96072024):
 - Updated 1994 LRDP EIR analysis to reflect changes to land use designations presented in the 1994 LRDP (Section 4.6 of the WWTP Replacement Project Draft EIR).
 - Identified the loss of an additional 20 acres of prime agricultural land and ruderal/annual grassland habitat over the amount identified in the 1994 LRDP EIR analysis and increased the magnitude of land use and biological resource impacts associated with this loss (Sections 4.4 and 4.6 of the WWTP Replacement Project Draft EIR, and Appendix G of the Final EIR).
 - Reevaluated cumulative 1994 LRDP EIR Hydrology and Water Quality, Hazardous Materials and Public Safety, and Air Quality impacts (Sections 4.1, 4.3, and 4.3 of the Draft EIR).
- 1997-98 Major Capital Improvement Projects Supplemental EIR (SEIR) (State Clearinghouse No. 97122016):
 - Updated 1994 LRDP EIR analysis to reflect changes to land use designations presented in the 1994 LRDP (Sections 5.3, 6.3, and 7.3 of the Draft SEIR).
 - Identified the loss of an additional 20 acres of prime agricultural land and 31 acres of ruderal/annual grassland habitat over the amount identified in the 1994 LRDP EIR. To mitigate this loss, identified measure to redesignate 20 acres of prime farmland and ruderal/annual grassland habitat at the Russell Ranch from land designated as 'Academic and Administrative Low Density' to 'Teaching and Research Fields' (Sections 5.3, 5.5, 6.3, 6.5, 7.3, and 7.5 of the Draft SEIR).
 - Identified the loss of 11 acres of ruderal/annual grassland habitat over the amount identified in the 1994 LRDP EIR analysis and increased the magnitude of biological resource impacts associated with this loss (Appendix A of the Final SEIR).
 - Included project-specific mitigation measure to reduce the magnitude, but not the level of significance, of the cumulative impact on burrowing owl nesting habitat (Section 2 of the Draft SEIR).
 - Included updated transportation and circulation analysis to assess a new traffic survey and the decision by the City of Davis not to expand the Richards Boulevard undercrossing from two to four lanes. Revised 1994 LRDP EIR transportation Mitigation Measure 4.3-1 (b) to account for the new traffic information (Section 8 of the Draft SEIR).
 - Reevaluated cumulative air quality and noise impacts (Section 8 of the Draft SEIR).

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- Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 98092016):
 - Updated 1994 LRDP EIR analysis to reflect changes to land use designations presented in the 1994 LRDP (page 29 of the Initial Study).
 - Identified the loss of 8.5 acres of prime farmland and ruderal/annual grassland habitat over the amount assessed in the 1994 LRDP EIR. To mitigate this loss, identified measure to redesignate 8.5 acres of prime farmland and ruderal/annual grassland habitat designated as 'Support' to 'Teaching and Research Fields' (pages 29-30 and 60 of the Initial Study).
- USDA Western Human Nutrition Research Complex Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 99092060):
 - Updated the 1994 LRDP EIR analysis to reflect changes to land use designations presented in the 1994 LRDP (pages 45-46 of the Initial Study).
 - Revised a project-specific mitigation measure presented in the 1997-98 Major Capital Improvement Projects SEIR that reduced the magnitude, but not the level of significance, of the cumulative impact on burrowing owl nesting habitat (page 65 of the Initial Study).
- Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR (State Clearinghouse No. 2000022057):
 - Further updated the 1994 LRDP EIR cumulative transportation and circulation impact analysis to account for more accurate estimates of campus population growth in the Health Sciences District. The updated analysis identified that the intersection of Hutchison Drive and Health Sciences Drive would exceed level of service standards. Included a mitigation measure to reduce the impact at this intersection to a less-than-significant level (Section 3 of the Final EIR).
- Segundo Housing Improvement Projects Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 2001092063):
 - Updated the 1994 LRDP EIR analysis to reflect changes to the land use designations presented in the 1994 LRDP (pages 33 to 35 of the Initial Study).
- Conference Center, Hotel, and Graduate School of Management Building Focused Tiered EIR (State Clearinghouse No. 2001082067):
 - Updated the 1994 LRDP EIR analysis to reflect changes to the land use designations presented in the 1994 LRDP (Appendix A of the Final EIR).

II. ENVIRONMENTAL REVIEW AND APPROVAL

INTRODUCTION

This environmental analysis is a Tiered Initial Study for the proposed Mathematical Sciences Building (proposed project). The environmental analysis for the proposed project is tiered from the UC Davis 1994 LRDP EIR in accordance with Sections 15152 and 15168 of the California Environmental Quality Act (CEQA) Guidelines and Public Resources Code Section 21094. The 1994 LRDP EIR is a Program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.). The 1994 LRDP EIR analyzed full implementation of uses and physical development proposed under the 1994 LRDP through the year 2005-06 and identified measures to mitigate the significant adverse project and cumulative impacts associated with that growth.

The CEQA concept of "tiering" refers to the coverage of general environmental matters in broad program-level EIRs, with subsequent focused environmental documents for individual projects that implement the program. This environmental document incorporates by reference the discussions in the 1994 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 task of preparing environmental documents on later parts of the program by incorporating by reference factors 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 1994 LRDP EIR for the following:

- a discussion of general background and setting information for environmental topic areas;
- overall growth-related issues through 2005-06;
- issues that were evaluated in sufficient detail in the 1994 LRDP EIR for which there is no significant new information or change in circumstances that would require further analysis; and
- cumulative impacts assessment.

The purpose of this Tiered Initial Study is to evaluate the potential environmental impacts of the project with respect to the 1994 LRDP EIR to determine what level of additional environmental review, if any, is appropriate. Based on the analysis contained in this Tiered Initial Study, one of the following determinations will be made:

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- the project is exempt from CEQA;
- the project incrementally contributes to, but does not exceed, environmental impacts previously identified in the 1994 LRDP EIR, no additional mitigation measures are required, and preparation of Findings consistent with this determination is appropriate;
- the project would result in new impacts that were not previously identified in the 1994 LRDP EIR, but there is no substantial evidence that such new impacts may have a significant effect on the environment and preparation of a Negative Declaration is appropriate;
- the project would result in new potentially significant impacts that were not previously identified in the 1994 LRDP EIR, but proposed project-specific mitigation measures would reduce such impacts to a point where clearly no significant effects would occur and there is no substantial evidence that the project as mitigated may have a significant effect on the environment, and preparation of a Mitigated Negative Declaration is appropriate; or
- the project would result in new significant environmental impacts not previously identified in the LRDP EIR, and preparation of a tiered EIR is appropriate.

Mitigation measures identified in the 1994 LRDP EIR and adopted by the University of California (the University) that apply to the proposed project will be required to be implemented as part of the project.

SCOPE OF THE FOCUSED TIERED EIR

For the resource areas listed below, the analysis in this Tiered Initial Study indicates that the proposed project would result in the following categories of impacts: no impact; less-than-significant impact; less-than-significant impact with the incorporation of 1994 LRDP EIR mitigation measures; or contribute to a significant unavoidable impact that was adequately analyzed in the 1994 LRDP EIR for which no new mitigation measures are available and no new analysis is proposed.

- Land Use and Planning
- Agricultural Resources
- Population and Housing
- Transportation and Circulation
- Noise
- Air Quality
- Hazards and Hazardous Materials
- Biological Resources
- Geology and Soils
- Mineral Resources
- Public Services
- Recreation
- Utilities Service Systems

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A Focused Tiered EIR will be prepared to further evaluate the significance of cultural resource and aesthetics impacts and to develop project-specific mitigation measures, if necessary. Specifically, the Focused Tiered EIR will evaluate the following impacts associated with the proposed project:

Cultural Resources - The proposed project would require relocation or removal of the Hog Barn building, which is currently located on the proposed Mathematical Sciences Building site. This building is considered a historical resource, and demolition or relocation of the building could result in a substantial adverse change in the significance of this resource. The Focused Tiered EIR will evaluate this impact.

Aesthetics - The proposed project would require relocation or removal of the Hog Barn building, which is currently located on the proposed Mathematical Sciences Building site. This building is considered a valued element of the campus' visual landscape, and demolition or relocation of the building could substantially affect this resource. The Focused Tiered EIR will evaluate this impact.

The Focused Tiered EIR will also evaluate alternatives to the proposed project. The range of alternatives will include a No Project Alternative, and may include various alternate sites for the Mathematical Sciences Building and/or relocation and reuse strategies for the Hog Barn building currently located on the proposed project site. The scope of the Focused Tiered EIR may be revised based on comments received on this Tiered Initial Study.

PUBLIC AND AGENCY REVIEW

This Tiered Initial Study will be circulated for public and agency review from July 15, 2002 to August 14, 2002. Copies of the Tiered Initial Study are available during normal operating hours at the UC Davis Office of Resource Management and Planning, 376 Mrak Hall on the UC Davis campus; at Reserves in Shields Library on the UC Davis campus; at the Yolo County Public Library, 315 E. 14th Street, Davis; at the Vacaville Public Library, 1020 Ulatis Drive, Vacaville; and online at <http://www.ormp.ucdavis.edu/environreview/>. Copies of the 1994 LRDP; 1994 LRDP EIR; WWTP Replacement Project EIR; 1997-98 Major Capital Improvement Projects SEIR; Center for the Arts Tiered Initial Study and Mitigated Negative Declaration; USDA Western Human Nutrition Research Center Tiered Initial Study and Mitigated Negative Declaration; Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facility Tiered EIR; Segundo Housing Improvement Projects Tiered Initial Study and Mitigated Negative Declaration; and the Conference Center, Hotel, and Graduate School of Management Building Focused Tiered EIR are also available at these locations.

Comments on this Tiered Initial Study must be received by 5:00 p.m. on August 14, 2002, and they may be e-mailed to environreview@ucdavis.edu or sent to:

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

ORGANIZATION OF THE TIERED INITIAL STUDY

This Tiered Initial Study is organized into the following sections.

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

Section II - Environmental Review and Approval: includes a summary of the Tiered Initial Study's relationship to the 1994 LRDP EIR, the scope of the Tiered Initial Study, public and agency review information, and an overview of the document's organization.

Section III - Project Description: includes the description of the proposed project.

Section IV - Consistency with the 1994 LRDP and 1994 LRDP EIR: describes the consistency of the proposed project with the 1994 LRDP and 1994 LRDP EIR.

Section V - Environmental Factors Potentially Affected: identifies which environmental factors were determined to be a "Potentially Significant Impact" as indicated by the Tiered Environmental Checklist.

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

Section VII - 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 1994 LRDP EIR. The checklist identifies potential project effects as follows: (1) new potentially significant project impacts that were not adequately analyzed in the 1994 LRDP EIR, or previously identified significant impacts for which new feasible mitigation measures are available; (2) new less-than-significant impacts with mitigation incorporated; (3) environmental impacts of the project that were adequately analyzed and mitigated in the 1994 LRDP EIR; (4) less-than-significant impacts; and (5) effects that would not result in any adverse environmental impact.

This section also contains an explanation of all checklist answers and recommended mitigation measures.

Section VIII - References: lists references used in the preparation of this report.

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

Section X - Report Preparers: lists the names of individuals involved in the preparation of this report.

Appendix A - Amendments to the 1994 LRDP and Revisions to the 1994 LRDP EIR: summarizes amendments to the 1994 LRDP and revisions to the 1994 LRDP EIR through March 2002.

Appendix B - Cumulative Impacts Analysis - Focus on Potential Environmental Effects Associated with Projected Student Enrollment Increases through 2014-15: serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15.

III. PROJECT DESCRIPTION

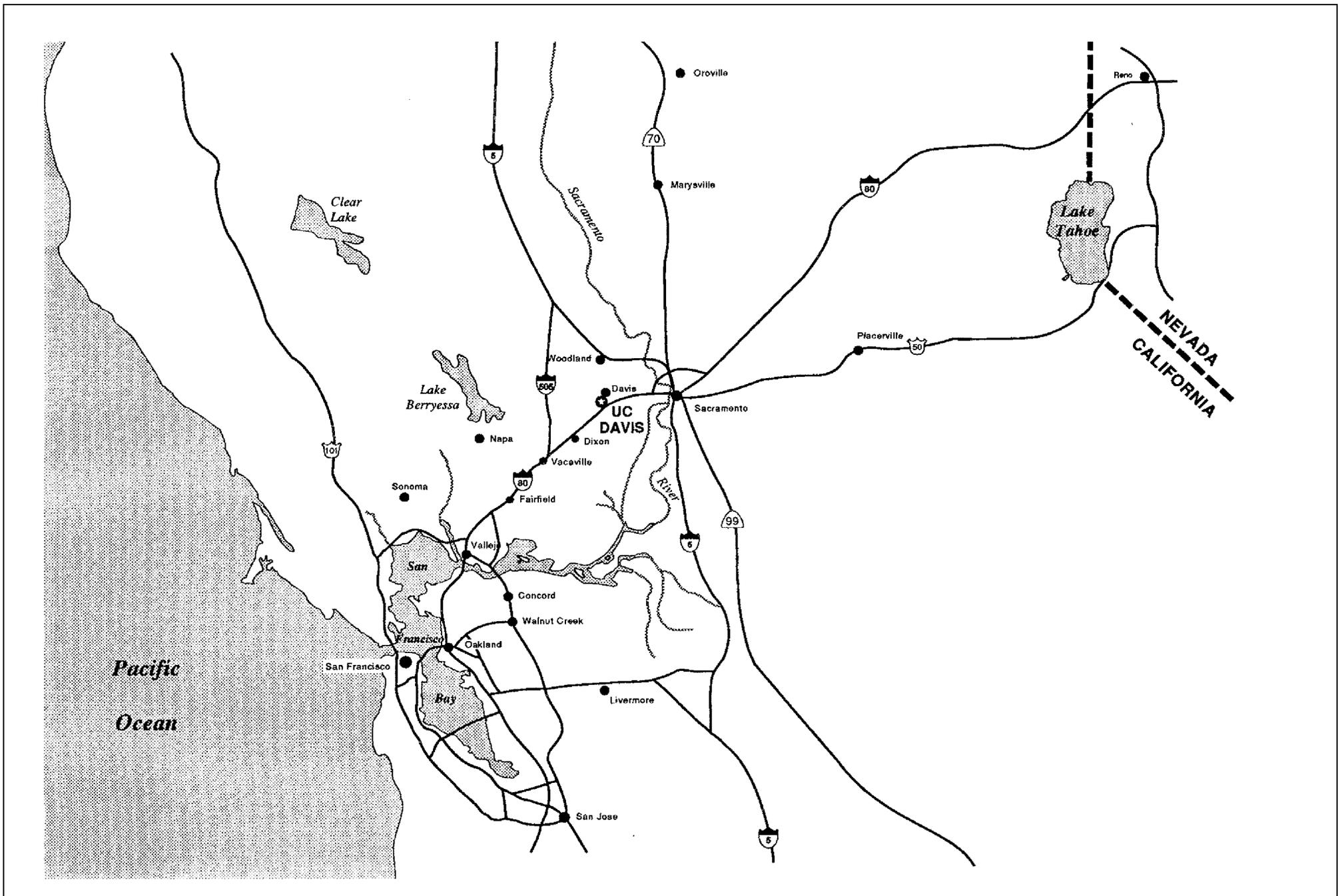
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The 5,300 acre UC Davis campus (the campus) is located in Yolo and Solano Counties approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis (see Figure 1). The campus, in general, is comprised of four campus units: the central campus, the south campus, the west campus, and Russell Ranch (see Figure 3-2, Regional and Local Setting, on page 3-5 of the 1994 LRDP Draft EIR). The "main campus" refers to the central, south, and west campus units, excluding Russell Ranch. Most of the 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 1,590 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 acquired by the campus in 1990 and is intended for use in large-scale agricultural and environmental research and the study of sustainable agricultural practices. 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 on the west and northwest. In addition, UC Davis owns several buildings in Research Park, located in the City of Davis south of I-80.

PROJECT DESCRIPTION

The proposed project includes the construction and operation of a four-story, approximately 65,000 gross square foot (gsf) (37,460 assignable square foot [asf]) Mathematical Sciences Building. The new building would be located in the core campus, south of the Crocker Nuclear Laboratory, west of California Avenue, north of the Academic Surge building, and east of Engineering Unit 3 (see Figure 2). The Hog Barn building (a structure that meets the criteria for listing on the California Register of Historic Places) is currently located on the proposed project site. To accommodate the proposed project, the campus is considering three potential plans for the Hog Barn building, including: demolition, relocation to a site in the central campus located southwest of the Silo complex, and relocation to a site in the west campus.

The proposed Mathematical Sciences Building would provide space for the Departments of Mathematics and Statistics, a new campus initiative in Computational Sciences and Engineering, and the California State Summer School for Mathematics and Science (COSMOS). The building would include faculty and staff offices, office support space (including storage areas), conference and seminar space, and computer laboratories. The project would accommodate growth projected for the Departments of Mathematics and Statistics and would allow for the development of the Computational Sciences and Engineering initiative. The proposed building would also release space in Kerr Hall, providing expansion space for other programs in the College of Letters and Science.

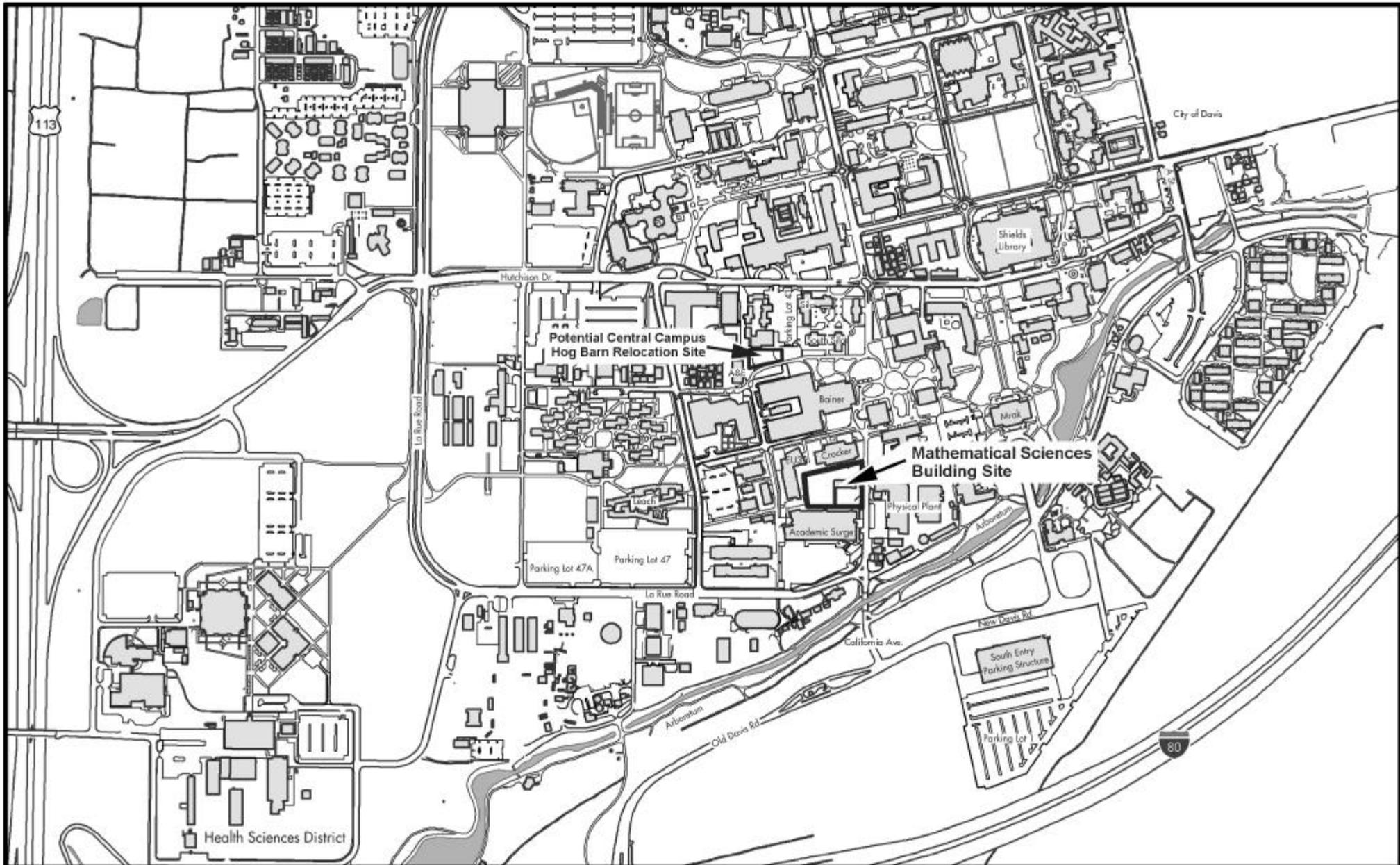


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Figure 1. Regional Location




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Figure 2. Project Location

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Project Sites

The proposed Mathematical Sciences Building would be constructed on an approximately two-acre site located in the core campus, located south of the Crocker Nuclear Laboratory, west of California Avenue, north of Academic Surge, and east of Engineering Unit 3 (see Figure 2). The proposed Mathematical Sciences Building site is designated in the 1994 LRDP for 'Academic and Administrative High Density' uses, a designation that is consistent with the proposed project. The site is surrounded by developed land.

The vacant Hog Barn building, which has historically been used for hog raising at UC Davis, is currently located on the site proposed for the Mathematical Sciences Building. Animal husbandry activities using the Hog Barn were relocated in the 1990's as part of a separate project. The Hog Barn building was originally constructed in 1913 and is considered to meet criteria for listing on the California Register of Historic Places (CRHP) because it maintains a high degree of integrity, it played an important role in the founding years of the farm that became UC Davis, and it has been identified as a good example of early twentieth century hog barn design in California (JRP 1999).

The campus is evaluating relocation of the Hog Barn building to an approximately 0.1 acre site in the central campus located southwest of the Silo complex, north of Bainer Hall, east of the Architects and Engineers barn, and south of Temporary Building 200 (see Figure 2). This site is designated in the 1994 LRDP for 'Academic and Administrative High Density' uses, a designation consistent with the proposed use.

The campus is also evaluating relocation of the Hog Barn building to an approximately 0.1 acre currently unnamed site in the west campus. This site would be designated for either 'Teaching and Research Fields' or 'Academic and Administrative Low Density' uses, designations consistent with the proposed use.

Project Background and Need

The UC Davis campus anticipates that current total on-campus student enrollment will increase by approximately 10 percent through 2005-06. In addition, the campus anticipates that the demand for education in mathematics and statistics will also increase due to an expected rise in the need for mathematical and statistical proficiency for college graduates seeking employment in a variety of fields, including finance, biology, agriculture, environmental studies, pharmaceuticals, medicine, and communication. The proposed Mathematical Sciences Building would begin to address these needs by providing near-term expansion space for the Mathematics and Statistics departments and by establishing new space for the new Computational Sciences and Engineering program.

To meet the increased demand for mathematics education, the Department of Mathematics plans to expand its undergraduate and masters programs to include majors such as Applied Mathematics, Mathematics of Computation, and Bioinformatics/Biomathematics. In addition, the Department of Mathematics plans to develop lower division curriculum to include additional discussion sections and computer laboratory components.

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The Department of Statistics currently occupies only approximately 80 percent of the space recommended for similar programs by the California Postsecondary Education Commission. In addition, the Department of Statistics requires additional space to meet the increasing applicability of statistics across disciplines. For instance, statistics is increasingly applied to agriculture, social science, engineering, and medicine. The Statistical Laboratory, a consulting service component of the Department of Statistics, provides statistical consulting and associated computing and programming support to undergraduate and graduate students, faculty, members of organized research units, administrative and service unit personnel, and non-University agencies and individuals. The demand for such service is anticipated to increase in upcoming years.

As part of the academic planning process, campus faculty recently developed a new Computational Sciences and Engineering initiative to meet the demands of enrollment growth and to enhance and enrich existing programs. Computational Sciences and Engineering is concerned with the development and implementation of computational models as tools to understand complex physical, environmental, and biological processes, or as tools to represent abstract processes, such as those encountered in mathematics and computer science. Computational Sciences and Engineering is already crucial for many disciplines and is anticipated to play a major role in the future of scientific discovery and engineering design in areas such as physics, neuroscience, and biology.

The UC Davis COSMOS program office is currently located in Kerr Hall with the Departments of Mathematics and Statistics. The COSMOS program offers an academic four-week residential program for talented and motivated students who are completing grades 8-12. COSMOS courses, taught by UC Davis faculty and their colleagues, address a variety of topics including mathematics, materials science, computer science, astronomy, robotics, environmental science, and optics. Proximity of the COSMOS office to the Departments of Mathematics and Statistics, as well to the engineering, physics, and biology programs located near the proposed Mathematical Sciences Building, would provide access for coordination and cooperation with related offices, laboratories, and classrooms.

Project Objectives

The campus identified the following objectives for the proposed Mathematical Sciences Building:

- Provide sufficient space for existing needs and near-term expansion of the Departments of Mathematics and Statistics and provide space to develop the new Computational Sciences and Engineering program.
- Establish the building in proximity to related programs, including engineering, physics, and biology.
- Establish open space areas near the building to provide outdoor gathering places and enhance building entries, and establish a landscaped pedestrian walkway adjacent to the building to increase accessibility to parking areas to the west and the Arboretum to the east.
- Release space in Kerr Hall to provide expansion space for other programs in the College of Letters and Science.

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Project Elements

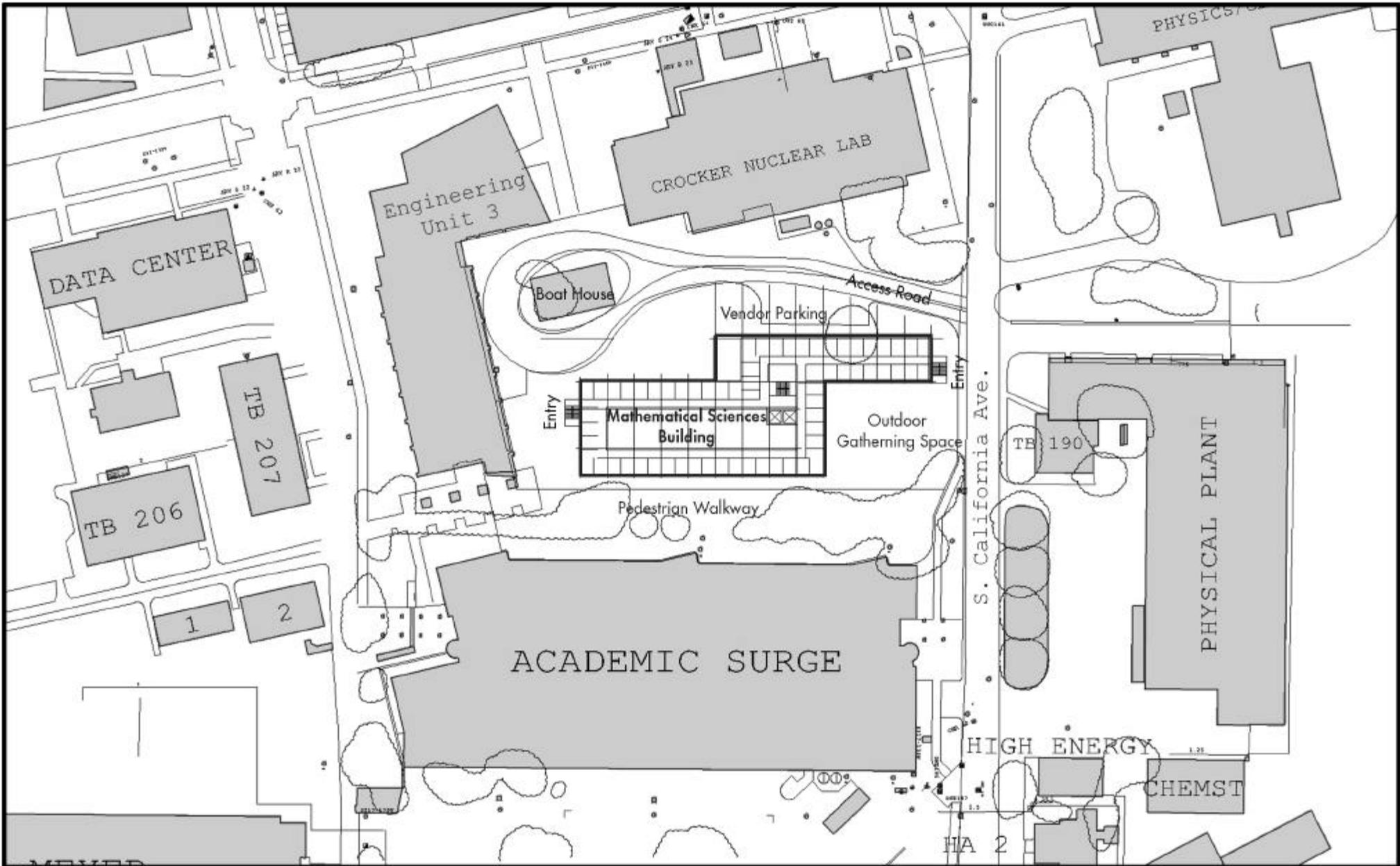
The proposed Mathematical Sciences Building, presented in Figure 3, would provide faculty and staff offices, office support space (including storage areas), conference and seminar space, and computer laboratories. The four-story building would provide approximately 22,497 asf for the Department of Mathematics, 9,037 asf for the Department of Statistics and the Statistical Laboratory, 2,931 asf for the Computational Sciences and Engineering initiative, 188 asf for the COSMOS program, and 1,410 asf of shared central seminar space. Approximate types and amounts of space that would be included in the building are summarized in Table 2.

**TABLE 2. PROPOSED MATHEMATICAL SCIENCES BUILDING
TYPES OF SPACE (ASF)**

Program	Offices and Office Support	Conference/ Seminar	Computer Laboratories	Total
Mathematics	17,555	3,227	1,715	22,497
Statistics	7,244	1402	391	9,037
Statistical Laboratory	1132	265	--	1,397
Computational Sciences and Engineering	1,303	611	1,017	2,931
COSMOS Program	188	--	--	188
Shared Seminar Space	--	1,410	--	1,410
Total	27,422	6,915	3,123	37,460

To accommodate the proposed project, the campus is considering the three following potential plans for the approximately 4,600 gsf currently vacant Hog Barn building:

- Demolition of the building.
- Relocation to a site in the central campus located southwest of the Silo complex, north of Bainer Hall, east of the Architects & Engineers barn, and south of Temporary Building 200. This alternative would provide office, student activity, and/or classroom space.
- Relocation to a site in the west campus, most likely adjacent to existing buildings. This alternative would provide field support and storage space for a field teaching and research program.




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Figure 3. Project Site Plan

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Population

The proposed Mathematical Sciences Building would accommodate approximately 120 full- and part-time faculty and staff. This would include new hires and faculty and staff that would relocate to the new building from Kerr Hall. Space vacated in Kerr Hall would be fully reoccupied by other programs in the College of Letters and Science. For the purposes of this analysis, the campus assumes that the proposed project would facilitate an increase in the on-campus population by approximately 120 employees. The proposed project would not contribute new students.

Landscaping

Landscaped areas would be provided adjacent to the proposed Mathematical Sciences Building to provide outdoor gathering places, enhance building entries, and offer improved pedestrian walkway connections. In particular, a courtyard would be established on the southeastern side of the building near the building's main entrance. This open space area would be designed to encourage outdoor gatherings. A landscaped pedestrian walkway enhancing pedestrian access to the east and west would be established between the southern side of the Mathematical Sciences Building and the north side of Academic Surge. This walkway is an important component of the campus' conceptually planned "garden walk," which (after the Physical Plant area is redeveloped into an academic district) would provide access from parking areas west of the Mathematical Sciences Building to the University Arboretum to the east. The campus would review the environmental effects of other components of this "garden walk" concept (including redevelopment of the Physical Plant) as part of separate projects.

Landscape design would use appropriate plantings in terms of cost, durability, and aesthetics. To encourage infiltration and reduce runoff, an effort would be made to minimize impervious surfaces. Stormwater drainage on the project site would be channeled, where possible, through swales and over other pervious surfaces to filter runoff and maximize percolation.

Utilities

The proposed project would require connections to campus utilities including domestic/fire water, utility water, sewer, storm drainage, chilled water, steam, electricity, and telecommunications. The proposed project would not use natural gas. The capacities of existing utility systems are analyzed in the Utilities and Service Systems section of the attached Environmental Checklist (Section VII).

Domestic/Fire Water

The proposed project would connect to the existing campus domestic/fire water system at a point located north of the proposed Mathematical Sciences Building.

Utility Water

For irrigation of the project's landscaped areas, the proposed project would connect to an existing utility water line at a point located northeast of the proposed Mathematical Sciences Building.

Sewer

The project would connect to the existing campus sanitary sewer system at a point located northeast of the proposed Mathematical Sciences Building.

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Storm Drainage

Stormwater runoff from the proposed project site would drain to storm drain inlets located along the northern and southern sides of the proposed Mathematical Sciences Building.

Chilled Water and Steam

The campus chilled water and steam systems would cool and heat the proposed Mathematical Sciences Building. The proposed Mathematical Sciences Building would connect to the campus chilled water and steam systems at points located northwest of the proposed building.

Electricity

Electricity would be provided for the proposed project from the campus' distribution system. The Mathematical Sciences Building would connect to the campus electrical grid at a point located north of the proposed project site, between the Crocker Nuclear Laboratory and Engineering Unit 3.

Telecommunications

The Mathematical Sciences Building would connect to an existing telecommunication line at a point located north of the proposed project site.

Roadways and Parking

Vehicles would access the proposed Mathematical Sciences Building site from California Avenue, located east of the project site, and a vehicle access road off California Avenue, which traverses north of the proposed building site. The vehicle access road is currently being modified as part of the separate Engineering Unit 3 project. This access road would provide service access to the Mathematical Sciences Building (see Figure 3). Approximately ten permit and service parking spaces currently located off this access road along the north side of the existing Hog Barn would be removed as part of the proposed project. The proposed project would establish limited service parking to the north of the proposed building. Bikes would access the Mathematical Sciences Building from the east and west, and bicycle parking would be provided on the east and west sides of the building. A landscaped pedestrian walkway that would enhance pedestrian access to the east and west would be established between the southern side of the Mathematical Sciences Building and the north side of Academic Surge.

If the campus decides to relocate the Hog Barn building to the central campus site southwest of the Silo complex, vehicle access and service parking would be provided from Parking Lot 43. Bicycle and pedestrian access would be provided from the south, east, and/or west. If the campus decides to relocate the Hog Barn building to a site in the west campus, the building would most likely be relocated near existing development. In addition, since the building would be reused for field support and storage space, the west campus relocation alternative would involve a low concentration of people. Therefore, no new vehicle access or parking would be required.

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CONSTRUCTION SCHEDULE AND STAGING

Site preparation for the proposed project is anticipated to begin in the summer of 2003. The Mathematical Sciences Building is anticipated to be ready for occupation in the winter of 2004. Construction staging and contractor parking for the proposed project would occur onsite.

PROJECT APPROVALS

As a public agency principally responsible for approving and inspecting the proposed project, the University of California (the University) 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 (The Regents) will consider the environmental review and the design of the proposed project in November 2002.

IV. CONSISTENCY WITH THE LRDP

In order to determine the project's consistency with the 1994 LRDP and 1994 LRDP EIR, the following questions must be answered:

- Is the proposed project included in the scope of the development projected in the 1994 LRDP?
- Is the proposed location of the project in an area designated for this type of use in the 1994 LRDP?
- Are changes to campus population that would result from the proposed project included within the scope of the 1994 LRDP population projections?
- Are the objectives of the proposed project consistent with the objectives adopted for the 1994 LRDP?
- Is the proposed project within the scope of the cumulative analysis in the 1994 LRDP EIR?

The following discussion describes the proposed project's relationship to development projections, population projections, land use designations, and objectives contained in the 1994 LRDP and the project's consistency with each of these items. The proposed project's consistency with the 1994 LRDP EIR cumulative impact analysis is also discussed below. Appendix A of this document summarizes the amendments to the 1994 LRDP and the revisions and updates to the 1994 LRDP EIR since original publication.

1994 LRDP SCOPE OF DEVELOPMENT

The 1994 LRDP approved development of approximately 1.75 million asf of building space through 2005-06 for academic and administrative uses, including space for instruction and research, libraries, student services, administrative/support, and public service/non-University agencies. The 1994 LRDP EIR assumed total campus academic and administrative development through 2005-06 would be 6,495,740 asf. From 1993 to 2000, approximately 504,768 asf of space has been approved, constructed, or occupied, for a total of approximately 5,250,508 asf (Table 2). Additional project approvals as of March 2002 have increased this total space to approximately 5,882,349 asf (Table 3). The proposed project would construct approximately 37,460 asf of academic and administrative space. This additional space would not exceed planned development.

If approved, the proposed project and other projects currently under consideration, including the Veterinary Medicine Instructional Facility and the Watershed Science Research Center would cumulatively add approximately 84,950 academic and administrative asf to the campus (increasing the academic and administrative space on campus to 5,967,299 asf). This space would not exceed the 6,495,750 asf of development approved under the 1994 LRDP, as presented in Table 3. Therefore, the proposed project would be consistent with the development approved under the 1994 LRDP.

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TABLE 2. BUILDING SPACE INVENTORY AND BUILDING SPACE PROJECTIONS (ASF)

Program	Space in 1993¹	New Development Built or Approved 1993 to 2000	Projected New Development 1994-2005/06¹	Built or Approved as of 1999-00³	Projected Total Assignable Square Feet for 2005-06¹
Instruction and Research ²	2,941,559	367,029	1,205,000	3,308,588	4,146,559
Libraries	406,353	-1,604	93,000	404,749	499,353
Student Services	363,241	37,415	60,000	400,656	423,241
Administrative/ Support	903,601	89,562	262,000	993,163	1,165,601
Public Service/Non-University Agencies	130,986	12,366	130,000	143,352	260,986
TOTAL	4,745,740	504,768	1,750,000⁴	5,250,508	6,495,740

¹ Identified in the 1994 LRDP.

² Includes all instruction and research-related space, including health sciences, organized research units, organized activities and museums.

³ Source: UC Davis. 2000. Office of Resource Management and Planning Space Inventory Information.

⁴ 1.6 million asf will be distributed on academic and administrative lands, or within other land uses on parcels smaller than two acres; and 150,000 asf in support lands or within other land uses on parcels smaller than two acres.

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TABLE 3. PROJECTED POPULATION AND ACADEMIC AND ADMINISTRATIVE ASF INCREASES FOR PROJECTS CURRENTLY UNDER ENVIRONMENTAL REVIEW

Program	Assignable Square Feet	Student Population	Faculty & Staff Population	Total On-Campus Population
Built or Approved as of March 2002	5,882,349	23,605	11,238	34,843
Mathematical Sciences Building	37,460	0	120	120
Watershed Science Research Center	9,800	0	36	36
Veterinary Medicine Instructional Facility	37,690	568	5	573
Total Proposed	84,950	568	151	719
Existing, Approved and Proposed Projects	5,967,299	24,173	11,389	35,562
Projections for 2005-06 (LRDP)	6,495,750	26,000	12,630	38,630

1994 LRDP POPULATION PROJECTIONS

The on-campus population anticipated under the 1994 LRDP for 2005-06 is 38,630 (26,000 students and 12,630 faculty and staff) (see Table 4). The 1999-00 on-campus population estimate was 32,775 (22,887 students and 9,888 faculty and staff). Recently built and approved projects would bring this total to approximately 34,843 (23,605 students and 11,238 employees). The proposed project would contribute approximately 120 new campus employees, but it would not contribute new students. Population growth associated with the proposed project would not exceed population projections assumed in the 1994 LRDP EIR. The proposed project and other projects currently under consideration (the Watershed Science Research Center and the Veterinary Medicine Instructional Facility) would add approximately 151 new campus employees and 568 new students to this total (Table 3). This would also not exceed the on-campus population anticipated under the 1994 LRDP.

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TABLE 4. ESTIMATED AND PROJECTED CAMPUS POPULATION

Population	1992-93 Estimate³	1999-00 Estimate⁴	1994 LRDP Projected Growth⁵	2005-06 Projection⁵
Students ¹	21,060	22,887	+ 3,113	26,000
Faculty and Staff ²	9,550	9,888	+ 2,742	12,630
Total Population	30,610	32,775	+ 5,855	38,630

¹ Off-campus student population not counted in this total. In 2005-06, approximately 570 students would be located at the UC Davis Medical Complex, Sacramento Campus, and an additional 280 students would be enrolled elsewhere at other UC Davis affiliated facilities. Therefore, accounting for the off-campus student population, total UC Davis enrollment in 2005-06 will be 26,850.

² Includes faculty and staff located on the central, west, and south campus units, Russell Ranch, and at campus facilities in the City of Davis sphere of influence.

³ Base year for 1994 LRDP EIR analysis. Source: UC Davis 1994 LRDP EIR.

⁴ Source: UC Davis. 2001. Office of Resource Management and Planning population projections.

⁵ Projected 1994 LRDP growth and buildout. Source: UC Davis 1994 LRDP EIR.

1994 LRDP LAND USE DESIGNATION

The proposed Mathematical Sciences Building would be located on a site designated in the 1994 LRDP for 'Academic and Administrative High Density' uses. This land use category (as described on pages 45-46 of the 1994 LRDP) provides for space that conducts the instruction and research mission of the University, including: classrooms; research laboratories and research support areas; faculty, student, and staff offices; libraries; student activity space; meeting rooms; and space for public service activities linked to UC Davis. The proposed project includes construction of a building that would provide faculty offices, office support space, seminar space, and dry research and laboratory space. The proposed Mathematical Sciences Building would be consistent with the project site's 'Academic and Administrative High Density' land use designation.

The potential central campus relocation site for the Hog Barn building is located southwest of the Silo complex and is designated in the 1994 LRDP for 'Academic and Administrative High Density' uses. If the Hog Barn were relocated to this site, it would be reused to provide office, student activity, and/or classroom space. As discussed above, the 'Academic and Administrative High Density' land use category provides for this type of space. Therefore, this relocation/reuse alternative would be consistent with the associated 1994 LRDP land use designation.

A potential relocation site for the Hog Barn building in the west campus would be designated for either 'Academic and Administrative Low Density' or 'Teaching and Research Fields' uses. If the Hog Barn were relocated to the west campus, it would be reused to provide field support and storage space for a field teaching and research program. As described on page 46 of the 1994 LRDP, the 'Academic and Administrative Low Density' land use category provides for the same range of activities as the high density category (discussed above), but buildings are typically no more than one story in height. Only one section of the Hog Barn building is two stories tall, and the rest of the building is one story

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tall. As described on page 47 of the 1994 LRDP, the 'Teaching and Research Fields' land use category provides for agricultural lands used for teaching, research, and support of academic programs primarily in the plant and animal sciences, and may include agricultural-related buildings on sites smaller than two acres. The Hog Barn building would provide agricultural storage and support space and would occupy approximately 0.1 acre. Therefore, this relocation/reuse alternative would be consistent with the possible associated 1994 LRDP land use designations.

1994 LRDP OBJECTIVES

The purpose of the 1994 LRDP is to guide campus land use and development in response to projected population growth and the changing nature of academic programs. The 1994 LRDP responds to projected growth in the campus population by:

- providing new instructional space and classrooms required to serve the anticipated growth in student population,
- providing expanded instruction and research space projected for the biological sciences, agricultural sciences, physical sciences, and veterinary medicine, and
- providing flexibility for significant expansions in response to future academic missions.

In addition, the 1994 LRDP contains specific objectives that are relevant to the proposed project, including:

Building Space. Manage existing building space to provide sufficient and suitable space for existing and evolving campus programs. [Developed Resources Objective, page 36 of the 1994 LRDP.]

Location of Programs. Cluster related academic and administrative programs geographically when feasible, to facilitate academic interaction. [Developed Resources Objective, page 36 of the 1994 LRDP.]

Central Campus. Concentrate high density academic development on the Central Campus. [Land Use Plan Objectives, page 48 of the 1994 LRDP.]

A compact core campus. Maintain the academic core for instruction and research facilities, generally within a 10-minute walk from Shields Library. Maintain building density targets in the core campus, with an average height of four stories for new development. Use the infill of new buildings and the removal of outmoded facilities as opportunities to continue the development of common open spaces as initiated in the 1963 plan. [Academic and Administrative Land Use Objectives, page 54 of the 1994 LRDP.]

New open space accompanying new development. Develop new common open spaces and tree-lined streets as the built environment expands, reinforcing the value that the campus community places on open space. [Open Space Objectives, page 76 of the 1994 LRDP.]

Bicycle and pedestrian systems. Accompany new development, particularly in the Central Campus, with appropriate additions to the bicycle and pedestrian systems. [Transportation and Parking Objectives, page 80 of the 1994 LRDP.]

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The Departments of Mathematics and Statistics would be relocated from Kerr Hall to the proposed Mathematical Sciences Building. Vacated space in Kerr Hall would provide expansion space for other programs in the College of Letters and Science, fulfilling "Building Space" Developed Resource Objective.

The proposed Mathematical Sciences Building would provide space for the Departments of Mathematics and Statistics and the new Computational Sciences and Engineering Program in geographic proximity to related programs, including engineering, physics, and biology. This would fulfill "Location of Programs" Developed Resources Objective.

The proposed project would construct the four-story Mathematical Sciences Building, a high density academic and administrative land use, on the core campus, fulfilling "Central Campus" Land Use Plan Objective and "A compact core campus" Academic and Administrative Land Use Objective.

The proposed project would establish open space areas adjacent to the proposed Mathematical Sciences Building to encourage outdoor gatherings and enhance building entries, fulfilling "New open space accompanying new development" Open Space Objective.

The project would establish a landscaped pedestrian walkway along the south side of the proposed Mathematical Sciences Building to enhance pedestrian access to the east and west, fulfilling "Bicycle and pedestrian systems" Transportation and Parking Objective.

1994 LRDP EIR CUMULATIVE IMPACT ANALYSIS

The 1994 LRDP EIR contained cumulative impact analyses for the projected buildout of the 1994 LRDP. The cumulative context in the 1994 LRDP EIR varied depending on the nature of the issue being studied. Cumulative effects were classified by either natural resources boundaries (i.e., biological resources, hydrology, geology, and air quality); or by population growth and associated development within the City of Davis and Yolo and Solano counties (i.e., public and community services, transportation, hazardous materials, noise, aesthetics, and cultural resources). The cumulative impact analysis for each environmental issue in the EIR was defined based on the cumulative context that best defined the geographic extent of the possible cumulative effect (see Section 5.2, Cumulative Impacts, of the 1994 LRDP EIR).

The technical discussions in the Tiered Initial Study Environmental Checklist, attached hereto, conclude that the proposed project would:

- not contribute to significant and unavoidable cumulative impacts identified in the 1994 LRDP EIR related to loss of prime agricultural land (Item 2a), use and disposal of radioactive materials (Item 7 a, b), use and disposal of biohazardous materials (Item 7a, b), and loss of valley elderberry longhorn beetle habitat (Item 8a);
- incrementally contribute to, but not exceed, significant and unavoidable impacts identified in the 1994 LRDP EIR related to intersection level of service (Item 4b), increased noise sources (Item 5a, c), construction air pollutants (Item 6b), criteria air emissions (Item 6b, c), toxic air emissions (Item 6b, c, d), use and disposal of hazardous materials (Item 7a, b), development on potentially contaminated sites (Item 7d), demand for emergency response (Item 7g), loss of ruderal/annual

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grassland (Item 8a), receiving water quality (Item 9a), groundwater recharge (Item 9b), demand for water from the deep aquifer (Item 9b), seismic effects (Item 10a), loss of archaeological resources (Item 12b, d), loss of rural character (Item 13b, d), City of Davis fire protection services (Item 14a[i]), City of Davis police protection services (Item 14 a[ii]), and contribution of school-age students in the Davis Joint Unified School District (Item 14 a[iii]); and

- incrementally contribute to, but not exceed, less-than-significant cumulative impacts identified in the 1994 LRDP EIR related to carbon monoxide emissions (Item 6b, c), water demand from the shallow/intermediate aquifer (Item 9b), demand for parks and recreation (Item 14a[iv] and 15a), demand for libraries (Item 14a[v]), demand for electricity (Item 16h), wastewater capacity (Item 16a, b, e), and solid waste disposal capacity (Item 16f).

The project's Focused Tiered EIR will address the cumulative impacts related to a potential substantial adverse change in the significance of a historical resource (Items 12 a and f), and a substantial adverse change in a valued element of the campus' visual landscape loss of historic resources (Items 13 c, e, and f).

Adequacy of the 1994 LRDP EIR through 2005-06

As presented in Appendix B of this document, the campus has updated projections for campus growth through 2005-06 based on information provided by the University regarding enrollment growth and based on reasonably foreseeable campus projects. As presented in Appendix B, the campus has concluded that, because development and environmental effects associated with projected increases in the campus population through 2005-06 will be within the parameters assumed in the 1994 LRDP, the cumulative impacts of growth through 2005-06 have been adequately addressed in the 1994 LRDP EIR.

Cumulative Impacts Analysis - Environmental Effects through 2014-15

The University has recently determined that enrollment throughout the University system will increase by approximately 60,000 to 70,000 students within the next 10 to 15 years. This growth in enrollment is related to projected demographic changes that are expected to increase the demand for a college education in California. UC Davis is currently considering how it should plan to accommodate the campus' share of this enrollment growth. The campus' share of this growth could bring the three-quarter average on-campus student population to approximately 29,500 by 2014-15. The 1994 LRDP already assumed 26,000 of these students. This anticipated enrollment growth and associated increases in employees and facility construction for 2014-15 would surpass the assumptions identified in the 1994 LRDP for 2005-06 and evaluated in the 1994 LRDP EIR. The campus will prepare a new LRDP to identify the changes required to accommodate anticipated growth, and the campus will prepare an EIR to assess the environmental impacts of such changes. It is anticipated that The Regents will review and consider approval of the updated LRDP and its EIR in the fall of 2003.

To the extent that growth and physical development anticipated for 2014-15 were not considered in the 1994 LRDP EIR, additional environmental effects that were not previously identified may occur. However, it would be speculative to determine or analyze these effects now because most

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components of the next LRDP are not currently known. Nevertheless, the campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15.

V. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

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

Based on the analysis presented in this Tiered Initial Study, it has been determined that for the resource areas that are not checked above, 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 1994 LRDP EIR, as revised; and/or would incrementally contribute to, but not exceed, certain significant impacts previously identified in the 1994 LRDP EIR, and that for such impacts, no new mitigation measures, other than those previously identified in the 1994 LRDP EIR, are required. The proposed project could result in new potentially significant impacts in the areas of cultural resources and aesthetics that were not sufficiently addressed and mitigated by the 1994 LRDP EIR, as revised. Therefore, preparation of a Focused Tiered EIR is appropriate.

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VI. DETERMINATION

Pursuant to Sections 15152 and 15168 of the CEQA Guidelines, this Tiered Initial Study has been prepared to evaluate the potential environmental impacts of the proposed project in relation to the programmatic environmental analysis contained in the 1994 LRDP EIR. On the basis of the evaluation that follows, I find that:

- ___ The proposed project is exempt from CEQA pursuant to the general exemption (CEQA Guidelines, 15061(b)(3)), a statutory exemption, and/or a categorical exemption, and that if a categorical exemption, none of the exceptions to the exemption apply. A NOTICE OF EXEMPTION will be prepared.

- ___ Pursuant to Section 15168(c)(2) of the CEQA Guidelines, the proposed project may incrementally contribute to, but will not exceed, the significant environmental impacts previously identified in the 1994 LRDP EIR, and the project will otherwise result in no new significant environmental impacts. Further, having avoided or mitigated impacts pursuant to the 1994 LRDP EIR, no new mitigation measures, other than those previously identified in the 1994 LRDP EIR, are required. FINDINGS consistent with this determination will be prepared.

- ___ The proposed project may incrementally contribute to, but will not exceed, significant environmental impacts previously identified in the 1994 LRDP EIR. Further, the proposed project will result in no new significant impacts other than those previously identified in the 1994 LRDP EIR. However, the project will have environmental impacts not previously addressed in the 1994 LRDP EIR, but there is no substantial evidence that such impacts may have a significant impact on the environment. No new mitigation measures, other than those previously identified in the 1994 LRDP EIR, are required. A NEGATIVE DECLARATION will be prepared.

- ___ The proposed project may incrementally contribute to, but not exceed, certain significant cumulative impacts previously identified in the 1994 LRDP EIR, and that for such impacts, no new mitigation measures, other than those previously identified in the 1994 LRDP EIR, are required. In addition, the project may result in a potentially significant impact not previously identified in the 1994 LRDP EIR, but a proposed project specific mitigation measure would reduce the effect of such impact to a point that clearly no significant impact would occur. On the basis of the Tiered Initial Study and implementation of all proposed project specific mitigation measures, there is no substantial evidence that the project as mitigated may have a significant effect on the environment. A MITIGATED NEGATIVE DECLARATION will be prepared.

- X The proposed project may incrementally contribute to, but will not exceed, certain significant environmental impacts previously identified in the 1994 LRDP EIR. For such impacts, no new mitigation measures, other than those previously identified in the 1994 LRDP EIR, are required and those previously identified measures are incorporated by reference. Further, there is substantial evidence that the project may result in a significant environmental impact that was not previously identified in the 1994 LRDP EIR, and/or will exacerbate a significant environmental impact previously identified in the 1994 LRDP EIR. An ENVIRONMENTAL IMPACT REPORT will be prepared that addresses the new impacts not previously identified in the 1994 LRDP EIR and supplements the 1994 LRDP EIR.

VII. EVALUATION OF ENVIRONMENTAL IMPACTS

INTRODUCTION

The Environmental Checklist form is used to assist in evaluating the potential environmental impacts of the proposed project with respect to the 1994 LRDP EIR. The checklist identifies potential project effects as follows:

- (1) **Potentially Significant Impact:** An effect that is substantial based on significance criteria. If there are one or more “Potentially Significant Impact” entries in the checklist form, an EIR is required.
- (2) **Less than significant with Mitigation Incorporated:** An effect that, with the incorporation of mitigation measures, is reduced from a “Potentially Significant Impact” to a “Less Than Significant Impact.” The Tiered Initial Study includes mitigation measures and briefly explains how these measures reduce the associated effect to a less-than-significant level.
- (3) **Impact for which LRDP/Program EIR is Sufficient:** An effect that was adequately addressed and mitigated to the extent feasible in the 1994 LRDP EIR (the Program EIR).
- (4) **Less than Significant Impact:** No significant impacts, only less-than-significant impacts, will result.
- (5) **No Impact:** The project does not create an impact in the category.

Environmental impacts of the proposed project that are determined in this Tiered Initial Study to have been adequately analyzed and mitigated in the 1994 LRDP EIR generally fall into one of two general categories: (1) impacts that were determined to be less-than-significant after the implementation of mitigation measures identified in the 1994 LRDP EIR, and (2) impacts considered significant and unavoidable in the 1994 LRDP EIR. No further analysis is required for impacts within the first category since the 1994 LRDP EIR and associated mitigation measures would reduce project-level impacts to a less-than-significant level. Impacts identified as significant and unavoidable in the 1994 LRDP EIR include: (a) impacts identified as significant for some projects, but which would not be significant in relation to the proposed project; and (b) impacts that are significant on a cumulative level but not at a project level, for which the 1994 LRDP EIR fully addresses the cumulative impacts. The following resource discussions provide specific reasons for concluding that the 1994 LRDP EIR adequately analyzes the impacts of the proposed project.

Substantiation and clarification for each checklist response is also provided in the following resource discussions. Included in each discussion is a summary of relevant setting information and 1994 LRDP EIR impacts and mitigation measures that apply to the proposed project.

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1. LAND USE AND PLANNING

Background

The 5,300 acre UC Davis campus, in general, is comprised of four campus units: the central campus, the south campus, the west campus, and Russell Ranch (see Figure 3-2, Regional and Local Setting, on page 3-5 of the 1994 LRDP Draft EIR). The 1994 LRDP designated land uses on campus including Academic and Administrative (High and Low Density); Support; Housing; Physical Education, Intercollegiate Athletics, and Recreation (PE/ICA/Recreation); Teaching and Research Fields; Open Space (Formal, Reserve, and Teaching/Research); Parking; Community Gardens; Commercial; and Enterprise Reserve. The approximately two acre proposed project site is designated for 'Academic and Administrative High Density' in the 1994 LRDP. The site is currently occupied by the Hog Barn. The 'Academic and Administrative High Density' land use designation is defined in the 1994 LRDP as follows:

Academic and Administrative High Density: This land use category includes space for conducting the instruction and research mission of the University of California. Classrooms; research laboratories and research support areas including animal facilities; faculty, student and staff offices; and libraries make up the majority of this space. Also included is space for student activities, museums, administrative offices, meeting rooms, and space for public service activities linked to UC Davis. The high density designation includes existing buildings up to nine stories, and an average height for new buildings of four stories.

The potential central campus relocation site for the Hog Barn building is southwest of the Silo complex and is also designated in the 1994 LRDP for 'Academic and Administrative High Density' uses.

A west campus relocation site for the Hog Barn building would be designated for either 'Academic and Administrative Low Density' or 'Teaching and Research Fields' uses. These land use categories are defined in the 1994 LRDP as follows:

Academic and Administrative Low Density: This land use designation for academic and administrative uses includes the same range of activities as the high density category, but buildings are typically no more than one story.

Teaching and Research Fields: This land use category includes agricultural lands used for teaching, research, and support of academic programs primarily in the plant and animal sciences. This land is typically free of large buildings but may include agricultural-related buildings on sites smaller than two acres.

The 1994 LRDP EIR assumed total campus academic and administrative development through 2005-06 would be 6,495,740 asf. As of March 2002, approximately 5,882,349 asf of academic and administrative space has been approved, constructed, or occupied (Table 3). The proposed project would construct approximately 37,640 asf of academic and administrative space. If approved, the proposed project and other projects currently under consideration, including the Veterinary Medicine Instructional Facility and the Watershed Science Research Center would cumulatively add approximately 84,950 academic and administrative asf to the campus (increasing the academic and administrative space on campus to 5,967,299 asf). This space would not exceed the 6,495,750 asf of development approved under the 1994 LRDP, as presented in Table 3. Therefore, the proposed project would be consistent with the development approved under the 1994 LRDP.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to land use planning significant if planned growth would:

- propose uses that would conflict with locally adopted city or county planning policies; or
- propose uses that would be incompatible with adjacent uses and that would be considered a nuisance because the proposed use would (a) cause adjacent land uses to make extensive operational adjustments that would reduce the efficiency or effectiveness of the land uses, or (b) otherwise significantly adversely affect the efficiency, effectiveness, or productivity of the land uses.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on land use and planning were evaluated in Section 4.1 (Land Use) of the 1994 LRDP Draft EIR. No significant land use and planning impacts were identified in the 1994 LRDP EIR. Land use impacts 4.1-1 and 4.1-5 in the 1994 LRDP EIR address the loss of prime farmland. Due to revisions to the CEQA guidelines since 1994, these impacts are currently addressed in the Environmental Checklist section titled “Agricultural Resources.” The 1994 LRDP EIR land use and planning analysis has been updated to reflect land use designation changes, as identified in the WWTP Replacement Project EIR (Chapter 4.6 of the Draft EIR), the 1997-98 Major Capital Improvement Projects SEIR (Sections 5.3, 6.3, and 7.3 of the Draft SEIR), the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration (page 29 of the Initial Study), the USDA Western Human Nutrition Research Complex Tiered Initial Study and Mitigated Negative Declaration (pages 45-46 of the Initial Study), and the Segundo Housing Improvement Projects Tiered Initial Study and Mitigated Negative Declaration (pages 33 to 35 of the Initial Study). Appendix A of this Initial Study summarizes updates and revisions to the 1994 LRDP EIR. No new land use and planning impacts were identified as a result of these updates. The proposed project is within the scope of the land use and planning analyses presented in these documents. The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus’ potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 is not anticipated to introduce any new cumulative land use and planning impacts or require any new mitigation measures. However, the campus will reexamine potential cumulative land use and planning impacts and any new mitigation measures that may be required during the LRDP update process.

LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less-than-significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation Incorporated	Impact for which LRDP/Program EIR is Sufficient	Less-than-significant Impact	No Impact
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 LRDP, 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 type="checkbox"/>	<input checked="" 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) Conflict with any designated adjacent existing or future land uses on or off-campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The proposed project would not physically divide a community. The proposal to develop the Mathematical Sciences Building in the core campus would not disrupt or separate land use activities currently taking place in the region. Nearby land uses include the Crocker Nuclear Laboratory to the north, California Avenue and the Physical Plant to the east, Academic Surge to the south, and Engineering Unit 3 to the west (see Figure 2). The proposed project would increase activity at the site, but it would not physically separate activities and land uses. The currently unused Hog Barn facility would be demolished or relocated from the proposed project site. If the Hog Barn were relocated to the core campus site southwest of the Silo complex, or if it were relocated to a site in the west campus, the building would not disrupt or separate existing land uses. The building would be reused for activities compatible with the relocation site. No impact would occur.
- b) The proposed Mathematical Sciences Building would be located on land designated in the 1994 LRDP for 'Academic and Administrative High Density' uses. The proposed building would be consistent with this land use designation. The potential core campus relocation site for the ' building is designated for 'Academic and Administrative High Density' uses; reuse of the building for office, activity, or classroom space at this location would be consistent with this designation. A relocation site in the west campus would be designated for either 'Academic and Administrative Low Density' or 'Teaching and Research Fields' uses; reuse of the Hog Barn building for field support and storage space would be consistent with the associated 1994 LRDP land use designations. As discussed further in Section IV, Consistency with the 1994 LRDP, the project would also be consistent with the increase in academic and administrative space and campus

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population approved under the 1994 LRDP. Therefore, the project is consistent with the 1994 LRDP and no impact would occur.

The proposed project is located in the Davis Planning Area shown on the City of Davis General Plan. Although the University of California is exempt from local plans, policies, and zoning regulations, it is campus policy to cooperate with the general plans and land use policies of the City of Davis and Solano and Yolo Counties. The 1994 LRDP Draft EIR includes relevant policies and goals from the City of Davis and Counties of Solano and Yolo General Plans on pages 4.1-25 through 4.1-27. The 1987 City of Davis General Plan was updated in May 2001. The proposed project would not conflict with the updated City of Davis General Plan or the General Plans for the Counties of Solano and Yolo.

- c) The proposed Mathematical Sciences Building site consists primarily of developed hardscape (including sidewalks, driveways, and structures associated with the Hog Barn facility). Most of the softscape grounds on the site are currently landscaped with grass lawn and ornamental plantings (Jones & Stokes 1998). The potential relocation site for the Hog Barn building in the core campus is landscaped primarily with grass lawn and is surrounded by development. Potential relocation sites in the west campus would consist of fallow agricultural land or would be graveled and located adjacent to existing development. The Mathematical Sciences Building site and potential Hog Barn relocation sites are not included in any conservation plan and therefore would not conflict with any applicable habitat conservation plan or natural communities' conservation plan land use designation. No impact is anticipated.
- d) The project would be located on campus and would not conflict with off-campus land uses. The proposed project would not conflict with surrounding land uses and no impact would occur.
- e) The standards of significance for land use and planning that were used in the preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the land use and planning questions in the current CEQA Environmental Checklist. Based on the discussion presented above, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR. No impact would occur.

Summary

The 1994 LRDP EIR did not identify any significant impacts that are currently categorized as land use and planning. The proposed project would not result in any significant land use and planning impacts.

2. AGRICULTURAL RESOURCES

Background

The campus includes land designated by the State Department of Conservation as Prime Farmland primarily in the west campus, south campus, Russell Ranch and a small portion of the central campus (see Figure 4.1-5 on page 4.1-30 of the 1994 LRDP Draft EIR).

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to agricultural resources significant if campus or regional growth would:

- propose uses that would convert or cause the conversion of Prime Farmland (as defined by the State Department of Conservation) to non-agricultural uses or cancel or cause the cancellation of Williamson Act contracts; or
- propose uses that would impair the agricultural productivity of prime agricultural land.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on agricultural resources were addressed in Section 4.1 (Land Use) of the 1994 LRDP Draft EIR. Cumulative impacts on agricultural resources were reevaluated in the WWTP Replacement Project EIR, and agricultural resource impacts were revised to account for the loss of additional prime farmland not previously assessed in the 1994 LRDP EIR (Appendix G of the Final EIR). Both the 1997-98 Major Capital Improvement Projects SEIR and the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration identified losses of prime farmland over the amount assessed in the 1994 LRDP. However, these projects included measures to mitigate the impact on agricultural resources to a less-than-significant level (Appendix A of the Final SEIR, and pages 29-30 and 64 of the Initial Study). Appendix A of this document summarizes updates and revisions to the 1994 LRDP EIR. The proposed project is within the scope of the agricultural resource analysis presented in the 1994 LRDP EIR, as reevaluated and revised in subsequent documents.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would develop farmland that was not previously assumed for development under the 1994 LRDP. The cumulative impacts associated with cumulative loss of farmland are anticipated to remain significant and unavoidable. While the campus has not yet been able to identify feasible measures to mitigate the permanent conversion of prime farmland to a less-than-significant level, this impact and any feasible mitigation will be studied as part of the next LRDP process. There are no significant agricultural resources impacts relevant to the proposed project.

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AGRICULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) The proposed Mathematical Sciences Building would occupy approximately two acres on part of the central campus that is designated as "Urban and Built-Up Land" on the State of California Department of Conservation's 1990 Yolo and Solano Counties Important Farmland Map (shown in Figure 4.1-5 of the 1994 LRDP EIR). The category of "Urban and Built-Up Land" applies to land that is occupied by structures or infrastructure to accommodate a building density of at least six structures within ten acres. The central campus Hog Barn relocation alternative would develop an additional approximately 0.1 acre of land designated as "Urban and Built-Up Land." The west campus Hog Barn relocation alternative would develop approximately 0.1 acre of land designated either as "Urban and Built-Up Land" or "Prime Farmland." The field support reuse of the Hog Barn on a west campus relocation site would be consistent with the "Prime Farmland" designation. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as identified by the State of California Department of Conservation. No impact would occur.
- b) No Williamson Act contracts exist on campus. In addition, the proposed Mathematical Sciences Building site is designated as "Urban and Built-Up Land" by the State of California Department of Conservation and as 'Academic and Administrative High Density' in the 1994 LRDP. The proposed project would not conflict with either an existing zoning for agricultural use or a Williamson Act contract and no impact would occur.

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- c) The proposed Mathematical Sciences Building site is not located on agricultural land and is not situated adjacent to agricultural lands. Animal husbandry activities previously occurring in the Hog Barn facility that is located on the project site were recently relocated as part of a separate project. Possible relocation of the Hog Barn building to a site in the west campus could occupy fallow agricultural land, but the building would be used to support agricultural activities. Implementation of the proposed project would not result in the conversion of farmland to non-agricultural uses, and no impact would occur.

- d) Standards of significance for agriculture resources impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the agricultural resources questions in the current CEQA Environmental Checklist. Based on the discussion presented above, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to agriculture resources that were not previously analyzed in the 1994 LRDP EIR and subsequent documents. Since the project would not result in the loss of farmland, no impact would occur.

Summary

The proposed project would not result in new or significant agriculture resources impacts. No mitigation is required.

3. POPULATION AND HOUSING

Background

The campus population is the average number of students, faculty, and staff that may be on campus at any given time. For campus planning purposes, the annual on-campus population is approximated based on an average campus population over three academic quarters (fall, winter, and spring). Current and projected campus population figures are presented in Table 3 of this Tiered Initial Study. Increased population growth on campus would also result in growth in the City of Davis. The increased population attributed to UC Davis is assumed to be included in the population projections adopted by the City of Davis General Plan.

The campus maintains a policy to house all freshman who wish to live on campus, and the 1994 LRDP includes a goal to provide housing for 25 percent of enrollment. UC Davis also provides on-campus family housing (Solano Park, Orchard Park, and Russell Park) and faculty and staff housing (Aggie Village).

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to population and housing significant if campus or regional growth would:

- induce substantial growth or concentration of population;
- displace a large number of people; or
- conflict with the housing and population projections and policies set forth in the City of Davis General Plan.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on population and housing issues were addressed in Section 4.2 of the 1994 LRDP Draft EIR. No significant population or housing impacts were identified in the 1994 LRDP EIR or subsequent documents. The proposed project is within the scope of the population and housing analysis presented in the 1994 LRDP EIR. The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would exceed campus population projections assumed under the 1994 LRDP. While this growth is not anticipated to result in any new cumulative population and housing impacts different in character from those already assessed in the 1994 LRDP EIR, the campus will reexamine potential cumulative population and housing impacts and any new mitigation measures that may be required during the LRDP update process.

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POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/Program EIR is Sufficient	Less Than Significant Impact	No Impact
a) Cumulatively exceed 1994 LRDP campus population projections?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people and/or 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"/>
d) Conflict with the population projections or housing policies set forth in the City of Davis General Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) As discussed in Section IV and shown in Table 4, the recent population estimate (from 1999-2000) for campus faculty, staff, and students is 32,775 (22,887 students and 9,888 faculty and staff). Projected buildout presented in the 1994 LRDP for year 2005-06 is 38,630 (26,000 students and 12,630 faculty and staff).

The proposed project would facilitate an increase in the on-campus population by approximately 120 new campus employees and no new students. With the proposed project, other currently proposed projects, and recently approved projects, the total staff population for the campus would be approximately 35,562 (see Table 3). The addition of 120 employees would not exceed campus population projections in the 1994 LRDP through 2005-06. No impact would occur.

- b) The proposed project would facilitate an increase in the on-campus population by approximately 120 new campus employees. The addition of 120 employees associated with the proposed project would not exceed campus population projections in the 1994 LRDP. The proposed project would require minor utility extensions that would not induce growth in the area. Therefore, the proposed project would not directly or indirectly induce substantial population growth in the area, and no impact would occur.

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- c) The project site is not currently designated for housing, nor does it include any existing housing facilities. In addition, the proposed project would not necessitate the construction of replacement housing due to the displacement of people, because it would only relocate operations currently occurring on campus in Kerr Hall. Therefore, no impact would occur.
- d) According to the 1994 LRDP EIR, buildout of the 1994 LRDP could add approximately 8,000 residents, including students, faculty and staff, and their dependents to the City of Davis through 2005-06. The 1994 LRDP EIR considered campus growth a component of buildout under the 1987 City of Davis General Plan, which projected population in the City of Davis planning area would reach 75,000 by 2010. The City updated its 1987 General Plan in May 2001. The plan maintains the projection that the City of Davis planning area will reach 75,000 by 2010. As described on page 4.2-19 of the 1994 LRDP Draft EIR:

Growth projections for the City of Davis are based upon a buildout of land uses designated by the City of Davis General Plan. Although these projections do not specifically account for additional growth from the campus or other employers in the Davis area, the growth of the campus and the resultant indirect growth in the City of Davis is considered to be a portion of the 75,000 target population. Because the 1994 LRDP is not considered to expand the projected City of Davis year 2010 population, the 1994 LRDP is not considered to conflict with the population projections and policies of the City of Davis General Plan.

Implementation of the proposed project would add approximately 120 new employees to the campus, which would contribute to growth of the campus population. This increase in population is within the population projections in the 1994 LRDP (see discussion under Section III, Consistency with 1994 LRDP and LRDP EIR).

Because the proposed project is consistent with growth projected under the 1994 LRDP, and the 1994 LRDP does not conflict with the population projections or housing policies of the City of Davis General Plan, the proposed project would not conflict with population projections or housing policies of the City of Davis General Plan. Therefore, no impact would occur.

- e) Standards of significance for population and housing impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the population and housing questions in the current CEQA Environmental Checklist. Based on the discussion presented above, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to population and housing that were not previously analyzed in the 1994 LRDP EIR. No impact would occur.

Summary

The proposed project would not result in new or significant population and housing impacts that have not already been adequately assessed in the 1994 LRDP EIR. No mitigation is required.

4. TRANSPORTATION AND CIRCULATION

Background

I-80 and SR 113 provide primary regional roadway access to the campus and the City of Davis. Access to the campus from the City of Davis is provided primarily from A Street, B Street, First Street, and Russell Boulevard. On campus, the major element of the central campus roadway system is the Loop Road System, which encircles academic and administrative uses. Inside the loop, general motor vehicle access is either prohibited or limited to specific destinations, with through traffic eliminated. The Loop Road System consists of Russell Boulevard, A Street, Old Davis Road, California Avenue, and La Rue Road. Hutchison Drive and Russell Boulevard provide primary access to and from the central campus and the west campus. Access to and from the central campus and the south campus is provided primarily by Old Davis Road. Russell Boulevard provides access to and from Russell Ranch. Parking, bicycle paths, and transit service are provided throughout the campus and are concentrated on the core of the central campus. Figure 3-8 on page 3-18 of the 1994 LRDP Draft EIR depicts major campus parking areas and roadways.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to transportation/circulation significant if campus or regional growth would:

- result in Level of Service (LOS) for roadways within the City of Davis and the central campus of LOS “D” for existing roadways and LOS “C” for new roadways;
- result in LOS for County roadways of LOS “C”;
- result in LOS for I-80 of LOS “E”;
- result in LOS for SR 113 of LOS “D”;
- result in disruption to existing patterns of pedestrian and bicycle circulation, including the effects of congestion and unsafe conditions, and/or result in new uses which would create demand for bicycle and pedestrian travel without appropriate facilities;
- result in disruption to the provision of transit services, including making transit safe, and/or result in demands for transit services which are not satisfied as part of the project or a known plan;
- result in an increase in winter parking utilization over 90 percent on the Central Campus, Medical Sciences Complex, and/or major facilities of the West and South Campuses;

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- result in the elimination of existing parking and increases in the projected utilization rate over 85 percent without permitting adequate time (usually 24 months) to implement a parking solution (to campus construction standards); or
- require additional parking and result in an increase in the utilization rate over 90 percent, unless decreases in projected campus parking demand are expected to substantially counteract this trend.

The 1994 LRDP EIR LOS standards are based, in part, on the City of Davis traffic standards that were current in 1994. In the City of Davis General Plan update adopted in May 2001, the City included the following new LOS standards:

- unless preempted by the County Congestion Management Plan, LOS “E” for automobiles is sufficient for arterials and collectors during peak traffic hours, and
- LOS “F” is acceptable in the Core Area (generally downtown area of the City).

Although the new City standards are less stringent than the 1994 LRDP standards, the campus continues to use the 1994 LRDP standards.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on transportation and circulation were evaluated in Section 4.3 of the 1994 LRDP Draft EIR. The 1997-98 Major Capital Improvements Projects SEIR updated the 1994 LRDP EIR traffic analysis and revised 1994 LRDP EIR Mitigation Measure 4.3-1 (Section 8 of the Draft SEIR). The Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR further updated the 1994 LRDP EIR transportation and circulation analysis and included a project-specific mitigation measure to reduce an identified impact (identified as 1994 LRDP EIR Mitigation Measure 4.3-1 (b) (f)) (Section 3 of the Final Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR). Appendix A in this Initial Study presents further information on revisions to the 1994 LRDP EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR, the 1997-98 Major Capital Improvements Projects SEIR, and the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR are also presented. The proposed project is within the scope of the analysis presented in the 1994 LRDP EIR as updated in subsequent documents. Please note that 1994 LRDP Impact 4.3-1 includes mitigation measures to reduce the impact to a less-than-significant level. However, this impact was identified as significant and unavoidable because the University of California could not guarantee implementation of the mitigation measure because it falls within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would likely cause elements of the roadway system that were not previously addressed in the 1994 LRDP EIR to operate at levels that would exceed the campus' standards of significance. Transportation and

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circulation mitigation measures identified in the 1994 LRDP EIR would be updated in the next LRDP EIR to mitigate these new exceedances. While growth through 2014-15 is not anticipated to result in any new cumulative transportation and circulation impacts different in character from those already assessed in the 1994 LRDP EIR, the campus will reexamine potential cumulative transportation and circulation impacts and any new mitigation measures that may be required during the LRDP update process.

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance After/With Mitigation
4.3-1	Increases in traffic volumes in relationship to the capacity of the future transportation network would result in level of service standard violations.	SU	SU
4.3-2	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.	S	LS
4.3-5	Growth in population associated with development allowed under the 1994 LRDP, as well as the campus TSM efforts, would increase demand for transit services.	S	LS
4.3-6	Growth in population associated with development allowed under the 1994 LRDP could increase parking demand, if corresponding improvements in mode share do not occur.	S	LS

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

Mitigation measures in the 1994 LRDP EIR, as updated by the 1997-98 Major Capital Improvement Projects SEIR (revised Mitigation Measure 4.3-1) and the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR (included a mitigation measure identified as 1994 LRDP EIR Mitigation Measure 4.3-1 (b) (f)), which are applicable to the proposed project and that will be required as part of project implementation include the following:

- LRDP EIR Mitigation Measure 4.3-1(a)** - *The campus shall continue to actively pursue a program of Transportation System Management (TSM) strategies to reduce reliance on travel to and from campus by private automobile, particularly single-occupant peak period travel. As described in the Setting section, the campus currently has an extensive TSM program. TSM strategies include the development of a comprehensive bicycle circulation network, including a bicycle/pedestrian precinct in core area of Central Campus; increased parking fees; transit planning and subsidies; carpool and vanpool matching service, and development and incentive program; campus shuttle systems, including shuttles to UC Davis Medical Center in Sacramento and UC Berkeley, public awareness programs, park and ride lot identification, and telecommuting.*
- LRDP EIR Mitigation Measure 4.3-1(b)** - *In cooperation with other responsible jurisdictions, the campus shall monitor a.m. and p.m. peak hour traffic operations at critical intersections in the campus vicinity on a regular basis (at least every three years). To the extent that TSM measures are successful, some roadway improvements may be avoided. Based upon the existing campus mode share and trip generation rates assumed in this analysis, the following physical improvements are intended to reduce the magnitude of this impact.*

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- (a) *Realign Old Davis Road as shown on the LRDP and reconstruct the intersection of Old Davis and California Avenue. Provide separate right and left turn lanes on the California Avenue approach and a separate left turn lane on the eastbound Old Davis Road approach and install a traffic signal. The realignment will extend to the intersection of Old Davis Road and A Street.*
 - (b) *At the intersection of I-80 Eastbound Ramps and Richards Boulevard, add an additional turn lane on the ramp approach to the intersection, to provide a left turn lane, combined right and left turn lane, and a right turn lane.*
 - (c) *Restripe the southbound Research Park Drive approach to the intersection with Richards Boulevard/Cowell Boulevard to provide a combined through/left turn lane and a separate exclusive right turn lane.*
 - (d) *Signalize the intersection of First and B Streets.*
 - (e) *Widen the eastbound Olive Drive approach to the intersection of Richards Boulevard and Olive Drive, to provide a right turn lane, combined right turn and through lane, and a left turn lane.*
 - (f) *The campus will monitor traffic volumes at the Hutchison Drive and Health Sciences Drive intersection every three years. If and when signalization is warranted based on traffic volumes, the campus will install a new traffic signal at this location.*
- **LRDP EIR Mitigation Measure 4.3-2** - *On a continuous basis, through implementation of the 1994 LRDP, the campus shall regularly monitor and document pedestrian and bicycle activity in the core area of the Central Campus. If the increased activity indicates a possible disruption in patterns of circulation, or congested or unsafe conditions, plans shall be developed and implemented to provide additional pedestrian and bicycle facilities, such as widenings, new facilities, separation of bicycles and pedestrians, extension of the bicycle / pedestrian precinct, and bicycle parking facilities, in response to this increased activity. The campus shall also continue its current studies of transit operations within the core area, to investigate the ability to minimize conflicts with transit vehicles without substantially reducing the desirability of transit services. The results of the studies shall be documented, and shall include specific measures to lessen transit conflicts, if any. If the studies show an increase in transit conflicts, some or all of the recommended measures to reduce such conflicts shall be implemented.*
 - **LRDP EIR Mitigation Measure 4.3-5** - *The campus shall continue to support public transportation services, and will work with the City and other agencies to implement increased transit services in response to evolving campus needs. Such increased services would include improved Unitrans terminal facilities to accommodate increased ridership, developing new Unitrans routes and schedules to more effectively serve travelers, and improved coordination with other transit providers and modes of travel.*
 - **LRDP EIR Mitigation Measure 4.3-6** - *The campus shall continue to actively pursue TSM strategies to reduce automobile travel and parking demand. The campus shall review individual projects under the 1994 LRDP to determine the adequacy of available parking. Additional parking shall be provided if it is determined that:*

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- (a) *the winter parking utilization rate is over 90 percent in the Central Campus, Medical Sciences Complex, or major facilities on the West and South Campus;*
- (b) *the project would eliminate existing parking and increase the projected utilization rate by more than 85 percent without permitting adequate time (usually 24 months) to implement a parking solution; or*
- (c) *the project would require additional parking due to projected population growth and increase the utilization rate over 90 percent, unless decreases in projected parking demand are expected to substantially counteract this trend.*

Mitigation measures listed above are incorporated into the proposed project, and the proposed project as mitigated is evaluated in the checklist below.

TRANSPORTATION/ CIRCULATION	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
a) Cause an increase in traffic that 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity on campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TRANSPORTATION/ CIRCULATION	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
g) Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Increased pedestrian and bicycle traffic in areas which may not have adequate facilities for these modes of travel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Increased conflict between bicyclists, pedestrians, and transit vehicles, causing increased congestion and safety problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Increased demand for transit services?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a,b) Vehicular access to the proposed Mathematical Sciences Building would be primarily from I-80, Old Davis Road, and California Avenue. Construction and operation of the proposed Mathematical Sciences Building would contribute traffic to these roadways, as well as other roadways in the region. The 1994 LRDP EIR identified that increases in traffic volumes under the 1994 LRDP in relationship to the capacity of the future transportation network would result in level of service violations (Impact 4.3-1).

The cumulative transportation effects of refined 1994 LRDP growth projections indicate that the following six intersections are anticipated to exceed 1994 LRDP EIR LOS standards through 2005-06 (DKS 2001):

- Richards Boulevard and First Street,
- Richards Boulevard and Olive Drive,
- Richards Boulevard and I-80 Eastbound Ramp,
- Richards Boulevard and Research Park Drive,
- California Avenue and Realigned Old Davis Road, and
- Health Sciences Drive and Hutchison Drive.

Mitigation Measures 4.3-1(b) [a] and [f], proposed in the 1994 LRDP EIR, as revised, would reduce cumulative on-campus impacts (at California Avenue/Realigned Old Davis Road and at Health Sciences Drive/Hutchison Drive) to less-than-significant levels. However, 1994 LRDP EIR Impact 4.3-1 was considered significant and unavoidable because the University could not

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guarantee the feasibility and/or implementation of intersection improvements (identified in Mitigation Measure 4.3-1) that fall within other jurisdictions to implement.

Construction

Construction of the proposed Mathematical Sciences Building is expected to occur from Summer 2003 to Winter 2004. Construction of the proposed project is anticipated to generate up to approximately 40 vehicle trips to and from the site per day. This would contribute a small volume of traffic over a relatively short-term period and would not result in a significant impact.

Operation

Operation of the proposed Mathematical Sciences Building would increase the campus population by approximately 120 employees. The Mathematical Sciences Building is consistent with the population projections and land designations identified in the 1994 LRDP, and therefore, it was included in the traffic analyses performed for the 1994 LRDP EIR and subsequent projects (most recently DKS 2001). Continued compliance with 1994 LRDP EIR Mitigation Measures 4.3-1(a) and (b) would ensure that no new impacts related to increased vehicle trips other than those previously analyzed in the 1994 LRDP EIR, as revised, would occur. However, 1994 LRDP EIR Impact 4.3-1 was considered significant and unavoidable because the University could not guarantee the feasibility and/or implementation of intersection improvements (identified in Mitigation Measure 4.3-1) that fall within other jurisdictions to implement. This impact was adequately analyzed in the 1994 LRDP EIR and fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and its certification of the 1994 LRDP EIR. As discussed in Appendix B, the impact associated with increases in traffic volumes is anticipated to remain significant and unavoidable through 2014-15. Given growth through 2014-15, intersections not previously addressed in the 1994 LRDP EIR could experience LOS exceedances, and portions of Mitigation Measure 4.3-1 would be updated to reflect this. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

- c) The proposed project would not result in a change to air traffic patterns or increase in air traffic levels. The UC Davis campus airport, located in the west campus, is the closest airport to the proposed Mathematical Sciences Building. The proposed Mathematical Sciences Building is not within the operations area of the airport and would not pose any restrictions to the existing operations of the airport. If the Hog Barn building were relocated to the west campus, it would be sited to fully comply with FAA standards. No impact would occur.
- d) Bike connections and pedestrian walkways included in the proposed project would be designed in accordance with American Association of State Highway and Transportation Officials guidelines and standards. The project would be designed for safe operations, including pedestrian and bicycle use. The project would establish a pedestrian walkway along the southern side of the proposed Mathematical Sciences Building, which would help separate pedestrians from bicycles and vehicles. Bikes would access the site from the east and west, and bicycle parking would be provided to the east and the west of the building. The existing vehicle access road located to the north of the Hog Barn facility will be modified as part of a separate project to accommodate the Boat House (see Figure 3). This modified road would provide vehicle access to the Mathematical Sciences Building. If the Hog Barn building were relocated to the central campus, southwest of the Silo complex, vehicle access would be provided from Parking Lot 43. Bicycle and pedestrian

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access would be provided from the south, east, or west. If the Hog Barn building were relocated to a site in the west campus, it would most likely be relocated to a site with existing access. The project would not introduce new safety hazards related to incompatible uses. Implementation of the proposed project would not result in any design features or incompatible uses that would result in a transportation safety hazard. No impact would occur.

- e) The location and design of the project would allow adequate emergency and general access by all modes. The project would not eliminate or impede access to any existing uses. Vehicular, automobile, bicycle, and pedestrian connections would continue to be provided from the project to adjacent uses and the overall campus transportation system. Fire and emergency access would be designed to meet campus standards. No impact would occur.
- f) The 10 parking spaces currently located on the project site to the north of the Hog Barn would be removed as part of the proposed project. The proposed project would establish limited vendor and service parking to the north of the proposed Mathematical Sciences Building.

The proposed Mathematical Sciences Building would contribute to parking demand on campus. Operation of the Mathematical Sciences Building would facilitate an increase in the on-campus population by approximately 120 employees. Given 1997 transportation mode split information, the project would generate demand for approximately 75 parking spaces (UC Davis 1997). The primary parking areas that would serve the proposed project include the South Entry Parking Structure (to the south), south entry surface Parking Lot 1 (to the south), and Parking Lots 47 and 47a (to the west). The South Entry Parking structure, with 698 permit parking spaces, operated at 52 percent of capacity in winter 2002 (winter represents a period of high parking demand). Parking Lot 1, with 697 permit/visitor parking spaces, operated at 55 percent of capacity. Parking Lots 47 and 47a, with a total of 827 spaces, operated at 100 and 99 percent of their capacities. Although Parking Lots 47 and 47a offer limited available parking, there is adequate parking capacity in the nearby south entry area to adequately accommodate the proposed project.

If the Hog Barn building were relocated to the central campus, vendor and service parking would be provided in Parking Lot 43. If the campus decides to relocate the Hog Barn building to a site in the west campus, the building would most likely be relocated near existing development. In addition, since the building would be reused for field support and storage space, the west campus relocation alternative would involve a low concentration of people. Therefore, no new parking would be required.

The 1994 LRDP EIR identified that population growth associated with development of the 1994 LRDP could increase parking demand (1994 LRDP EIR Impact 4.3-6). Mitigation Measure 4.3-6, incorporated into the proposed project, states that the campus will provide additional parking in the central campus when the overall winter parking utilization rate is over 90 percent. Central campus parking has an overall utilization rate of approximately 84 percent (UC Davis 2001b). Continued compliance with Mitigation Measure 4.3-6 would ensure the impact on parking capacity would be less-than-significant.

- g) The campus and City of Davis have encouraged bicycle travel through various programs and facilities. In addition, the campus and the City have been cooperating in a joint TSM effort to maintain and improve the existing non-automotive mode share. Among the strategies being used

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to reduce single-occupancy automobile trips are the establishment of a comprehensive bicycle and pedestrian circulation network; implementation of parking fees; transit planning and subsidies; promotion of carpool, vanpool, and park and ride; rideshare programs and incentives; operation of shuttle bus systems; encouragement of telecommuting; and institution of public awareness programs. The proposed project would not conflict with any of these strategies or other applicable policies, plans, or programs supporting alternative transportation. Therefore, no impact would occur.

- h) Pedestrian and bicycle traffic to and from the Mathematical Sciences Building would be served by adequate facilities. The project would establish a pedestrian walkway along the southern side of the proposed Mathematical Sciences Building that would provide access to and from the east and west. Bikes would access the site from the east and west, and bicycle parking would be provided on the east and west sides of the building. In addition, 1994 LRDP EIR Mitigation Measure 4.3-2, incorporated into the proposed project, identifies strategies for providing adequate pedestrian and bicycle facilities. With continued compliance with Mitigation Measure 4.3-2, this impact would be less-than-significant.
- i) The proposed project would include adequate design measures to safely accommodate pedestrian and bicycle traffic. Transit vehicles would not be accommodated on or immediately adjacent to the project site. The project would establish a pedestrian walkway along the southern side of the proposed Mathematical Sciences Building, which would help separate pedestrians from bicycles and vehicles. Bikes would access the site from existing bicycle paths located to the east and west, and bicycle parking would be provided on the east and west sides of the building. As a component of the 1994 LRDP, this project would cumulatively contribute to increased conflicts between bicyclists, pedestrians, and transit vehicles occurring in the core area of the central campus (Impact 4.3-2). To reduce these conflicts, 1994 LRDP EIR Mitigation Measure 4.3-2, incorporated into the proposed project, would ensure adequate pedestrian and bicycle facilities are developed and transit conflicts are reduced. With continued compliance with mitigation measure 4.3-2, this impact would be less-than-significant.
- j) The campus has implemented several measures to support public transportation services, such as discounted transit passes, subsidized services, expanded peak service, and additional buses on existing routes. The proposed project, which would add approximately 120 employees to the campus population, would generate demand for transit service, but the campus anticipates that this demand would be adequately served by the existing and planned expansions of public transportation services on campus. Increased transit demand caused by cumulative growth from the 1994 LRDP was identified in the 1994 LRDP EIR as a significant impact (Impact 4.3-5). This impact would be mitigated to a less-than-significant level through continued implementation of Mitigation Measure 4.3-5, incorporated as part of this project, which provides for transit improvements to meet future demand for services.
- k) Standards of significance for transportation/circulation impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the transportation/traffic questions in the current Environmental Checklist. As discussed above, with the incorporation of relevant 1994 LRDP EIR Mitigation Measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to transportation/circulation that were not previously analyzed in the 1994 LRDP EIR.

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Summary

Mitigation measures 4.3-1, 4.3-2, 4.3-5, and 4.3-6 from the 1994 LRDP EIR, as updated and revised, are incorporated into the proposed project. The proposed project would not result in new or significant transportation and circulation impacts that have not already been adequately assessed in the 1994 LRDP EIR.

5. NOISE

Background

The primary source of noise on- and off- campus is vehicle noise from roads and highways (I-80, SR 113, and local and regional roads), and freight and Amtrak trains using the Union Pacific (formerly Southern Pacific) railroad line. Aviation traffic, originating in the local area from the University Airport and Yolo County Airport, also adds to the ambient noise levels.

The Day-night Sound Level (L_{dn}) is a standard measure of noise impacts. This measure describes a receptor's cumulative noise exposure from all noise levels over a 24-hour period (values for noise levels between 10 PM and 7 AM are weighted to account for nighttime sensitivity). The 1994 LRDP EIR identified that 1993 noise levels modeled along local and regional roadways ranged from as low as 56 L_{dn} along County Road 32 at Russell Ranch to 76 L_{dn} at 100 feet from the centerline of I-80 between SR 113 and Russell Boulevard. Measurements of sound levels taken from acoustical studies performed between 1987 and 1993 indicated higher measured noise levels were generally near busy roadways or sports fields (while in use).

The proposed project site is within the 60-65 Community Noise Equivalent Level (CNEL) contour shown on the 1987 City of Davis General Plan 2010 noise level projection map, included as Figure 4.4-6 of the 1994 LRDP EIR. The noise sources creating this contour are primarily SR 113 and I-80. However, noise levels in the vicinity of the proposed project site may be higher as a result of noise generated by cooling equipment used at the adjacent Crocker Nuclear Laboratory. The 1994 LRDP EIR used the State of California General Plan land use noise compatibility guidelines to evaluate land use/noise compatibility for proposed land uses on campus. These guidelines are provided in Figure 4.4-1 of the 1994 LRDP EIR and indicate that office buildings (similar to the proposed project) are generally acceptable within noise contours up to 70 CNEL.

1994 LRDP EIR Standards of Significance

For the 1994 LRDP EIR, the State of California, Solano County, Yolo County, City of Davis, and the UC CEQA noise elements and/or guidelines were reviewed. The State of California and the UC CEQA noise guidelines do not have specific exterior noise levels, standards or laws. The only numerical guidance that exists is the State of California published general plan guidelines for preparing county and city General Plan Noise Elements. In the absence of other numerical guidance for determining significance, these State of California general plan guidelines are used as the standards of significance for noise impacts on the campus. Solano County, Yolo County, and the City of Davis general plan guidelines and ordinances are used as the standards of significance for noise impacts within Solano County, Yolo County, and the City of Davis jurisdictions, respectively. The environmental analysis in the 1994 LRDP EIR considered a noise impact significant if campus or regional growth would:

- cause substantial construction-related short-term noise level increases on the campus, in Yolo County or in Solano County that would disturb or interfere with nearby noise-sensitive uses or exceed the City of Davis Noise Ordinance for receptors in the City of Davis. Such noise-sensitive uses include off-campus residences, campus housing, and high and low density academic and administrative facilities; or

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- substantially increase the ambient noise levels for adjoining areas by 5 dBA during project operation, or cause noise levels to exceed normally acceptable levels as defined by the State of California General Plan Noise Element guidelines for receptors on the campus, Solano County General Plan guidelines for receptors off-campus within Solano County, Yolo County General Plan guidelines for receptors off-campus within Yolo County, City of Davis General Plan guidelines for receptors off-campus within Davis, or Cal OSHA standards.

Generally, construction-related short-term noise level effects on less noise-sensitive uses, such as teaching/research fields, support services, athletic facilities, open space areas, parking lots, and commercial areas, were not considered significant because construction noise is temporary and these less sensitive activities can continue with minimal disturbance.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Significant noise-related impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures, as identified in the 1994 LRDP EIR, are also presented in the table. Impacts of campus growth through year 2005-06 on noise were addressed in Section 4.4 of the 1994 LRDP EIR. Cumulative noise impacts were reevaluated in the 1997-98 Major Capital Improvement Projects SEIR but no changes were made to the 1994 LRDP EIR impacts or mitigation measures (Section 8 of the Draft Supplemental 1997-98 Major Capital Improvement Projects SEIR). The proposed project is within the scope of the analysis presented in the 1994 LRDP EIR as reevaluated in the 1997-98 SEIR. Please note that cumulative regional impact 4.4-4 included mitigation measures to reduce the impact to a less-than-significant level. However, this impact was identified as significant and unavoidable because the University of California could not guarantee implementation of 1994 LRDP EIR Mitigation Measure 4.4-4(c), which is not within the jurisdiction of the University to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would increase cumulative noise levels. While this growth is not anticipated to result in any new cumulative noise impacts different in character from those already assessed in the 1994 LRDP EIR, the campus will reexamine potential cumulative noise impacts and any new mitigation measures that may be required during the LRDP update process.

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LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.4-1	Development allowed under the 1994 LRDP would cause temporary increases in indoor and outdoor noise levels due to demolition, earthmoving and general construction activities.	S	LS
4.4-3	Occupants in structures developed under the 1994 LRDP could be exposed to significant noise levels from traffic, railroad, or other sources.	S	LS
4.4-4	Development allowed under the 1994 LRDP, in conjunction with cumulative growth in the Davis area, would result in increased traffic and other noise sources which could expose people and structures on- and off-campus to significant cumulative noise levels.	SU	SU

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

Mitigation measures in the LRDP EIR that are applicable to the proposed project and will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.4-1** - *For projects determined to have the potential to significantly affect nearby sensitive receptors, the campus shall include in all construction contracts one or more of the following noise reduction measures:*
 - (a) *Construction activities that would impact sensitive receptors in the City of Davis and campus residences shall be limited to the hours between 7:00 A.M. and 7:00 P.M. on weekdays and 8:00 A.M. to 8:00 P.M. on weekends;*
 - (b) *Stationary equipment shall be placed to direct emitted noise away from sensitive noise receptors or placed within a noise attenuating structure;*
 - (c) *If feasible, stockpiling and vehicle staging areas shall be located at least 100 feet from occupied academic, administrative, and residential areas;*
 - (d) *The loudest construction activities, such as demolition, shall be scheduled, if feasible, during summer, Thanksgiving, winter, and spring breaks when fewer people would be disturbed by construction noise;*
 - (e) *Potentially affected academic, administrative, and residential areas shall be informed by letter a week before the start of each construction, demolition, or grading operation; and*
 - (f) *Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise. Significant noise-generating construction equipment shall be shielded by noise-attenuating buffers such as structures or truck trailers when within 100 feet of occupied academic, administrative, and residential areas.*

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- **LRDP EIR Mitigation Measure 4.4-3(a)** - Prior to final project approval, the Campus shall evaluate each project proposed under the 1994 LRDP for potential exposure to noise levels exceeding 60 L_{dn} .
- **LRDP EIR Mitigation Measure 4.4-3(b)** - If individual projects would be exposed to noise levels between 60 L_{dn} and 70 L_{dn} , the Campus shall undertake, and implement the recommendations of, a detailed analysis of noise reduction features necessary to achieve an interior noise level of 45 L_{dn} . It is anticipated that conventional construction, but with closed windows and fresh air supply systems or air conditioning, would normally achieve the necessary noise attenuation.
- **LRDP EIR Mitigation Measure 4.4-4(a)** - The campus shall evaluate each project proposed under the 1994 LRDP for its potential to create, or contribute to, noise levels which would exceed State of California general plan guidelines on campus, Solano County general plan guidelines within Solano County, Yolo County general plan guidelines within Yolo County, City of Davis general plan guidelines within Davis, or Cal OSHA standards.
- **LRDP EIR Mitigation Measure 4.4-4(b)** - Implement Mitigation Measure 4.4-3 (a) and (b).
- **LRDP EIR Mitigation Measure 4.4-4(c)**
 - (i) The Noise Element of the City of Davis General Plan includes land use noise compatibility standards, as depicted in Figure 4.4-3. It is within the jurisdiction of the City of Davis to implement the policies and standards found in the Noise Element.
 - (ii) The Noise Element of the Yolo County General Plan includes land use noise compatibility standards, as depicted in Figure 4.4-2. It is within the jurisdiction of Yolo County to implement the policies and standards found in the Noise Element.
 - (iii) The Noise Element of the Solano County General Plan includes land use noise compatibility standards, as depicted in Figure 4.4-4. It is within the jurisdiction of Solano County to implement the policies and standards found in the Noise Element.

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

NOISE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable 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"/>

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NOISE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project result in:					
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a,c,d) Construction

The 1994 LRDP EIR identified that development under the 1994 LRDP would cause temporary increases in indoor and outdoor noise levels due to construction activities (Impact 4.4-1). Noise generated at the proposed project site during construction would take place using standard construction equipment and practices. Noise producing activities are expected to occur during demolition, site grading, earthmoving, foundation excavation, concrete pumping, framing, and finishing of the proposed building. Pile driving is not anticipated to take place as part of the proposed project. The project site would be located approximately 50 feet east of Engineering Unit 3, approximately 75 feet south of the Crocker Nuclear Laboratory, and approximately 50 feet north of Academic Surge. As described on page 4.4-20 of the 1994 LRDP Draft EIR:

Construction activities may cause noise levels to exceed 60 CNEL [Community Noise Equivalent Level] temporarily when conducted close to existing or planned sensitive areas. Construction equipment and operations would generate noise levels of about 80 to 85 dBA at a distance of 50 feet from one individual major noise source, decreasing by about 6 dBA for every

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doubling of the distance and also depending on the type of noise control on the construction equipment. For example, at a distance of 100 feet from three major noise sources (a tractor, backhoe, and truck) noise levels would be about 74 to 86 dBA, at 200 feet 68 to 80 dBA, at 400 feet 62 to 74 dBA, and at 800 feet 56 to 68 dBA. Noise levels would be lower for a receptor when there is not a direct line-of-sight between the noise source and the receptor. A large portion of construction activity would take place at distances greater than 800 feet from existing sensitive areas and may not be heard above the ambient noise level. Interior noise levels would be 10 to 20 dBA lower depending on whether windows are open or closed and the acoustical properties of the buildings.

Construction activities associated with the proposed project would result in temporary short-term increases in existing noise levels, which could adversely affect adjacent academic uses. Compliance with the 1994 LRDP EIR Mitigation Measure 4.4-1 (a) through (f) would be required as part of the proposed project and would reduce construction noise impacts to less-than-significant levels. In compliance with this measure, the removal of existing paving (a construction activity that would generate substantial noise) is scheduled to take place during the summer of 2003. No further mitigation is required.

Operation

The proposed project involves the operation of a building designed to accommodate faculty and staff offices, dry research areas and labs, and seminars. Figure 4.4-6 of the 1994 LRDP EIR shows that the proposed Mathematical Sciences Building site is within the 60 and 65 CNEL road and highway noise contours projected for 2010, as shown in the 1987 City of Davis General Plan. The noise sources creating this contour are primarily SR 113 and I-80. In compliance with 1994 LRDP EIR Mitigation Measure 4.4-3(a), the campus monitored noise levels at the proposed project site to determine the project's potential for exposure to noise levels exceeding 60 L_{dn} . Noise levels measured at the proposed project site in January 2002 ranged from 57 to 66 dBA (Oatman 2002). The State of California General Plan land use noise compatibility guidelines (provided in Figure 4.4-1 of the 1994 LRDP EIR) indicate that office buildings (similar to the proposed project) are generally acceptable within noise contours up to 70 CNEL. However, noise levels in the vicinity of the proposed project site are slightly higher than other building sites on campus as a result of noise generated by the adjacent Crocker Nuclear Laboratory. In compliance with 1994 LRDP EIR Mitigation Measure 4.4-3(b), interior noise in the proposed building would be reduced to 45 L_{dn} . Although not necessary to reduce interior noise levels to 45 L_{dn} , the project may retrofit or replace the existing enclosure around the Crocker Nuclear Laboratory's cooling tower to further reduce interior noise levels as well as to reduce exterior noise levels.

The Mathematical Sciences Building would generate noise associated with the use of outdoor gathering space, generation of increased traffic, and the building's mechanical systems. As described on page 4.4-25 of the 1994 LRDP Draft EIR:

The proposed 1994 LRDP would result in various new stationary and operational noise sources. Proposed development could result in noise being produced by lawn maintenance equipment, air conditioners, recreational activities, agricultural operations, building mechanical systems, chillers, and compressors.

Resulting noise levels are anticipated to increase above ambient levels, but not enough to exceed significant levels on the campus, in Yolo County, in Solano County, or in the City of Davis.

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The 1994 LRDP EIR concluded that cumulative growth under the 1994 LRDP would result in increased traffic and other noise sources that could expose people to significant noise levels (Impact 4.4-4). Although continued implementation of 1994 LRDP EIR Mitigation Measures 4.4-4 (a) through (c) would reduce the magnitude of this cumulative impact, the impact was considered significant and unavoidable because Mitigation Measure 4.4-4 (c) falls outside the University of California's jurisdiction to enforce and monitor. The proposed project would contribute to, but not exceed, increased noise levels identified under the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

- b) Operation of the proposed project and most construction activities associated with the project are not expected to produce any groundborne vibration beyond the perimeter of the site. Removal of existing paving on the project site could result in groundborne vibration extending to adjacent uses. In compliance with 1994 LRDP EIR Mitigation Measure 4.4-1, removal of existing paving is scheduled to take place during the summer of 2003 (when less people are on campus) and potentially affected occupants of nearby buildings would be given notice about proposed construction activities. Therefore, this impact would be reduced to a less-than-significant level.
- e,f) The project is not located within the campus airport noise contours identified in the 1994 LRDP EIR. No impact would occur.
- g) Standards of significance for noise impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the noise questions in the current Environmental Checklist. As discussed above, with the implementation of 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to noise that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.4-1, 4.4-3(a), and 4.4-4 (a) through (c) are incorporated as part of the proposed project. The proposed project would not result in any new or significant noise impacts that have not already been adequately addressed in the 1994 LRDP EIR.

6. AIR QUALITY

Background

The campus is located within the Yolo-Solano Air Quality Management District (YSAQMD), which is located within the boundaries of the Sacramento Valley Air Basin. As described on pages 4.5-6 and 4.5-7 of the 1994 LRDP EIR, the YSAQMD is in nonattainment of the state and federal standards for ozone (O₃) and of the standards for particulate matter (PM₁₀). The YSAQMD is in attainment of the state and federal standards for carbon monoxide (CO).

Recently, the Environmental Protection Agency (EPA) added standards in recognition of increased concern over particulate matter 2.5 microns (PM_{2.5}) or less in diameter. According to information provided by EPA, designations for the new PM_{2.5} standards by the EPA will begin in the year 2002 with attainment plans due by 2005 for regions that violate the standards. PM_{2.5} measurements have been conducted as of February 1999, but it is too soon to determine if the YSAQMD is in attainment under the new federal PM_{2.5} standards. The California Air Resources Board (CARB) and local air districts in California have developed a PM_{2.5} monitoring network plan, but to date, no data has been collected.

The YSAQMD and the CARB maintain several monitoring sites in Yolo County. Data from a monitoring site on the campus (gathered from 1995-97) showed violations of state ozone standards in each of the three years reported. Based on results of computer modeling of 10 congested intersections in the vicinity of the campus, seven of the intersections indicated CO concentrations above state standards.

The major odor emission source on campus is animal waste associated with confined animal facilities. Other odor sources on campus include the wastewater treatment plant, motor vehicles, and the campus landfill.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to air quality significant if campus or regional growth would:

- cause or contribute substantially to existing or projected violations of state or federal criteria air pollutant standards;
- result in exposure of sensitive receptors to substantial pollutant concentrations; or
- result in exposure of sensitive receptors to unpleasant odors.

For the purposes of the 1994 LRDP EIR, a "substantial contribution" to the regional pollutant load was defined as the new production of 550 pounds per day (lbs/day) of CO, and/or 82 lbs/day of ROC, NO_x, SO_x, and PM₁₀.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented in the table. Impact 4.5-1 would either be less than significant after mitigation or remain significant and unavoidable depending on the scale of the project and the project's proximity to other construction projects. Impacts of campus growth through 2005-06 on air quality were evaluated in Section 4.5 (Air Quality) of the 1994 LRDP Draft EIR. Cumulative air quality impacts were reevaluated in Section 4.2 of the WWTP Replacement Project Draft EIR and in Section 8 of the 1997-98 Major Capital Improvement Projects Draft SEIR. However, no changes were made to impacts or mitigation measures identified in the 1994 LRDP EIR. Appendix A of this Initial Study discusses revisions to the 1994 LRDP EIR in further detail. The proposed project is within the scope of the air quality analysis presented in the 1994 LRDP EIR and reevaluated in these subsequent documents. Please note that cumulative regional impact 4.5-6 included mitigation measures to reduce the impact to a less-than-significant level. However, this impact was identified as significant and unavoidable because the University of California cannot guarantee the implementation of the mitigation measures that fall within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would contribute to air quality impacts. However, this growth is not anticipated to result in any new cumulative air quality impacts different in character from those already assessed in the 1994 LRDP EIR. The validity of conclusions drawn regarding Toxic Air Contaminants will be reassessed during the LRDP update process. The campus will also reexamine other potential air quality impacts and any new mitigation measures that may be required during the LRDP update process.

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.5-1	Construction activities as part of development allowed under the 1994 LRDP could result in short-term generation of dust (PM ₁₀).	SU	LS/SU
4.5-3	Development allowed under the 1994 LRDP would generate increased levels of CO, O ₃ precursors (ROC and NO _x), visibility reducing particles and PM ₁₀ emissions.	SU	SU
4.5-6	Development allowed under the 1994 LRDP, in conjunction with cumulative development in the region, would increase criteria pollutant emissions.	SU	SU

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

Mitigation measures in the LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.5-1** – *The campus shall include in all construction contracts the following measures to reduce fugitive dust impacts.*

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- (a) *All unpaved construction areas shall be sprinkled with water or other acceptable Yolo-Solano AQMD dust control agents during dust generating activities to reduce dust emissions. Additional watering or acceptable APCD [air pollution control district] dust control agents shall be applied during dry weather or windy days until dust emissions are not visible.*
 - (b) *Trucks hauling dirt and debris shall be covered to reduce wind blown dust and spills.*
 - (c) *On dry days, dirt or debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction related dirt in dry weather.*
 - (d) *On-site stockpiles of excavated material shall be covered or watered.*
- **LRDP EIR Mitigation Measure 4.5-3(a)** – *Implement Mitigation Measures 4.3-1 and 4.3-5. (See the Transportation/Circulation section of this document for these mitigation measures.)*
 - **LRDP EIR Mitigation Measure 4.5-3(b)** – *The campus shall acquire permits for stationary and area sources as required by the Yolo-Solano Air Quality Management District.*
 - **LRDP EIR Mitigation Measure 4.5-6(a)** – *Implement Mitigation Measures 4.5-3 (a) and (b).*
 - **LRDP EIR Mitigation Measure 4.5-6(b)** – *The Sacramento Air Basin includes a large number of jurisdictions, including the greater Sacramento metropolitan area. In the Basin, air quality is regulated by the Sacramento Metropolitan Air Quality Management District, YSAQMD, and a number of other Air Pollution Control Districts. Pursuant to rules, regulations, and policies of those AQMDs and APCDs, as well as adopted general plans throughout the Basin, it is within the jurisdiction of each local government or district to take actions to ensure compliance with the federal Clean Air Act and the California Clean Air Act.*

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

AIR QUALITY		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?					
	During Construction:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	During Operation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 that 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"/>
f) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) As required by the California Clean Air Act, the YSAQMD has published an Air Quality Attainment Plan (AQAP) in order to attempt to bring the YSAQMD into compliance with the federal and state ambient air quality standards. Because the YSAQMD is not in compliance with ozone standards, the AQAP addresses emissions for ozone precursors (volatile organic compounds and nitrogen oxides). The YSAQMD is also in non-attainment for state standards regarding PM₁₀, but AQAPs are currently not required to address this pollutant.

As discussed on page 4.5-7 of the 1994 LRDP Draft EIR with updated information on page 5.7-3 of the 1997-98 Major Capital Improvement Projects Draft SEIR, a Sacramento Area Regional Ozone Attainment Plan was submitted to the EPA in November 1994. The 1994 attainment plan has been reviewed and approved. This plan was required to demonstrate that the federal ozone standard would be achieved in the Sacramento region by 1999. Attainment could not be demonstrated for the Sacramento region, and a new plan to attain the standard by 2005 must be submitted in accordance with the federal Clean Air Act. This plan will not contain additional measures that would apply to the proposed project. The proposed project would not conflict with or obstruct implementation of the AQAP. No impact would occur.

b,c,d) Construction

The proposed project would include grading, trenching, and excavation activities. As described on page 4.5-18 of the 1994 LRDP Draft EIR:

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Construction-related activities would generate “fugitive dust” from earthmoving, excavation, demolition, and grading. The term “fugitive dust” refers to particulate matter emitted from an open area (i.e. not through a stack or an exhaust vent), due to human activities or by the forces of wind acting on exposed material such as soil or storage piles. Particulate (dust) emissions would vary with the level and type of activity, silt content and moisture of the soil and prevailing weather.

Sensitive receptors on campus (defined on page 4.5-16 of the 1994 LRDP EIR) include student and family housing complexes, day care centers, and recreational uses. The closest sensitive receptor in the vicinity of the Mathematical Sciences Building site is the Leach Hall student housing complex, located over 600 feet to the west. Fugitive dust generated by project-related construction activities could cause violations of the state and federal PM₁₀ standards at times, and would contribute to significant PM₁₀ emissions previously identified in the 1994 LRDP EIR (Impact 4.5-1). This construction impact would be temporary and short-term. As indicated by the 1994 LRDP EIR on page 4.5-18, the region is in non-attainment for PM₁₀, and the YSAQMD would therefore require the implementation of dust suppression techniques to minimize dust emissions during construction. Implementation of 1994 LRDP EIR Mitigation Measures 4.5-1 (a) through (d), included in the proposed project, would minimize project PM₁₀ emissions to a less-than-significant level and would ensure that construction activities associated with the proposed project would not result in new impacts relating to construction air quality beyond those previously identified in the 1994 LRDP EIR.

The 1994 LRDP EIR determined that construction activities would also result in short-term emissions of ozone (O₃) precursors. These precursors specifically include Reactive Organic Compounds (ROC) from paint, and ROC and nitrogen oxides (NOx) exhaust emissions from powered construction equipment and motor vehicles. Construction of the proposed project is anticipated to generate up to approximately 40 vehicle trips to and from the site per day. This would contribute a small volume of traffic over a relatively short-term period (construction is anticipated to take approximately 17 months) and would not result in a significant impact. Although the Sacramento Valley Air Basin (SVAB), which includes the project site, is in non-attainment of both federal and state O₃ standards, the construction vehicle trips generated by the proposed project would occur during a limited period of time and the long-term impacts of the temporary increase in ROC and NOx would be negligible. This impact is further discussed on page 4.5-19 of the 1994 LRDP Draft EIR:

Given the potential for construction under the 1994 LRDP and the fact that O₃ formation is dependent on a complex interaction of atmospheric and meteorological factors over a relatively large physical area (such as an air basin), short-term emissions of O₃ precursors would not be expected to lead to a violation of ambient air quality standards for O₃ in the campus vicinity. While these emissions would contribute (temporarily) to the non-attainment status of Yolo County for O₃, they would likely represent less than the stationary source emission thresholds and, thus, are considered less-than-significant.

Operation

Operation of the proposed Mathematical Sciences Building would increase the campus population by approximately 120 employees. Increased vehicle trips associated with these employees would contribute to increased levels of CO. The 1994 LRDP EIR identified that development under the 1994 LRDP EIR would increase levels of CO, ozone precursors (NOx, ROC), visibility-reducing particles, and particulate matter (Impact 4.5-3). The proposed project would incrementally

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contribute to, but would not exceed, this impact previously identified and adequately addressed in the 1994 LRDP EIR. Implementation of 1994 LRDP EIR Mitigation Measures 4.5-3 (a) and (b), included in the proposed project, would reduce criteria pollutant emissions. However, because criteria pollutant emissions could exceed established significance thresholds and because methods are limited for determining the increase in levels of visibility reducing particles, the impact would remain significant and unavoidable. This significant and unavoidable impact was addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR and no further mitigation is required. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR recognized that criteria pollutant emissions of the 1994 LRDP, in conjunction with those of cumulative development in the region, would result in a significant and unavoidable impact (Impact 4.5-6). Although 1994 LRDP Mitigation Measures 4.5-6 (a) and (b) would be implemented as part of the proposed project to reduce the magnitude of this impact, this impact would remain significant and unavoidable because implementation of Mitigation Measure 4.5-6 (b) is not within the jurisdiction of the University to enforce and monitor. This impact was adequately analyzed in the 1994 LRDP EIR and fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP EIR and certification of the 1994 LRDP EIR. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

In addition, the 1994 LRDP EIR concluded that development under the 1994 LRDP in conjunction with cumulative development in the region would increase CO concentrations at intersections. This impact was considered less-than-significant because CO is an attainment pollutant in the SVAB and future CO emissions would continue to be lower as a result of new regulations requiring the use of cleaner burning fuels and improved engine efficiencies. No mitigation was required. The proposed project would contribute to, but would not exceed, increased CO emissions identified under the 1994 LRDP because it is consistent with approved development. Therefore, this impact would remain less-than-significant. As discussed in Appendix B, this impact is anticipated to remain less-than-significant through 2014-15.

- e) The proposed project would not generate additional objectionable odors on campus and would not expose users to existing objectionable odors. No impact would occur.
- f) Standards of significance for air quality impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the air quality questions in the current Environmental Checklist. As discussed above, with the implementation of applicable 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to air quality that were not previously analyzed in the 1994 LRDP EIR.

Summary

The proposed project would incorporate 1994 LRDP EIR Mitigation Measures 4.5-1, 4.5-3 (a) and (b), and 4.5-6 (a) and (b). The project would not result in new or significant air quality impacts that have not already been adequately assessed in the 1994 LRDP EIR.

7. HAZARDS AND HAZARDOUS MATERIALS

Background

UC Davis uses many materials, some of which are considered hazardous, during the course of daily operations. Such hazardous materials include many chemical reagents, solvents, radioisotopes, fuels, paints, cleansers, pesticides, herbicides, and biohazards that are used in activities such as laboratory research, building and grounds maintenance, vehicle maintenance, agricultural applications, fine arts, and clinical veterinary medicine. The use of hazardous materials on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes. Hazardous wastes are generated at campus locations where hazardous materials are used, including research and teaching laboratories, maintenance facilities, agricultural operations, art studios, and the health sciences and veterinary medicine complexes. Research and teaching activities produce most of the hazardous waste generated annually by the campus. Because campus hazardous materials use is primarily associated with teaching and research laboratory activities, the 1994 LRDP EIR assumed that activities involving the use of hazardous materials would increase in proportion to the increase in instruction and research space, an increase of about 41 percent. This estimate is considered conservative (on the high side) because the campus population is anticipated to increase by a smaller percentage, or 26 percent, from 1993 to 2005-06.

Since adoption of the 1994 LRDP, the campus has implemented several 1994 LRDP EIR mitigation measures identified to mitigate the use and generation of hazardous chemicals associated with campus growth. In conformance with 1994 LRDP EIR Mitigation Measures 4.6-2(b), 4.6-4(b), and 4.6-6(a), a new handling facility for campus hazardous wastes (the Environmental Services Facility) has been constructed and became fully operational in early 2000. The new facility currently operates at about 40 percent of its capacity. In conformance with Mitigation Measure 4.6-1 (a) (ii), Injury and Illness Prevention, Chemical Hygiene, and Emergency Action Plans have been developed for the campus since 1994. In conformance with Mitigation Measure 4.6-1(b) and (c), the campus established a Certified Unified Program Agency Self-Audit Program in 1995, a Chemical Inventory System in 1998, and a system for independent health and safety audits in 1995. In conformance with Mitigation Measure 4.6-23, the campus entered into an Agreement for Hazardous Materials Automatic Aid with other jurisdictions in the region in 1995 that provides UC Davis and all participating agencies with adequate resources to respond to a Level A hazardous materials incident.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to hazardous materials and/or public safety significant if campus or regional growth would:

- create a substantial potential health or safety hazard due to risk of upset (accidents);
- interfere with emergency response plans or emergency evacuation plans;
- involve the use, production, or disposal of materials in a manner that poses a hazard to people, or to animal or plant populations in the area affected;
- expose employees to working situations that exceed health standards; or
- violate applicable laws intended to protect human health and safety.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented. Impacts of campus growth through year 2005-06 related to hazardous materials are addressed in Section 4.6 (Hazardous Materials and Public Safety) of the 1994 LRDP Draft EIR. Cumulative hazardous materials and public safety impacts were reevaluated in the WWTP Replacement Project EIR (Chapter 4.3 of the WWTP Replacement Project Draft EIR), but no changes were made to the impacts, mitigation measures, or levels of significance identified in the 1994 LRDP EIR. Appendix A in this Initial Study summarizes updates and revisions to the 1994 LRDP EIR. The proposed project is within the scope of the hazardous materials and public safety analysis presented in the 1994 LRDP EIR, as reevaluated in the WWTP Replacement Project EIR. Please note that cumulative impacts 4.6-3, 4.6-4, and 4.6-23 include mitigation measures to reduce impacts to less-than-significant levels. However, these impacts were identified as significant and unavoidable because the University of California cannot guarantee implementation of mitigation measures that fall within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would likely increase hazardous materials use beyond that anticipated under the 1994 LRDP. However, this growth is not anticipated to result in any new cumulative hazards and hazardous materials impacts different in character from those already assessed in the 1994 LRDP EIR. Hazards and hazardous materials mitigation measures identified in the 1994 LRDP EIR will be updated in the next LRDP EIR to reflect current waste management practices. The campus will also reexamine potential cumulative hazard and hazardous materials impacts and any new mitigation measures that may be required during the LRDP update process.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.6-1 Implementation of the 1994 LRDP would lead to an increase in hazardous chemical use at UC Davis that could expose campus occupants to potential health or safety risks.	PS	LS
4.6-2 Implementation of the 1994 LRDP could lead to an increase in the generation of hazardous chemical waste at UC Davis that could expose campus occupants to potential health or safety risks.	PS	LS
4.6-3 Increased use of hazardous chemical materials related to cumulative development in the region would increase the number of people exposed to health hazards associated with such use.	SU	SU
4.6-4 Implementation of the 1994 LRDP, in conjunction with other development in the region that generates hazardous chemical waste, could place an additional load on hazardous waste management facilities.	SU	SU
4.6-16 Construction activities under the 1994 LRDP could expose campus occupants and construction workers to contaminated soil or groundwater.	PS	LS

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LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.6-17	Development of potential contaminated sites on campus as part of the 1994 LRDP, in combination with other, adjacent development, could pose cumulative health and safety threats to workers.	SU	SU
4.6-18	The demolition or renovation of buildings under the 1994 LRDP could expose campus occupants and construction workers to contaminated building materials.	PS	LS
4.6-22	Increased campus operations using hazardous materials resulting from development under the 1994 LRDP could exceed emergency response capabilities at UC Davis.	S	LS
4.6-23	The increased campus operations to be developed under the 1994 LRDP, in conjunction with anticipated growth in the City of Davis, could contribute to cumulative demand for emergency response capabilities in the Davis area.	SU	SU
4.6-24	Hazardous materials used at facilities developed under the 1994 LRDP may be inadvertently released to the sewer or disposed of with non-hazardous solid waste.	S	LS

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

Mitigation measures identified in the 1994 LRDP EIR, which are applicable to the proposed project and that will be required as part of project implementation, include the following:

- **1994 LRDP Mitigation Measure 4.6-1(a)** - *The campus shall strengthen programs to improve compliance with the laws and regulations applicable to the use of hazardous materials. Such efforts would include specific steps aimed at improving health and safety conditions by increasing the resources devoted to implementation of laws and regulations regarding the use of hazardous materials. This increase would support an improved, ongoing, satisfactory level of compliance. Specific actions would include, but would not be limited to, the following¹:*
 - (i) *Community Right-to-Know and Business Plan - Increasing the resources devoted to implementing Community Right-to-Know and Business Plan requirements, as needed, to supplement the existing program for the purpose of meeting current and future local, state, and federal data reporting requirements. This change would allow better tracking and reporting of non-radioactive chemical hazardous materials on campus, would provide critical information to on-campus and off-campus emergency response service providers in case of a chemical emergency, and would expand current safety training programs to minimize accident risks.*
 - (ii) *Injury and Illness Prevention, Chemical Hygiene, and Emergency Actions Plans - Increasing the resources and improving the mechanisms needed (1) to finish*

¹ Since 1994, Injury and Illness Prevention, Chemical Hygiene, and Emergency Action Plans have been developed for the campus.

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developing these plans, and (2) to assure that these plans are adequately implemented and maintained, including training and emergency planning.

- (iii) *Waste Minimization* - Establish the position of Waste Minimization Coordinator to update the existing hazardous waste minimization plan, to implement the revised plan, and to evaluate the feasibility of other waste minimization programs such as waste minimization through treatment and recycling.²
- **LRDP EIR Mitigation Measure 4.6-1(b)** - *The campus shall establish a self-audit mechanism and a reporting system to document the compliance status of campus departments and units.*³
 - **LRDP EIR Mitigation Measure 4.6-1(c)** - *Biennial health and safety audits shall be conducted by individuals independent of the campus.*
 - **LRDP EIR Mitigation Measure 4.6-2(d)** - *Implement Mitigation Measure 4.6-1(a), which would require the campus to create a Waste Minimization Coordinator position to implement the campus Hazardous Waste Minimization Plan.*
 - **LRDP EIR Mitigation Measure 4.6-3** - *Implement Mitigation Measures 4.6-1(a) through (c).*
 - **LRDP EIR Mitigation Measure 4.6-4(a)** - *The campus Waste Minimization Coordinator (to be established as part of mitigation measure 4.6-1(a)), shall update and implement existing hazardous waste minimization plan. The updated plan shall address hazardous waste generated by 1994 LRDP projects and shall specify feasible administrative and technical approaches to reduce the amount of hazardous waste generated on campus.*⁴
 - **LRDP EIR Mitigation Measure 4.6-16(a)** - *During the site selection process for each site to be developed under the 1994 LRDP, the campus shall determine the need to have the site and adjacent areas investigated for the presence of hazardous materials or wastes by completing a "due diligence checklist."*

If further investigation is warranted, the investigation shall be carried out by a Registered Environmental Assessor (i.e., a professional environmental scientist or engineer registered in California) or a registered engineer. The investigations shall be environmental audits, which shall include, at minimum, site inspections for hazardous materials, examination of historic records for evidence of hazardous materials use, interviews with campus personnel, and review of campus records for evidence of contamination.

For each site audit, the qualified person shall prepare a report detailing the results of the inspection and submit it to appropriate campus offices. The report preparer shall either certify that the site is free of hazards, recommend further investigations, or recommend preparing a site

² Due to recent regulatory changes and the nature of waste generated on campus, the campus has been exempt from the state's waste minimization plan requirements since July 2000 and currently implements a modified waste minimization plan.

³ The campus established a Chemical Inventory System in 1998 and a Certified Unified Program Agency Self-Audit Program in 1995.

⁴ Due to recent regulatory changes and the nature of waste generated on campus, the campus has been exempt from the state's waste minimization plan requirements since July 2000 and currently implements a modified waste minimization plan.

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mitigation plan. After reviewing and accepting the report, reviewing offices shall submit it to the Office of Resource Management and Planning (the office responsible for site selection and environmental review on campus) with their recommendations. The campus shall ensure that inspection reports are completed prior to excavation or construction at the development site.

- **LRDP EIR Mitigation Measure 4.6-17** – *Implement Mitigation Measures 4.6-16(a) through (c).*
- **LRDP EIR Mitigation Measure 4.6-18(a)** – *During the site selection process for each site to be developed under the 1994 LRDP, the Campus shall determine the need to have existing buildings on each site investigated for the presence of hazardous materials or wastes by completing a "due diligence checklist.*

If further investigation is warranted, the investigation shall be carried out by a Registered Environmental Assessor (i.e., a professional environmental scientist or engineer registered in California) or a registered engineer. The investigations shall be environmental audits, which shall include, at minimum, site inspections for hazardous materials, examination of historic records for evidence of hazardous materials use, interviews with campus personnel, and review of campus records for evidence of contamination..

For each site audit, the qualified person shall prepare a report detailing the results of the inspection and submit it to appropriate Campus offices. The report preparer shall either certify that the site is free of hazards, recommend further investigations, or recommend preparing a site mitigation plan. After reviewing and accepting the report, reviewing offices shall submit it to the Planning and Budget Office (the office responsible for site selection and environmental review on campus) with their recommendations. The Campus shall ensure that inspection reports are completed prior to excavation or construction at the development site.

- **LRDP EIR Mitigation Measure 4.6-18(b)** – *In the event that site inspections find evidence of chemical or radioactive contamination in buildings at sites to be developed, the Campus shall prepare a site remediation plan that shall (1) specify measures to be taken to protect workers and the public from exposure to potential site hazards and (2) certify that the proposed remediation measures would clean up the contaminants, dispose of the wastes, and protect public health in accordance with federal, state, and local requirements. Commencement of work in the areas of potential hazard shall not proceed until the site remediation plan has been completed. Depending on the nature of any contamination, appropriate governmental agencies shall be notified. Provisions of the site remediation plan would be adopted by the Campus as part of future projects.*
- **LRDP EIR Mitigation Measure 4.6-18 (c)** – *A site health and safety plan, in compliance with OSHA requirements, shall be developed by the Campus and in place prior to commencing work on any contaminated sites.*
- **LRDP EIR Mitigation Measure 4.6-22(a)** – *The campus emergency response team shall be adequately trained and equipped to respond to hazardous materials emergencies prior to occupancy of the first 1994 LRDP project approved that could require hazardous materials emergency response capabilities. The campus shall provide sufficient resources to respond to a Level A hazardous materials incident (the most hazardous level), in coordination with the City of Davis if necessary.*

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- **LRDP EIR Mitigation Measure 4.6-22(b)** – *The campus shall prepare (or update) safety planning documents in accordance with applicable laws, regulations, and campus policies prior to occupying facilities constructed under the 1994 LRDP. The campus shall implement safety training programs upon occupying each new building.*
- **LRDP EIR Mitigation Measure 4.6-22(c)** – *Departments and Principal Investigators shall prepare Injury and Illness Prevention Plans, Laboratory Chemical Hygiene Plans, and Emergency Action Plans for all new buildings, as necessary. These plans would be reviewed and approved by the campus for each department and each Principal Investigator or Laboratory Director to be located at any particular new building before the department or laboratory would be permitted to occupy the new space.*
- **LRDP EIR Mitigation Measure 4.6-22(d)** – *The campus shall address emergency planning and safety training for the occupants of new buildings constructed under the 1994 LRDP by assigning a Building Safety Coordinator for each building. These staff would coordinate emergency response planning and implementation efforts for the building and implement required Cal/OSHA regulations related to developing an evacuation plan. For example, emergency drills would be coordinated such that all of the building's occupants would participate at the same time, regardless of their departmental affiliation. The evacuation plan and emergency response plans would provide general guidelines and procedures to be followed during emergencies and disasters. The plans would address the removal of occupants and the establishment of temporary meeting areas in the event of an emergency. As part of implementing the plans, project occupants would be adequately trained to implement the plans as well as all other required safety procedures.*
- **LRDP EIR Mitigation Measure 4.6-22(e)** – *Implement Mitigation Measures 4.6-1(a) through (c).*
- **LRDP EIR Mitigation Measure 4.6-23** – *Implement Mitigation Measure 4.6-22(a).*
- **LRDP EIR Mitigation Measure 4.6-24(a)** – *The campus shall comply with the revised Waste Discharge Requirements, particularly the requirement to establish a Pretreatment Program.*
- **LRDP EIR Mitigation Measure 4.6-24(b)** – *The campus shall provide the resources needed for implementing a waste exclusion program.*

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/Program 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 of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>

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HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
i) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a,b) Site Contamination

The 1994 LRDP EIR identified the potential for soil or groundwater contamination (as a result of various campus activities) to be present in areas that could be developed under the 1994 LRDP (Impact 4.6-16). Construction of projects in such locations could expose campus occupants and construction workers to contaminated soil or groundwater as a result of past uses of the various sites. Exposure to hazardous materials in contaminated soil or groundwater could cause various short- or long-term health effects in persons exposed to the contamination. Work at locations that are contaminated with hazardous materials could pose adverse health and safety risks for workers or the public if the contaminants are not identified and properly managed. Figure 4.6-1 on page 4.6-28 of the 1994 LRDP Draft EIR identified on-campus locations requiring further investigation for soil and groundwater contamination.

The 1994 LRDP EIR identified that development of potentially contaminated sites on campus as part of the 1994 LRDP, in combination with other development in the area, could pose cumulative health and safety threats to workers and the public (Impact 4.6-17). Although 1994 LRDP EIR Mitigation Measure 4.6-17, incorporated as part of the proposed project, was identified to reduce the significance of this cumulative impact, the impact was considered significant and unavoidable because the University cannot guarantee that other jurisdictions in the area would enforce and monitor similar mitigation measures. This impact was adequately analyzed in the 1994 LRDP EIR and fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and its certification of the 1994 LRDP EIR. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR also identified that the demolition or renovation of buildings under the 1994 LRDP could expose campus occupants and construction workers to contaminated building materials, a potentially significant impact (Impact 4.6-18). The 1994 LRDP EIR considered the cumulative effect of demolition or renovation of buildings in the region a less-than-significant impact because of the stringent regulation of materials that could cause health and safety risks during demolition or renovation of buildings. As discussed in Appendix B, this impact is anticipated to remain less-than-significant through 2014-15, but will be reexamined during the LRDP update process.

Consistent with Mitigation Measure 4.6-16(a) and 4.6-18 (a), the campus conducted a Phase 1A Preliminary Site Assessment Due Diligence Report for the proposed project site, including the

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Hog Barn building. The study identified the following items of concern on the proposed project site that required further investigation (URS 2002): 1) suspect concentrations of persistent pesticides in the soil; 2) soil adjacent to a dry well may be impacted by previous discharges; 3) construction debris buried on the site should be excavated and properly disposed off-site; and 4) the Hog Barn building may contain asbestos-containing building materials.

In compliance with 1994 LRDP EIR Mitigation Measure 4.6-18(a), a site audit was conducted to evaluate these items, as well as to determine the level of lead in paint on the Hog Barn and in the surrounding soil. The results of the site audit and concluding recommendations were the following (ACC Environmental Consultants 2002a,b,c):

- 1) No detectable concentrations of common pesticides were reported in fifteen soil samples taken from the site, and one soil sample contained 4,4-DDE at a concentration just above the laboratory reporting limit. Soil on the project site does not contain persistent, organochlorine pesticides and meets criteria for offsite landfill disposal. No worker safety or soil disposal issues were identified.
- 2) Evidence of an existing dry well was not observed during a field visit, but downspouts and a connected sink drain that terminate below the ground were observed. The dry well was further identified and described during interviews with campus personnel. Further investigation is not warranted due to the apparent lack of significant pesticide use at the Hog Barn and the fact that the majority of water discharged to the dry well was storm water runoff from the building's roof.
- 3) Confirmation of the presence of buried construction debris can most cost-effectively be made by removing the concrete and trenching with a backhoe.
- 4) Asbestos was not detected in any friable building materials (materials that can be reduced to powder with hand pressure) on the Hog Barn, but it was detected or assumed in non-friable materials used in specific area roof patching and window glazing compounds. It was not recommended to remove these materials unless they are beyond repair, or if planned demolition or renovation activities would disturb the materials.
- 5) All of the samples of suspect paint from the Hog Barn building were reported to contain detectable amounts of lead, therefore OSHA special work practices must be implemented during disturbance of paint. Shallow soil (to a depth of approximately 12 inches) in proximity to the Hog Barn building contains paint particles with sufficient lead to qualify as hazardous waste. Additional soil characterization is recommended to determine the extent of contamination.

The above recommendations would be implemented as part of the proposed project. In addition, in compliance with 1994 LRDP EIR Mitigation Measure 4.6-18(b), a site remediation plan would be developed to specify measures to be taken to protect workers and the public from exposure to lead based paint, lead paint soil contamination, and asbestos containing materials. Therefore, the potential exposure of campus occupants and construction workers to contaminated soil, groundwater, or building materials would be reduced to a less-than-significant level.

Hazardous Materials Use - Construction and Operation

Construction of the proposed project would involve the use of various products that could contain materials classified as hazardous (including solvents, adhesives, cements, paints, cleaning agents, and degreasers). Fuels, such as gasoline and diesel, would also be used in heavy equipment and other construction vehicles. The use and storage of these products is subject to applicable hazardous materials regulations, as discussed on pages 4.6-4 through 4.6-7 and in Appendix E of the 1994 LRDP Draft EIR, and contract specifications would also contain specific provisions regarding the use of these products and compliance with applicable regulations and standards. Contract specifications would also require temporary surfaces be placed under contractor parking areas to protect soil and groundwater from contamination associated with inadvertent spills or leaks.

Operation of the proposed project would involve the use of small quantities of pesticides and herbicides in landscaping the project's landscaped grounds. However, use of pesticides and herbicides on campus is being reduced from past levels (Mezger 2001). Small quantities of household-type cleaners would also be used in building maintenance. The use of cleaning products containing hazardous chemical materials already occurs on campus, and the amounts associated with these uses would be similar to existing operation and maintenance activities.

Consistent with 1994 LRDP EIR Mitigation Measure 4.6-22(c), an Injury and Illness Prevention Plan and an Emergency Action Plan would be developed for the proposed facility. In addition, design and construction of the proposed project would conform to all applicable building codes and fire/life safety codes. The use, storage, and transport of hazardous materials as part of operation of the proposed project would be accomplished consistent with regulatory requirements, and the risk of upset would be minimal.

The 1994 LRDP EIR identified increased use of hazardous chemicals and increased generation of hazardous chemical waste (during both construction and operation activities) as potentially significant impacts (Impacts 4.6-1 and 4.6-2). The proposed project's contribution to these impacts is well within the scope of the 1994 LRDP assessed in the 1994 LRDP EIR. As discussed in the Background section of this checklist item, the campus has implemented 1994 LRDP EIR Mitigation Measures 4.6-2(b), 4.6-4(b), and 4.6-6(a) by constructing the new Environmental Services Facility, which is currently fully operational. In conformance with 1994 LRDP EIR Mitigation Measures 4.6-1(a)(iii), 4.6-2(d), and 4.6-4(a), the Waste Minimization Coordinator was established (in 1994) and a hazardous waste minimization plan was prepared. Due to recent regulatory changes and the nature of waste generated on campus (less than 6,000 kilograms of waste is generated on a routine basis and the majority is research waste), the campus has been exempt from the state's waste minimization plan requirements since July 2000. As a result, the campus no longer prepares a formal Waste Minimization Plan, and the position of the Waste Minimization Coordinator has been combined with that of the Hazardous Materials Manager to form a single position responsible for managing hazardous materials use and managing and reducing hazardous waste on campus. The campus does continue to implement a waste minimization program that furthers the intent of 1994 LRDP EIR Mitigation Measures 4.6-1(a)(iii), 4.6-2(d), and 4.6-6(c). Continued implementation of the campus waste minimization program, of 1994 LRDP EIR Mitigation Measures 4.6-1(b) and (c) (biennial audits by a third party to document the compliance status of campus departments and units), and of 1994 LRDP EIR Mitigation Measures 4.6-1 (a) (i) and (ii) (increasing Community Right-to Know and Injury

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and Prevention efforts), incorporated into the proposed project, would reduce impacts from hazardous chemicals use and generation of hazardous chemical waste (1994 LRDP EIR Impacts 4.6-1 and 4.6-2) to less-than-significant levels.

The 1994 LRDP EIR also identified that hazardous materials used at facilities developed under the 1994 LRDP could be inadvertently released to the sewer or disposed of with non-hazardous solid waste (Impact 4.6-24). Continued implementation of 1994 LRDP EIR Mitigation Measures 4.6-24 (a) and (b), ensuring compliance with Waste Discharge Requirements and a waste exclusion program, would reduce any this impact from this project to a less-than-significant level.

Construction and operation of the proposed project would contribute to the cumulative increase in use of hazardous chemicals and associated generation of hazardous chemical waste as a result of implementation of the 1994 LRDP in conjunction with regional development (1994 LRDP EIR Impacts 4.6-3 and 4.6-4). Continued implementation of 1994 LRDP EIR Mitigation Measures 4.6-3 and 4.6-4 (a) would reduce the magnitude of these impacts, but these impacts would remain significant and unavoidable because chemical use off-campus is outside the jurisdiction of the University to regulate. These impacts were adequately analyzed in the 1994 LRDP EIR and fully addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and its certification of the 1994 LRDP EIR. As discussed in Appendix B, these impacts are anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

- c) The proposed project would not be located within one-quarter mile of an existing or proposed school. No impact would occur.
- d) The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No impact would occur.
- e, f) There are no private airstrips in the vicinity of the proposed project. The University Airport is a public use airport designed to accommodate aircraft up to 12,500 pounds, which includes most single-engine and some light twin-engine planes. According to the 1994 LRDP EIR, although the University Airport (a university-owned facility) is outside the jurisdiction of the local Airport Land Use Commission, future land use compatibility guidelines to attenuate noise, height, and safety impacts have been prepared for the airport by the Sacramento Area Council of Governments based on the Federal Aviation Administration requirements. The proposed Mathematical Sciences Building site is located on the central campus, approximately one mile east of the University Airport. No impacts due to safety hazards related to the airport would occur as a result of the proposed project.

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- g) As discussed in Item 4e of this Environmental Checklist, the location and design of the proposed project would allow adequate emergency access. Therefore, the project would not interfere with an adopted emergency response plan or emergency evacuation plan. The 1994 LRDP EIR concluded that increased campus operations using hazardous materials resulting from development allowed under the 1994 LRDP could exceed emergency response capabilities at UC Davis (Impact 4.6-22). Continued compliance with 1994 LRDP EIR Mitigation Measures 4.6-22 (a) through (e) (ensuring adequate emergency response and safety planning), incorporated into the proposed project, would reduce this impact to a less-than-significant level.

The 1994 LRDP EIR identified that increased campus operations allowed under the 1994 LRDP, in conjunction with anticipated growth in the City of Davis, could contribute to cumulative demand for emergency response capabilities in the Davis area (Impact 4.6-23). Although 1994 LRDP EIR Mitigation Measure 4.6-23 was identified to reduce the significance of this cumulative impact, the 1994 LRDP EIR identified this impact as significant and unavoidable because the University could not guarantee that other jurisdictions in the region would reach a Mutual Aid Agreement with UC Davis to provide adequate emergency response. However, in compliance with Mitigation Measure 4.6-23, the campus entered into an Agreement for Hazardous Materials Automatic Aid with other agencies in the region in 1995 to provide UC Davis and all participating agencies with adequate response capabilities to respond to a Level A hazardous materials incident. Therefore, this cumulative impact has been reduced to a less-than-significant level and no further mitigation is required.

- h) The proposed project site and the surrounding area are currently developed and consist primarily of buildings and paved driveways and sidewalks. The project site does not contain large amounts of flammable brush, grass, or trees, nor is it adjacent to wildlands. Therefore, implementation of the proposed project would not increase wildland fire hazard, and no impact would occur.
- i) Standards of significance for hazards and hazardous materials impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the hazards and hazardous materials questions in the current Environmental Checklist. As discussed above, with the incorporation of relevant 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to hazards and hazardous materials that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.6-1 (a) through (c); 4.6-2 (d); 4.6-3; 4.6-4 (a); 4.6-16 (a) through (c); 4.6-17; 4.6-18 (a) through (c); 4.6-22 (a) through (d); 4.6-23; and 4.6-24 (a) and (b) would be implemented as part of the proposed project. The proposed project would not result in new or significant hazards or hazardous materials impacts that have not already been adequately assessed in the 1994 LRDP EIR.

8. BIOLOGICAL RESOURCES

Background

The campus is located in a region composed primarily of agricultural lands that include remnant riparian (streamside) and urban areas. Habitat types found on the campus (discussed in the 1994 LRDP EIR on pages 4.7-2 to 4.7-8 and illustrated in Figure 4.7-1) include Agricultural Lands, Ruderal/Annual Grassland, Valley-Foothill Riparian Woodland, Riverine Habitat, Open Water Ponds, Urban Habitat, and Wetlands.

The proposed Mathematical Sciences Building site is currently developed and consists primarily of hardscape surfaces, including buildings, driveways, and sidewalks. The project site also includes urban habitat, habitat that can be found throughout the central campus and in outlying developed areas. Urban habitat consists of landscaped areas (trees, shrubs, and maintained grassy areas) and is subject to regular maintenance and a high level of human activity. The project site's softscape grounds are landscaped with primarily grass lawn and ornamental plantings. A small amount of ruderal vegetation occurs in disturbed areas adjacent to paved and landscaped areas within the site, but no native vegetation is present (Jones & Stokes 1998). The site is surrounded by developed land.

The potential core campus relocation site for the Hog Barn building includes primarily urban habitat. A relocation site in the west campus would likely include either urban habitat, agricultural land, and/or ruderal grassland habitat. The composition of ruderal grassland habitat consists largely of non-native introduced annual grasses. Grassland edges along fields and roads provide food, cover, and movement corridors for resident and migratory wildlife species.

Special-status species are discussed in the 1994 LRDP EIR on pages 4.7-8 through 4.7-18. The campus considers species 'special-status' if they are listed as threatened or endangered under either the California or the Federal Endangered Species Acts, are candidates for either the state or federal listings, are afforded protection under the Fish and Game Code of California, or are identified as California Department of Fish and Game (CDFG) "Species of Special Concern". The 1994 LRDP EIR determined that 10 special-status plant species and 37 special-status wildlife species could conceivably occur on or in the vicinity of the campus (presented in Tables 4.7-1 and 4.7-2 of the 1994 LRDP EIR). The special-status species with potential habitat still available on campus or that are currently known to occur on campus include: burrowing owl, Swainson's hawk, other raptors, and the Valley Elderberry Longhorn Beetle. The special-status species that could potentially occur on the proposed project site are discussed below.

Special-Status Plants

The Mathematical Sciences Building site is currently developed and consists primarily of hardscape surfaces, including buildings, driveways, and sidewalks. The project site's softscape grounds are landscaped with primarily grass lawn and ornamental plantings. No special-status plant species or potential habitat for special-status plant species were observed during a biological survey conducted on the site (Jones & Stokes 1998).

Special-Status Animals

Two special-status animals that could potentially occur on the Mathematical Sciences Building and potential Hog Barn relocation sites include the Swainson's hawk and the valley elderberry longhorn

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beetle. The burrowing owl could also potentially occur on a west campus Hog Barn relocation site. These animals are discussed briefly below.

Swainson's Hawk: The Swainson's hawk 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 California Fish and Game Code and the Federal Migratory Bird Treaty Act. The Swainson's hawk is a relatively large bird-of-prey that typically nests in large trees in riparian corridors as well as in isolated trees 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 they may travel 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.

Since 1990, two Swainson's hawk nest sites have been identified within 1/2-mile of the proposed Mathematical Sciences Building site. One nest was identified approximately 1/3-mile to the south of the project site, on the southern side of the University Arboretum. The second nest was identified approximately 1/4 mile to the northwest in landscape trees adjacent to the Surge I, II, and III buildings. Both nests are buffered from the project site by existing structures, roadways, and landscaping. The nests were identified in areas with moderate to high levels of human activity and were used by birds habituated to the activities in these areas. No Swainson's hawk foraging habitat is located on or adjacent to the Mathematical Sciences Building site.

Valley Elderberry Longhorn Beetle (VELB): The VELB is listed as a threatened species under the federal Endangered Species Act. This species requires its host plant, the Mexican elderberry shrub, 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. No elderberry plants are located on the Mathematical Sciences Building site. The closest known elderberry plants are located approximately 1/3 mile southwest of the proposed project site, along the northern border of the University Arboretum.

Burrowing Owl: The burrowing owl is fully protected against take pursuant to Section 3503.5 of the California Fish and Game Code and is a California Department of Fish and Game (CDFG) Species of Special Concern. The burrowing owl is also designated a Migratory Nongame Bird of Management Concern by the US Fish and Wildlife Service (USFWS). Burrowing owls are small birds with the relatively unique habits of being active during the day as well as in the evening, and of 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. Burrowing owls are known to nest in the west campus at the University Airport and on teaching and research fields between Hutchison Drive and Russell Boulevard.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to biological resources significant if campus or regional growth would:

- result in substantial, or potentially substantial, adverse change in the native flora or fauna, including candidate species and CDFG "Species of Special Concern" from conversion of existing habitat to urban uses or disturbance of areas currently supporting such species;
- 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 the substantial reduction in acres of habitat (including wetlands) of native fish, wildlife, or plants;
- interfere substantially (creation of barriers to the free movement between habitats both locally and regionally) with the movement of any resident or migratory fish or wildlife species; or
- be in conflict with existing state or federal natural resource protection laws, policies, or guidelines.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on biological resources are addressed in Section 4.7 (Biological Resources) of the 1994 LRDP Draft EIR. The WWTP Replacement Project EIR and the 1997-98 Major Capital Improvement Projects SEIR identified the loss of additional ruderal/annual grassland habitat over the amount assessed in the 1994 LRDP EIR and revised the magnitude of associated impacts, 1994 LRDP EIR Impacts 4.7-1, 4.7-5, and 4.7-9 (Appendix G of the WWTP Replacement Project Final EIR and Section 8 of the 1997-98 Draft SEIR). The 1997-98 Major Capital Improvement Projects SEIR, as revised by the Western Human Nutrition Center Tiered Initial Study and Mitigated Negative Declaration, presented a mitigation measure (identified as 1994 LRDP EIR Mitigation Measure 4.7-3[d]) to mitigate the cumulative impact on burrowing owl nesting habitat (Section 2 of the 1997-98 Draft SEIR, page 65 of the Initial Study). Appendix A of this document discusses revisions to the 1994 LRDP EIR in further detail. Significant impacts on biological resources identified in the 1994 LRDP EIR, as revised, that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR, as revised, are also presented in the table. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would likely develop additional habitat that was not previously anticipated under the 1994 LRDP. However, this development is not anticipated to result in any new cumulative biological resources impacts different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential

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cumulative biological resources impacts and the availability of additional feasible mitigation measures during the LRDP update process.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.7-1 Development allowed under the 1994 LRDP would result in the conversion of approximately 231 acres of Agricultural Lands and Annual/Ruderal Grassland to Campus-related development and could result in the loss of the special-status plant species listed in Table 4.7-1 or added to the special-status plant list in the future. ¹	PS	LS
4.7-5 Development allowed under the 1994 LRDP would result in the conversion of approximately 231 acres of Agricultural Land and Ruderal/Annual Grassland habitat to Campus-related development which would result in the loss of foraging habitat for the Swainson's hawk. ¹	S	LS
4.7-6 Development allowed under the 1994 LRDP could result in the potential failure of Swainson's hawk nesting efforts.	PS	LS
4.7-7 Development allowed under the 1994 LRDP could result in the loss of potential habitat for the valley elderberry longhorn beetle.	PS	LS
4.7-9 Development allowed under the 1994 LRDP would contribute 231 acres of the cumulative loss in the region of 1,258 acres of Agricultural Land and Ruderal/Annual Grassland habitat for resident and migratory wildlife species. ¹	SU	SU

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

1. As revised by the WWTP Replacement Project EIR and the 1997-98 Major Capital Improvements Project SEIR (summarized in Appendix A of this document).

Mitigation measures in the 1994 LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.7-1(a)** – *During the project planning phase, the Campus shall conduct a rare plant survey if the site was previously undeveloped. Surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted at the time of year when the plants in question are identifiable. (Identification periods are included in Table 4.7-1, however, survey timing for the various plant species is dependent in part on yearly rainfall patterns and is determined on a case-by-case basis.)*
- **LRDP EIR Mitigation Measure 4.7-1(b)** – *Based on the results of the survey, prior to design approval, the Campus in consultation with CDFG and/or USFWS, shall determine whether the project would result in a significant impact to any special-status plant species. Evaluation of project impacts shall consider the following:*
 - *The status of the species in question (e.g., officially listed by the State or Federal Endangered Species Acts, candidate species, CNPS list).*
 - *The relative density and distribution of the on-site occurrence versus typical occurrences of the species in question.*

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- *The habitat quality of the on-site occurrence relative to historic, current or potential distribution of the population.*

If these surveys reveal no occurrences of any species, or if the Campus in consultation with CDFG or USFWS determines that no significant impacts on any special-status plant species would result from project implementation, then no further mitigation would be required.

Should one or more of special-status plant species occur on the project site, and a determination of significant impact be made, the following mitigation measure shall be required.

- **LRDP EIR Mitigation Measure 4.7-5** – *As Agricultural Land and Ruderal/Annual Grassland is converted to Campus development under the 1994 LRDP, the Campus will compensate for the loss of Swainson's hawk foraging habitat at a 1:1 ratio of acres lost to acres preserved through the implementation of one or a combination of the following methods.*

- *Approximately 40 acres of Cropland habitat in the "C" tract adjacent to the Putah Creek Reserve on the West Campus will remain Campus agricultural research uses but will be under land use restrictions that will ensure cropland cover types that are suitable as Swainson's hawk foraging habitat. No incompatible uses such as orchards, vineyard, or development will be allowed in the areas set aside for Swainson's hawk foraging habitat. However, normal crop rotations may periodically result in unsuitable cover types of annual crops.*
- *Approximately 20 acres of land within the North Fork Cutoff that currently support livestock enclosures will be restored to a woodland and grassland habitat.*
- *Approximately 55 acres of existing orchards adjacent to Putah Creek at the Russell Ranch will be removed, converted to a cover type suitable for Swainson's hawk foraging, and added to the Putah Creek Reserve.*
- *Approximately 85 acres at the Russell Ranch that have been designated as a habitat restoration and research area will include the establishment of cover types that are suitable Swainson's hawk foraging habitat.*

- **LRDP EIR Mitigation Measure 4.7-6(a)** – *The campus shall conduct a pre-construction breeding season survey of the proposed project site, and within a one-half-mile radius of the site, to determine the presence or absence of any nesting Swainson's hawks.*

If any Swainson's hawks are nesting within a one-half-mile radius of the project site, the Campus shall, in consultation with DFG, determine the potential for disturbance to nesting Swainson's hawks and will implement feasible changes in the construction schedule or other appropriate adjustments to the project in response to the specific circumstances.

- **LRDP EIR Mitigation Measure 4.7-6 (b)** – *The campus shall continue to conduct annual surveys to determine the location of nesting Swainson's hawks on and within ½-mile of the campus. If nesting*

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Swainson's hawks are found during the survey at a previously unknown location within one-half mile of a project site and not within 100 yards of a previously documented site, the University shall, prior to project construction, contact the California Department of Fish and Game to determine the potential for disturbance to nesting Swainson's hawks and will implement feasible changes in the construction schedule or other appropriate adjustments to the project in response to the specific circumstances.

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.

- **LRDP EIR Mitigation Measure 4.7-7** – During the project design stage and as a condition of project approval, the campus shall:
 - (a) Conduct a project-specific survey for all potential VELB habitat, including a stem count and an assessment of historic or current VELB use;
 - (b) Avoid and protect all potential VELB habitat within a natural open space area where feasible; and
 - (c) Where avoidance is infeasible, develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act.
- **LRDP EIR Mitigation Measure 4.7-9(a)** – Implement Mitigation Measures 4.7-1, 4.7-3, 4.7-4, 4.7-5, and 4.7-6.
- **LRDP EIR Mitigation Measure 4.7-9(b)** – The County of Yolo, when implementing the County-wide Habitat Management Plan, should impose a 1:1 mitigation ratio of habitat preserved to that converted on all development projects within their jurisdiction that convert Agricultural Land and Annual Grassland habitat to urban development.

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

BIOLOGICAL RESOURCES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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"/>

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BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 applicable policies protecting biological resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) Special-status species are addressed in the 1994 LRDP Draft EIR on page 4.7-8. For the purposes of the 1994 LRDP EIR, special-status species were defined as those species that are listed as threatened or endangered under either the California or the Federal Endangered Species Acts, are candidates for either the state or federal listings, are afforded protection under the Fish and Game Code of California, or are identified as CDFG "Species of Special Concern".

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Plants

In spring/summer, 1998, the proposed site for the Mathematical Sciences Building was surveyed to assess whether special status plants or their habitat occur on the site. The survey did not identify any special status or native vegetation on the site (Jones & Stokes 1998). The potential central campus relocation site for the Hog Barn supports ornamental landscaping and is not suitable habitat for any special status plant species. In compliance with Mitigation Measures 4.7-1(a) and (b), if the campus decides to relocate the Hog Barn building to a west campus site, the proposed relocation site would be surveyed for rare plants. Based on the results of the survey, the campus would determine, in consultation with CDFG and/or USFWS, whether the project would result in a significant impact to any special-status plant species and appropriate mitigation measures.

Wildlife

Swainson's Hawk

The occurrence of Swainson's hawk in and around the campus is well documented. Surveys for Swainson's hawk nests on the campus and within one-half mile of the central campus have been conducted annually since 1990. These surveys document over 50 different nest trees on or adjacent to the campus during the period from 1990 to the present. Most of the Swainson's hawk nests that have been identified are located in the Putah Creek riparian corridor.

Since 1990, two Swainson's hawk nest sites have been identified within 1/2-mile of the proposed Mathematical Sciences Building site. One nest was identified approximately 1/3-mile to the south of the project site, on the southern side of the University Arboretum. The second nest was identified approximately 1/4 mile to the northwest in landscape trees adjacent to the Surge I, II, and III buildings. Both nests are buffered from the project site by existing structures, roadways, and landscaping. The nests were identified in areas with moderate to high levels of human activity and were used by birds habituated to the activities in these areas. No Swainson's hawk foraging habitat is located on or adjacent to the Mathematical Sciences Building site.

With implementation of 1994 LRDP EIR Mitigation Measures 4.7-5 and 4.7-6(a) and (b), potential impacts on Swainson's hawks associated with possible relocation of the Hog Barn building would be reduced to less-than-significant levels. In accordance with 1994 LRDP EIR Mitigation Measures 4.7-6(a) and (b), incorporated as part of the proposed project, the campus would conduct annual pre-construction surveys. By conducting presence/absence pre-construction surveys, nesting Swainson's hawks within one-half mile of the proposed project would be identified. If a nesting pair were located during the pre-construction surveys, then consultation with CDFG would determine the potential for disturbance. In consultation with CDFG, the campus would implement feasible changes to the project in response to the specific circumstances to mitigate impacts to a less-than-significant level. No further mitigation is required.

Valley Elderberry

The 1994 LRDP EIR identified that development under the 1994 LRDP could result in the loss of potential habitat for the valley elderberry longhorn beetle (Impact 4.7-7). In compliance with

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Mitigation Measure 4.7-7, the campus conducted a site survey of the Mathematical Sciences Building site to identify the presence of potential habitat for the valley elderberry longhorn beetle. No elderberry plants are located on or adjacent to the project site. If the campus decides to relocate the Hog Barn building, the proposed relocation site would be surveyed for the presence of potential habitat for the valley elderberry longhorn beetle. In compliance with 1994 LRDP EIR Mitigation Measure 4.7-7, such habitat would be avoided and protected. Therefore, the impact would be reduced to a less-than-significant level.

Burrowing Owl

The Mathematical Sciences Building site and the potential central campus Hog Barn relocation site do not offer suitable nesting or foraging habitat for burrowing owls. Burrowing owls have nested on the west campus at the University Airport and on agricultural land between Hutchison Drive and Russell Boulevard, but neither of these sites would be potential relocation sites for the Hog Barn. Therefore, there would be no direct impact on burrows used by burrowing owls.

If the Hog Barn were relocated to a site in the west campus, approximately 0.1 acre of ruderal/annual grassland habitat could potentially be developed and could be in an area where burrowing owls forage. The 1994 LRDP EIR identified that development allowed under the 1994 LRDP would contribute to the cumulative loss of ruderal/annual grassland habitat in the region (Impact 4.7-9). Although 1994 LRDP EIR Mitigation Measures 4.7-9(a) and 4.7-9(b) would be incorporated as part of the proposed project, this cumulative impact would remain significant and unavoidable because implementation of Mitigation Measure of 4.7-9(b) is outside the jurisdiction of the campus to enforce and monitor. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP EIR. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

- b) The proposed Mathematical Sciences Building site consists primarily of developed hardscape. The project site is not considered a riparian habitat or habitat for another sensitive natural community. In addition, the potential relocation sites for the Hog Barn building would not be located in riparian habitat or habitat for another sensitive natural community. Therefore, the project would not have a substantial adverse effect on a sensitive natural community and no impact would occur.
- c) There are no streams, ponds, or wetlands on or adjacent to the proposed Mathematical Sciences Building and potential Hog Barn relocation sites. Therefore, the project would not adversely effect federally protected wetlands and no impact would occur.
- d) There are no streams, ponds, or wetlands on or adjacent to the project site. Therefore, the project would not substantially interfere with movement of wildlife or fish or impede the use of nursery sites. Therefore, no impact would occur.
- e) The proposed project would remove a few ornamental trees located in landscaped areas on the Mathematical Sciences Building site. However, the proposed project, including removal of these trees, would not conflict with any local applicable policies protecting biological resources. No impact would occur.

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- f) As discussed in Item 1c, the proposed project site is not included in any conservation plan and therefore would not conflict with any policies, ordinances, or adopted habitat conservation plans. No impact would occur.

Standards of significance for biological resources impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the biological resources questions in the current Environmental Checklist. As discussed above, with the incorporation of 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR.

Summary

Mitigation Measures 4.7-1 (a) and (b), 4.7-5, 4.7-6 (a) and (b), 4.7-7, and 4.7-9(a) and (b) will be incorporated as part of the proposed project. The proposed project would not result in new or significant biological resource impacts that have not already been adequately assessed in the 1994 LRDP EIR.

9. HYDROLOGY AND WATER QUALITY

Background

Putah Creek, the principal stream course in the Davis region, flows along the southern boundary of the Russell Ranch property and the west campus. The entire flow of Putah Creek is diverted to the South Fork of Putah Creek west of the I-80/SR 113 intersection. The historical North Fork of Putah Creek (currently the Arboretum Waterway) is east of SR 113 on the central campus and is separated from its former channel by levees, SR 113, the Union Pacific Railroad Tracks, and I-80.

The 100-year flood plain in the campus is generally located along the North Fork, South Fork, and historical North Fork channels. A portion of the west campus along County Road 98 is also subject to inundation during a 100-year storm event and is designated as a flood hazard zone by the Federal Emergency Management Agency (FEMA) (see Figure 4.8-2 on page 4.8-4 of the 1994 LRDP Draft EIR).

The South Fork of Putah Creek receives treated effluent discharge from the new campus Wastewater Treatment Plant. The plant, which began operation in March 2000, is more reliable to operate than the outdated treatment system that was in use when the 1994 LRDP and 1994 LRDP EIR were prepared.

The existing stormwater drainage system on the central campus consists of collectors, pump stations, transmission mains, and the Arboretum Waterway. Storm drainage from the central campus is discharged to the Arboretum Waterway, which serves a stormwater retention basin for the central campus. Rainfall overflow is pumped into the South Fork of Putah Creek during large storm events.

The campus is underlain by the Lower Cache-Putah Basin, which is divided by relatively impervious soil layers into shallow/intermediate and deep aquifers. Domestic and fire water for the campus is drawn from wells in the deep aquifer (located up to 1,500 feet below the ground surface). Utility water is used primarily for landscape irrigation and is drawn from wells in the shallow/intermediate aquifer (200 to 600 feet below the ground surface). Groundwater underlying the campus is generally high in mineral content and is considered good quality for agricultural use and adequate quality for municipal use.

1994 LRDP EIR Standards of Significance

The environmental analysis provided in the 1994 LRDP EIR considered an impact to hydrology and water quality significant if campus or regional growth would:

- expose faculty, staff, students or visitors to flood hazards by being located within the 100-year flood plain as defined by the Federal Emergency Management Agency;
- result in substantial changes in absorption rates, drainage patterns, or the rate and amount of surface runoff which cause existing drainage capacity to be exceeded;
- substantially interfere with groundwater recharge; or

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- substantially degrade surface and/or groundwater quality due to increases in sediments, erosion and contaminants generated by construction and/or implementation of the 1994 LRDP.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented. Impacts of campus growth through year 2005-06 on hydrology and water quality were addressed in Sections 4.8 (Hydrology and Water Quality) and 4.14 (Utilities and Infrastructure) of the 1994 LRDP Draft EIR. Cumulative hydrology and water quality impacts were reevaluated in the WWTP Replacement Project EIR, but no changes were made to 1994 LRDP EIR impacts, mitigation measures, or levels of significance. Updates and revisions to the 1994 LRDP EIR are summarized in Appendix A of this document. The proposed project is within the scope of the analysis presented in the 1994 LRDP EIR as reevaluated in the WWTP Replacement Project EIR. Please note that cumulative regional impacts 4.8-8 and 4.8-9 include mitigation measures to reduce the impacts to less-than-significant levels. However, these impacts are identified as significant and unavoidable because the University of California cannot guarantee implementation of a mitigation measure that is not within its jurisdiction to enforce and monitor. Impacts 4.14-1 and 4.14-11 also include measures to reduce the magnitude of the impacts. However, due to the unknown significance of these impacts, the impacts remain significant and unavoidable.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would likely increase water use and sources of water pollution beyond levels previously anticipated under the 1994 LRDP. However, campus growth through 2014-15 is not anticipated to result in any new cumulative hydrology and water quality resource impacts different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential cumulative hydrology and water quality impacts and the availability of additional feasible mitigation measures during the LRDP update process.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.8-2 New impervious surfaces associated with development allowed under the 1994 LRDP would increase surface runoff, and could exceed existing drainage capacity and result in localized flooding.	S	LS
4.8-3 New impervious surface associated with development allowed under the 1994 LRDP could reduce the potential for groundwater recharge.	S	LS
4.8-4 Increased siltation and sedimentation generated during construction activities associated with development allowed under the 1994 LRDP could adversely affect receiving water quality.	S	LS

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LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.8-5	Increased runoff from additional impervious surfaces associated with development allowed under the 1994 LRDP could result in sedimentation and increased levels of urban contaminants that could adversely affect receiving water quality.	S	LS
4.8-6	Increased flows to the campus Wastewater Treatment Plant due to development allowed under the 1994 LRDP would generate increased discharge of treated effluent into the South Fork of Putah Creek which could adversely affect receiving water quality.	S	LS
4.8-8	Urban and agricultural development allowed under the 1994 LRDP in the Putah Creek watershed, including the campus, could reduce receiving water quality.	SU	SU
4.8-9	Development allowed under the 1994 LRDP, in combination with cumulative development in the Lower Cache-Putah Groundwater Basin, would increase the amount of impervious surface and reduce groundwater recharge potential.	SU	SU
4.14-1	Development allowed under of the 1994 LRDP would directly increase the demand for water supplied from the deep aquifer.	SU	SU
4.14-11	Cumulative development allowed under the 1994 LRDP would result in increased demand for water from the deep aquifer.	SU	SU

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

Mitigation measures in the LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.8-2(a)** – *Prior to approval of final project design, the campus shall prepare detailed drainage study to evaluate each specific development project under the 1994 LRDP to determine if project runoff would exceed the capacity of the existing campus storm drainage system.*
- **LRDP EIR Mitigation Measure 4.8-3** – *The campus shall incorporate where feasible as part of project design the following measures, or equally effective measures, to maximize percolation and infiltration of precipitation into the underlying groundwater aquifers:*
 - (a) *the use of pervious paving material; or*
 - (b) *preservation and utilization of natural drainage areas.*
- **LRDP EIR Mitigation Measure 4.8-4(a)** – *If project construction includes the disturbance of five acres or more of land, the campus shall include in all construction contracts a requirement that campus contractors file a Notice of Intent for coverage under the State General Construction Activity Storm Water Permit. The contractor shall comply with applicable permit requirements.*

The 1994 LRDP EIR further states: *Compliance with the Permit would require the implementation of Best Management Practices (BMPs). BMPs include schedules of activities,*

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prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution (i.e. straw bale dikes, silt fences, sediment traps, or similar methods)⁵

- **LRDP EIR Mitigation Measure 4.8-5(a)** – *The campus shall ensure that project design includes a combination of the following Best Management Practices (BMPs), or equally effective measures:*
 - (i) *Reduction of the area and length of time that the site is cleared and graded.*
 - (ii) *Revegetation/stabilization of cleared areas as soon as possible.*
 - (iii) *Peak flow reduction and infiltration practices, such as grass swales, infiltration trenches and grass filter strips shall be incorporated.*
 - (iv) *Storm drain inlets shall be labeled to educate the public of the adverse impacts associated with dumping in receiving waters (i.e. “Don’t dump! Drains to creek”).*
 - (v) *Landscape areas, including borders shall use warm season grasses and drought tolerant vegetation wherever feasible to reduce demand for irrigation and thereby reducing irrigation runoff.*
 - (vi) *Efficient irrigation shall be installed in landscaped areas to minimize runoff and evaporation and maximize the water that will reach the plant roots. Such irrigation systems include drip irrigation, soil moisture sensors, and automatic irrigation systems.⁶*
- **LRDP EIR Mitigation Measure 4.8-6(a)** – *The campus shall continue to monitor effluent discharge, in compliance with WDR Order No. 92-040, from the wastewater treatment plant to identify any exceedances of established WDR effluent limits.⁷*
- **LRDP EIR Mitigation Measure 4.8-6(b)** – *If the effluent limits established in WDR Order No. 92-040 are exceeded, and action is required by the CVRWQCB, the campus shall make modifications to the pretreatment program to ensure compliance with established effluent limits.⁸*
- **LRDP EIR Mitigation Measure 4.8-6(c)** – *The Campus shall apply for and comply with any requirements of a NPDES WDRs for the proposed new wastewater treatment plant prior to plant operation.*

⁵ Due to a recent agreement with the Central Valley Regional Water Quality Control Board, the campus has filed for coverage under the National Pollutant Discharge Elimination System state-wide General Permit for Discharge of Storm Water Associated with Construction Activity. As opposed to the stormwater permitting procedures for construction activities included in 1994 LRDP EIR Mitigation Measures 4.8-4(a) and (b), the campus must now by law submit New Construction Project Information Forms and prepare and implement project-specific stormwater pollution prevention plan for all construction projects on campus. This new construction stormwater permitting procedure complies with the intent of 1994 LRDP EIR mitigation measures.

⁶ Efficient irrigation on campus also includes low-flow spray systems.

⁷ In 1997, WDR Order No. 90-040 was superseded by WDR Order No. 97-236.

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- **LRDP EIR Mitigation Measure 4.8-8(a)** – Implement Mitigation Measures 4.8-4(a) and (b), 4.8-5(a) and (b) and 4.8-6(a) through (c).
- **LRDP EIR Mitigation Measure 4.8-8(b)** – When the EPA adopts NPDES Municipal Storm Water Permit requirements for small municipalities, local jurisdictions in the Putah Creek Watershed would apply for, obtain, and implement a NPDES Municipal Storm Water Permit in accordance with EPA requirements.
- **LRDP EIR Mitigation Measure 4.8-8(c)** – Comprehensive Storm Water Pollution Prevention Plans and monitoring programs would be implemented by all storm water dischargers associated with specific industrial and construction activities, in compliance with the State's General Permits. Such plans shall include Best Management Practices or equally effective measures.
- **LRDP EIR Mitigation Measure 4.8-9(a)** – Implement Mitigation Measure 4.8-3(a) and (b).
- **LRDP EIR Mitigation Measure 4.8-9(b)** – Jurisdictions in the Lower-Cache Putah Creek Groundwater Basin should encourage development to be accomplished in a manner that would maximize percolation and infiltration of precipitation into the underlying groundwater aquifers through the use of pervious paving materials, cluster development, retention of natural drainage areas, and identification and retention of flood plains and areas of high recharge potential.
- **LRDP EIR Mitigation Measure 4.14-1(a)** – The campus shall ensure that each project is designed to include the following domestic water conservation measures.
 - (i) Low-flow showerheads (2.0 gpm or less) shall be installed in all new showers.
 - (ii) Toilets with low-water-use flush devices (with average savings of 1 gallon per flush) shall be installed in all new facilities and existing facilities should be retrofitted at a pace at least equal to new development.
- **LRDP EIR Mitigation Measure 4.14-3(a)** – The campus shall ensure that each project is designed to include the following utility water conservation measures:
 - (i) landscape, where appropriate, with native, drought-resistant plants, drip irrigation systems;
 - (ii) apply heavy applications of mulch to landscaped areas to reduce evaporation; and
 - (iii) use treated wastewater for landscape irrigation where feasible.
- **LRDP EIR Mitigation Measure 4.14-3(b)** – The campus shall continue to monitor the groundwater elevations at its existing wells to ascertain whether any long-term storage depletion of the shallow/intermediate aquifer is due to UC Davis activities.
- **LRDP EIR Mitigation Measure 4.14-11** – Implement Mitigation Measures 4.14-1(a) and (b).

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The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater 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"/>

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HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
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"/>
k) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) Stormwater runoff from the proposed Mathematical Sciences Building site currently drains into the Arboretum Waterway. From there, stormwater is pumped into the South Fork of Putah Creek. Putah Creek, the principal stream course in the Davis region, flows along the southern boundary of the Russell Ranch property and the west campus. The entire flow of Putah Creek is diverted to the South Fork of Putah Creek west of the I-80/SR 113 intersection. During construction and after the project is completed, the site would continue to drain to the same location.

Construction

Construction of the proposed project would include temporary earth disturbing activities, such as grading and excavation, which could result in increased rates of soil erosion leading to increased sediment loads in stormwater runoff. This could adversely affect receiving water quality. Soils underlying the project site (Yolo series) are characterized as having minimum erosion potential (see Figure 4.9-1 on page 4.9-6 of the 1994 LRDP EIR and the discussion under Items 10b and 10c of this checklist).

Approximately two acres would be graded for site preparation of the proposed Mathematical Sciences Building. An additional approximately 0.1 acre would be graded if the Hog Barn were relocated to another site. The 1994 LRDP EIR identified that construction activities associated with development allowed under the 1994 LRDP could increase siltation and sedimentation and could adversely affect receiving water quality (Impact 4.8-4). However, due to the low erosion potential of soil on the proposed project site, the potential for construction-related water quality

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impacts is minimal. Construction activity associated with the proposed project would be covered under a National Pollutant Discharge Elimination System (NPDES) state-wide General Permit for Discharge of Storm Water Associated with Construction Activity. As part of a recent agreement with the Central Valley Regional Water Quality Control Board, the campus has filed for coverage under the General Permit for the entire Davis campus. As part of this permit, the project's contractor would prepare and implement a project-specific stormwater pollution prevention plan for construction activities associated with the proposed project. This would further reduce potential construction-related surface water quality impacts to less-than-significant levels.

Operation

Because the proposed Mathematical Sciences Building site is currently developed, only approximately one acre of new impervious surfaces would be created by the proposed project. This would slightly increase the volume of surface water runoff, which could contribute to increased sediment and urban contaminant loads in the Arboretum Waterway and Putah Creek. In addition, landscape irrigation from the project's softscape grounds could contribute sediments, nutrients (from fertilizers), pesticides, and herbicides to stormwater runoff. However, use of fertilizers, pesticides, and herbicides in campus landscaping activities is being reduced from past use (Mezger 2001).

The 1994 LRDP EIR identified that increased runoff from additional impervious surfaces associated with development allowed under the 1994 LRDP could result in sedimentation and increased levels of urban contaminants in receiving water (Impact 4.8-5). 1994 LRDP EIR Mitigation Measure 4.8-5(a), incorporated as part of the proposed project, would ensure that project design incorporates Best Management Practices to reduce the project's operational impact on receiving waters to a less-than-significant level.

The 1994 LRDP EIR concluded that cumulative effects of urban and agricultural development in the Putah Creek Watershed could reduce the receiving water quality of Putah Creek (Impact 4.8-8). 1994 LRDP EIR Mitigation Measures 4.8-8 (a) through (c) were identified to reduce this impact to a less-than-significant level, but the impact is considered significant and unavoidable because the University of California cannot guarantee implementation of 4.8-8 (b), which falls within other jurisdictions to enforce and monitor. The proposed project would contribute to, but not exceed, the cumulative urban development identified in the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP EIR, as revised. As discussed in Appendix B, this impact is anticipated to remain significant and unavoidable through 2014-15. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

Wastewater from the proposed project would be treated at the campus WWTP, and then discharged to the South Fork of Putah Creek. The 1994 LRDP EIR recognized that increased flows to the WWTP due to development allowed under the 1994 LRDP would increase discharge of treated effluent into the South Fork of Putah Creek, which could adversely affect water quality (Impact 4.8-6). 1994 LRDP EIR Mitigation Measure 4.8-6 (a) requires continued monitoring of WWTP effluent discharge. In the event that effluent limits are exceeded, Mitigation Measure 4.8-6 (b) requires the campus to make modifications to the pretreatment program to ensure compliance. 1994 LRDP EIR Mitigation Measures 4.8-6 (a) and (b) are incorporated as part of the proposed project and would reduce this impact to a less-than-significant level.

Copper

The campus WWTP has exceeded NPDES effluent limits for copper during three of 15 sampling events since the new plant became operational in March 2000 (in December 2000, September 2001, and June 2002). The copper permit limit is 13 parts per billion (ppb) for one-hour average sampling. The exceedances ranged from 16 to 29 ppb.

Consistent with CEQA, the WWTP Replacement Project EIR was prepared for the current campus WWTP (which began operation in March 2000). The WWTP Replacement Project EIR stated that, "continued discharge of treated effluent into the South Fork of Putah Creek could result in potential water quality degradation because of the presence of toxic pollutants in the WWTP effluent" (WWTP Draft EIR page 4.1-54). Consistent with the 1994 LRDP EIR, this impact was considered potentially significant. To reduce this impact to a less-than-significant-level, the following mitigation measures were adopted (WWTP Final EIR page 2-3) in addition to 1994 LRDP EIR mitigation measures.

- 4.1-6(a)** *The Campus shall strictly implement the pretreatment program and aggressively enforce the local limits to reduce pollutant concentrations and ensure the NPDES permit limits would be met. Implementation of the pretreatment program to ensure that local limits are met will include monitoring, inspection of facilities, education, and enforcement, all as described above in "Regulatory Setting", in Appendix E [of the WWTP Replacement Project Draft EIR], and in the UC Davis WWTP Final Local Limits Report (Krieger and Stewart 1995) or subsequent updates.*
- 4.1-6(b)** *The Campus will modify the operation and/or treatment processes at the new WWTP as necessary to comply with all applicable permit conditions related to toxics that are in the final NPDES permit for the new WWTP.*

As required by the monitoring programs in both the previous and current WWTP Waste Discharge Requirements (WDRs), and consistent with the 1994 LRDP EIR and WWTP mitigation measures, the campus has monitored WWTP effluent on at least a quarterly basis. More frequent monitoring has been initiated in response to permit exceedances. Effluent sampling at the new WWTP has indicated copper concentrations are much lower than at the old WWTP. Between March 1998 and through the first quarter of 2000, copper concentration in effluent from the old WWTP averaged 33 ppb with a maximum concentration of 59 ppb (Phillips 2001b). The results of toxicity testing using bioassays in 100 percent raw effluent show discharge from the old plant generally met or exceeded EPA standards⁹.

A yearlong toxicity study of the Cache Creek and Putah Creek watersheds (1998-99), which included sampling stations upstream and downstream of the old campus WWTP discharge to Putah Creek as well as samples of 100 percent effluent from the old WWTP, concluded that the minor levels of toxicity in the Putah Creek Watershed were associated with watershed-wide events not related to discharge from the UC Davis WWTP (California Regional Water Quality Control Board 2000).

⁹ UC Davis Wastewater Treatment Plant self-compliance monitoring reports using Ceriodaphnia, fathead minnow larvae, and algae.

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In response to the copper exceedances at the WWTP, and consistent with the 1994 LRDP EIR and WWTP Replacement Project EIR mitigation measures, the campus has taken several steps to bring copper concentrations into compliance with the permit limit by identifying and removing sources of copper to wastewater where feasible. Specifically, the following measures have been/are being implemented (UC Davis O&M 2002):

- Campus sewer disposal policies were changed in February 2001 to lower the local copper limit to zero and completely prohibit the discharge of any wastewater containing added copper.
- Staff from EH&S performed an audit of campus departments that maintain significant quantities of copper in their laboratories to ensure that all waste is being properly disposed. The audit indicated that nearly all campus copper users are properly collecting and disposing their wastes.
- Campus WWTP staff worked with campus wastewater researchers and outside professional engineers to identify operations at the WWTP that could be modified to enhance the removal of copper during treatment. In response to this work, the campus has modified its sampling techniques to ensure a more representative sample and to reduce localized sources of contamination. In addition, tests of various treatment-enhancing chemicals identified one product that significantly improved copper removal. The campus initiated full-scale addition of the selected chemical precipitant in February 2002 to enhance copper removal by the WWTP. This action alone is predicted to provide compliance with the copper limit. Any source control actions implemented in the future would further enhance compliance.
- Source control studies identified the corrosion of copper pipes and discharge from the Campus Heating and Cooling Plant (CHCP) as major potential sources of copper in WWTP influent. Replacement of existing copper pipes on campus and use of alternative materials in new construction was determined infeasible. Several source control actions were initiated at the CHCP; for example, copper piping was removed from one of the large cooling tower systems to eliminate corrosion of this pipe. Vehicle maintenance operations at the Unitrans Bus Maintenance Facility and the Fleet Services garage were also identified as potentially significant sources of copper discharge. Consistent with this finding, the campus has incorporated an improved sewer oil/water separator system into the recently approved Unitrans Maintenance Facility Expansion Project.

The campus initiated more frequent influent and effluent monitoring in January 2002 to better track copper concentrations and to verify the effectiveness of the above actions. The first seven results for 2002 showed compliance with the effluent limits. However, a sample collected in June 2002 was found to significantly exceed the effluent limit. Just before the effluent samples were taken, the copper concentration of WWTP influent was also significantly higher than usual. Thus, the June 2002 exceedance was apparently the result of an unusual discharge event on campus. The high influent concentrations occurred during the last week of the spring quarter, so a potential source could have been illicit discharge of copper wastes down a sink during laboratory clean-up. Copper discharges from the CHCP might also have been unusually high; a pH controller at the facility failed prior to the exceedance, which caused the pH of the cooling water to be unusually corrosive. In response to the June 2002 exceedance, the campus initiated the following additional actions:

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- The dose of the chemical added to the WWTP for precipitation was increased to provide enhanced removal of copper. Bench-scale tests proved this to be effective.
- Daily testing of influent and process control sampling was initiated to optimize chemical additions and help identify future “slug” discharges of copper. Precipitant doses will be further increased in response to unusually high influent concentrations.
- A renewed educational effort has been launched regarding sewer disposal practices and the serious consequences that can result from illicit dumping of chemicals down laboratory sinks.
- The faulty pH controller at the CHCP was replaced, and additional source control investigations were performed at the facility. Several additional source control actions are anticipated, pending follow-up investigations and feasibility tests.

Implementation of the measures described above, which satisfy mitigation measures previously identified in the 1994 LRDP EIR and the WWTP Replacement Project EIR, will reduce the copper concentration in WWTP effluent to within the permit limit. No new significant impacts have been identified and no new mitigation measures are required.

The proposed project includes no special characteristics that would make it an atypical contributor of copper to the wastewater discharged to the WWTP due either to its design or the operation of the facility. The proposed building would consist of offices and office support space, computer rooms, and seminar space. Therefore, as for most other campus buildings, the likely source of copper from the proposed project would be corrosion of copper pipes.

If the concentration of copper in wastewater from future projects averages the same as that currently entering the plant, no change in effluent concentrations would occur. Unless a new project is an extremely large source of copper entering the WWTP, the effect of future projects on copper concentrations in effluent levels would be de minimis. If future projects discharge at copper concentrations lower than current average levels, the cumulative effect would be to slightly decrease copper concentration in effluent at the WWTP. If several new large projects discharge to the WWTP with copper levels twice current influent concentrations, copper concentration in effluent at the WWTP would increase by only 1 ppb (Phillips 2001).

As identified in 1994 LRDP EIR and WWTP Replacement Project EIR mitigation measures, source control and modification of treatment processes at the WWTP are the correct methods to use to ensure the plant meets discharge limits and will reduce the impact of copper concentrations in WWTP effluent on water quality to a less-than-significant level. Because the proposed project would not be an atypical source of copper, it would not contribute to an increased exceedence of the permit limit for copper in effluent and would make a small contribution to the concentration of copper in WWTP effluent. No additional mitigation measures are required to address project-level and cumulative water quality impacts of increased discharges of wastewater to the WWTP.

Therefore, the proposed project would not result in any discharges that would violate water quality standards and a less-than-significant impact would occur.

- b) The campus is underlain by the Lower Cache-Putah Basin, which is divided by relatively impervious soil layers into shallow/intermediate and deep aquifers. Both aquifers are used regionally for domestic, municipal, agricultural and industrial uses with wells being sunk to depths from 50 to 1,500 feet below the ground surface.

Groundwater Recharge

Approximately one acre of impervious surfaces would be created by the proposed project. This small addition would not lead to a measurable reduction in aquifer recharge. In addition, the 1994 LRDP EIR noted that "in the central campus much of the land area is already developed and the infill development proposed would not significantly reduce the potential for groundwater recharge" (page 4.8-18 in the 1994 LRDP Draft EIR). However, the 1994 LRDP EIR did conclude that the increase in impervious surface associated with development allowed under the 1994 LRDP could reduce the potential for groundwater recharge (Impact 4.8-3). Implementation of 1994 LRDP EIR Mitigation Measure 4.8-3, incorporated as part of the project, would reduce this impact to a less-than-significant level. In compliance with this measure, an effort will be made to minimize impervious surfaces during project design and stormwater drainage would be channeled, where possible, through swales and over other pervious surfaces to filter runoff and maximize percolation. No further mitigation is required.

The 1994 LRDP EIR concluded that development allowed under the 1994 LRDP, in conjunction with other regional development in the Lower Cache-Putah Creek Groundwater Basin, would increase the amount of impervious surface coverage and reduce groundwater recharge potential (Impact 4.8-9). Although Mitigation Measures 4.8-9 (a) and (b), incorporated into the proposed project, would reduce the magnitude of this impact, the impact would remain significant and unavoidable because the University of California cannot guarantee implementation of 1994 LRDP EIR Mitigation Measure 4.8-9 (b), which is not within the jurisdiction of the University to enforce and monitor. The proposed project would contribute to, but not exceed, the increase in impervious surface cover identified under the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the LRDP EIR and addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP EIR. As discussed in Appendix B, campus growth through 2014-15 is anticipated to increase impervious surface coverage beyond that anticipated under the 1994 LRDP. This impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

Deep Aquifer

The campus domestic/fire water system uses wells that draw from the deep aquifer. The proposed project would result in an increase in domestic water demand. Recent water use statistics estimate domestic water use in 1999 was approximately 818 million gallons per year (mgy). The Draft UC Davis Domestic Water Master Plan (West Yost 2000a) updated 1994 LRDP Draft EIR water use projections and assumptions and identified that campus development through 2005-06 would increase campus demand for water from the campus domestic/fire water system to approximately 1,080 mgy. Incremental growth in demand for water from the deep aquifer from 1999 to 2005-06 is projected at approximately 262 mgy. According to average assumptions identified in the

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Master Plan for mixed use facilities (157 gallons per year per asf), the proposed Mathematical Sciences Building (37,460 asf) would use approximately 6 mgy from the campus domestic/fire water system, an amount that is well within the water use projected for 2005-06.

The 1994 LRDP EIR identified that development under the 1994 LRDP would directly increase demand for water supplied from the deep aquifer (Impact 4.14-1). The proposed project would incrementally contribute to, but would not exceed, the increased demand for water from the deep aquifer identified in the 1994 LRDP EIR, as revised. Although implementation of 1994 LRDP EIR Mitigation Measure 4.14-1 (a), incorporated as part of the proposed project, would reduce the magnitude of the project's contribution to this impact, the impact would remain significant and unavoidable due to the limited existing data regarding groundwater. As stated on page 4.14-11 of the 1994 LRDP Draft EIR:

The limited existing data regarding groundwater elevations and the capacity of the deep aquifer cannot be used to conclude that the aquifer is capable of recharging. On the other hand, there is no evidence of any long-term groundwater depletion. The actual magnitude of the significance of the impact is unknown, because the status of the aquifer cannot be determined with available information. To ensure that this EIR takes a conservative approach, the EIR assumes that the impact is significant and unavoidable.

This impact was adequately analyzed in the 1994 LRDP EIR, and addressed in the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR.

The 1994 LRDP EIR, as revised, concluded that cumulative growth allowed under the 1994 LRDP, in conjunction with regional growth, would result in increased demand for water from the deep aquifer, considered a significant and unavoidable impact (Impact 4.14-11). Although implementation of 1994 LRDP EIR Mitigation Measure 4.14-11, incorporated as part of the proposed project, would reduce the magnitude of this impact, it would remain significant and unavoidable. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and was addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR.

As discussed in Appendix B, campus growth through 2014-15 is anticipated to increase the campus' demand for water from the deep aquifer beyond that assumed under the 1994 LRDP. While cumulative impacts 4.14-1 and 4.14-11 are anticipated to remain significant and unavoidable through 2014-15, these impacts and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

As discussed in section 4.14 (Utilities and Service Systems) of this Environmental Checklist, the project-level impact on the campus domestic/fire water utility system would be reduced to a less-than-significant level.

Shallow/Intermediate Aquifer

As discussed in Section III, Project Description, the proposed project would include landscaped grounds that would require irrigation. The campus relies on the shallow/intermediate aquifer to provide irrigation water on the central campus. The irrigation water required for landscaping associated with the proposed project is not anticipated to result in a significant change in the

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quantity of groundwater in the shallow/intermediate aquifer. The 1994 LRDP EIR considered the impact to the shallow/intermediate aquifer as a result of development allowed under the 1994 LRDP less-than-significant (Impacts 4.14-3 and 4.12) because aquifer monitoring data indicates that groundwater levels in the shallow/intermediate aquifer have been constant over the long-term, and developed land uses in the region would draw a smaller amount of water from the aquifer compared to agricultural uses. Although not required, implementation of 1994 LRDP EIR Mitigation Measure 4.14-3 (a), incorporated as part of the project, would ensure that the project includes utility water conservation measures. Consistent with 1994 LRDP EIR Mitigation Measure 4.14-3 (b), Facilities Services measures static water levels in all utility wells in the fall and spring of each year. This information, in addition to other groundwater monitoring/pumping and precipitation data, is used to help forecast annual water supplies and balance usage between groundwater and surface water. By continuing these actions, impacts to the shallow/intermediate aquifer will remain less-than-significant.

- c) Stormwater runoff from the proposed project site currently discharges into the South Fork of Putah Creek via the Arboretum Waterway. The proposed project would not alter the existing drainage pattern and would not result in significant erosion or siltation on- or off- site (as discussed in Item 9a, above). Therefore, no impact would occur.
- d) As described in Item 9a, above, the proposed project would result in an increase in surface runoff associated with a small increase in impervious surfaces (approximately one acre). The small increase in surface runoff associated with the proposed project would not increase the total amount of surface runoff over that anticipated and evaluated in the 1994 LRDP EIR and would not result in flooding on- or off- site. The impact is less-than-significant. Impacts to the campus drainage system capacity are evaluated in Item 9e, below.
- e) Runoff from the proposed Mathematical Sciences Building site would drain to the existing campus storm drainage system at inlets located to the north and south of the site. The 1994 LRDP EIR identified that new impervious surfaces associated with development allowed under the 1994 LRDP would increase surface runoff, which could exceed existing drainage capacity and result in localized flooding (Impact 4.8-2). In compliance with 1994 LRDP EIR Mitigation Measure 4.8-2 (a), incorporated into the proposed project, the existing campus storm drainage system has been assessed to determine adequacy to serve the proposed Mathematical Sciences Building, and the system was determined adequate to handle the additional associated runoff (O'Hearn 2002). In addition, an effort would be made to minimize impervious surfaces in landscape design, and stormwater drainage would be channeled, where possible, through swales and over other pervious surfaces to filter runoff and maximize percolation. If the campus decides to relocate the Hog Barn building, Mitigation Measure 4.8-2(a) would be implemented for the proposed relocation site. Therefore, the impact will be reduced to a less-than-significant level.
- f) Potential sources of water quality degradation resulting from the proposed project are discussed in Item 9a, above.
- g, h) The proposed project Mathematical Sciences Building site is located outside a 100-year flood plain, as defined by the Federal Emergency Management Agency (see 1994 LRDP Draft EIR Figure 4.8-2). Furthermore, the proposed project does not involve construction of housing. Consequently, the project would not expose people, property, or housing to water-related hazards associated with the 100-year flood plain. No impact would occur.

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- i) The proposed Mathematical Sciences Building site is not located near a levee or dam and would not be subject to risk of flooding due to failure of one of these structures. The campus is located approximately 23 miles downstream of the Monticello Dam (forming Lake Berryessa) and the Putah Creek Diversion Dam. An inundation study prepared by the U.S. Bureau of Reclamation showed that, in the case of a dam breach, the project site (as well as the campus and 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). Furthermore, as of June 2000, the integrity of Monticello Dam was determined to be in satisfactory condition and the dam exhibited no unusual cracks, seeps, or deformations. Therefore, exposure to inundation as a result of dam failure would be less-than-significant and no mitigation is required.
- j) The proposed project would not be located in an area subject to seiche, tsunami, or mudflow. The project site is flat and is not located in close proximity to any large water bodies. Therefore, no impact would occur.
- k) Standards of significance for hydrology and water quality impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the hydrology and water quality questions in the current Environmental Checklist. As discussed above, with the incorporation of relevant 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to hydrology and water quality that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.8-2 (a), 4.8-3, 4.8-4 (a), 4.8-5 (a), 4.8-6 (a) and (b), 4.8-8 (a) through (c), 4.8-9(a) and (b), 4.14-1 (a), 4.14-3(a) and (b), and 4.14-11 would be incorporated as part of the project. The proposed project would not result in new or significant hydrology and water quality impacts that have not already been adequately assessed in the 1994 LRDP EIR.

10. GEOLOGY AND SOILS

Background

The campus is located within 100 miles of a number of fault zones. However, neither the campus nor the City of Davis is located within an Alquist-Priolo Special Study Zone. The East Valley fault, located approximately beneath Russell Ranch, is a subsurface, inferred fault that has not created any surface rupture. No other known faults traverse the campus. According to the Preliminary Map of Maximum Expectable Earthquake Intensity in California, the campus is located in a "moderate" severity zone. The University of California has adopted a Seismic Safety Policy, which requires the identification and correction of potential earthquake hazards in existing structures and requires designs for new building structures that avoid seismic hazards.

Soil conditions on the campus include dense subsurface soils, low groundwater levels and flat topography, suggesting that secondary seismic effects, such as liquefaction, are unlikely. Moderate to high shrink-swell potential is found in all underlying soils, which can cause damage to foundations and other structures. Soils underlying the campus are shown in Figure 4.9-1 on page 4.9-6 of the 1994 LRDP Draft EIR. Soil descriptions and constraints are described on pages 4.9-5 through 4.9-9 of the 1994 LRDP Draft EIR.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered a geotechnical impact significant if campus or regional growth would:

- expose people, structures or property to major seismic hazards such as groundshaking or liquefaction; or
- expose people, structures or property to damage from soil hazards such as shrink-swell potential or low soil strength.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 related to geotechnical factors and soils are addressed in Section 4.9 (Geotechnical Factors) of the 1994 LRDP Draft EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented in the table. The proposed project is within the scope of the geotechnical analysis presented in the 1994 LRDP EIR. Please note that cumulative regional impact 4.9-3 included mitigation measures to reduce the impact to a less-than-significant level. However, this impact is identified as significant and unavoidable because the University of California cannot guarantee implementation of mitigation measures that fall within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would likely increase the number of people and structures exposed to potential geology and soils hazards. However, campus growth through 2014-15 is not anticipated to result in any new cumulative geology

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and soils impacts different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential cumulative hydrology and water quality impacts and the availability of additional feasible mitigation measures during the LRDP update process.

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.9-1	Development allowed under the 1994 LRDP could expose people, structures and property to strong ground shaking and secondary seismic effects from earthquakes in local or regional faults.	S	LS
4.9-3	Cumulative development, in conjunction with development allowed under the 1994 LRDP, would increase the cumulative number of people living and working in the Davis area who would be exposed to strong ground motion and other potential seismic effects from earthquakes in local or regional faults.	SU	SU

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

Mitigation measures in the 1994 LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.9-1(a)** – *Prior to final design, the campus shall review and approve all building plans for compliance with the Uniform Building Code and Title 24.*
- **LRDP EIR Mitigation Measure 4.9-1(b)** – *Prior to occupancy, the campus shall review and approve final building designs for appropriate seismic safety provisions. Appropriate seismic safety provisions shall include anchoring, bracing or restraining nonstructural elements such as furniture, shelving or equipment.*
- **LRDP EIR Mitigation Measure 4.9-1(c)** – *Each department required to maintain an Injury and Illness Prevention Plan (IIPP) shall incorporate appropriate seismic safety policies. As part of each Department's IIPP, earthquake preparedness drills shall be performed annually by building occupants.*
- **LRDP EIR Mitigation Measure 4.9-3(a)** – *Implementation of Mitigation Measures 4.9-1 (a) through (e).*
- **LRDP EIR Mitigation Measure 4.9-3(b)** – *City of Davis General Plan implementing and guiding policies for seismic safety recommend that the City:*
 - (i) *continue to monitor studies of seismic activity in the region, and take appropriate action if significant seismic hazards, including earthquake faults, are discovered in the planning area; and*
 - (ii) *continue to update and enforce Building Code requirements for seismic and geologic safety.*

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- **LRDP EIR Mitigation Measure 4.9-3(c)** – City of Davis General Plan implementing and guiding policies regarding expansive soils recommend that the City:
 - (i) investigate and mitigate geologic soils hazards, or locate development away from such hazards in order to preserve life and protect property;
 - (ii) require submission of a soils report for development sites where soils conditions are not well known;
 - (iii) require as a condition of approval of development, mitigation of any soils hazards identified; and
 - (iv) require that areas of highly unstable soils, on which construction cannot feasibly be made safe, be used for open space, including greenbelts and parks. Require that site plans for development delineate the hazardous areas, and show the proposed use of those areas as greenbelts or parks.

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

GEOLOGY AND SOILS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
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?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 checked="" type="checkbox"/>	<input 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"/>
f) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) (i) The campus is not located within an Alquist-Priolo Earthquake Fault Zone. Table 4.9-2 on page 4.9-3 of the 1994 LRDP Draft EIR lists selected regional faults. As described on page 4.9-2 of the 1994 LRDP Draft EIR, the closest known active fault mapped by the United States Geological Survey is the Dunnigan Hill fault located approximately 12 miles northwest of the main campus. The closest branches of the seismically active San Andreas fault system are the Green Valley (32 miles southwest) and the Rodgers Creek (47 miles southwest) faults. The San Andreas fault is located approximately 67 miles to the southwest. Consequently, the proposed project would not expose people to potential substantial adverse effects involving rupture of a known earthquake fault. No impact would occur.

a) (ii,iii) Seismic groundshaking is discussed on page 4.9-2 of the 1994 LRDP Draft EIR:

According to the Preliminary Map of Maximum Expectable Earthquake Intensity in California, prepared by the California Department of Mines and Geology, the campus is located in a "moderate" severity zone, representing a probable maximum earthquake intensity of VII or VIII on the Modified Mercalli Scale which corresponds to an earthquake measuring 6.0 to 6.9 on the Richter Scale...Effects of groundshaking during such an event could include structural damage to stucco, masonry walls, and chimneys exposing people to the associated risks of falling objects and building collapse.

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The 1994 LRDP Draft EIR further states on page 4.9-4 that “some soil conditions on the campus include deep subsurface soils, low groundwater levels, and flat topography, suggesting that secondary seismic effects, such as liquefaction, are unlikely. Typically [though], the soils deposited in the Central Valley consist of loose alluvial deposits and could be susceptible to liquefaction.” Pursuant to the 1994 LRDP EIR (page 4.9-4 of the LRDP Draft EIR), localized soil assessments would be performed for the proposed project site and would further identify site-specific liquefaction potential.

The proposed project involves the construction of approximately 37,460 asf of enclosed building space and introduction of approximately 120 new campus employees. The 1994 LRDP EIR identified that development allowed under the 1994 LRDP could expose people, structures, and property to strong groundshaking and secondary seismic effects (Impact 4.9-1). 1994 LRDP EIR Mitigation Measures 4.9-1 (a) through (c), incorporated into the proposed project, would reduce this impact to a less-than-significant level. These mitigation measures would ensure that the proposed building is designed and constructed in compliance with applicable California Uniform Building Code (CUBC) Zone 4 and Title 24 standards, and that seismic safety provisions and policies are maintained. No further mitigation is required.

The 1994 LRDP EIR concluded that development allowed under the 1994 LRDP, in conjunction with cumulative development in the region, would increase the number of people living and working in the Davis area who would be exposed to strong ground motion and other potential seismic effects from earthquakes in local or regional faults (Impact 4.9-3). Although 1994 LRDP EIR Mitigation Measures 4.9-3 (a) through (c), incorporated into the proposed project, were identified to reduce the magnitude of this impact, the impact would remain significant and unavoidable because the University of California cannot guarantee implementation of Mitigation Measures 4.9-3 (b) and (c), which fall within other jurisdictions to enforce and monitor. As discussed in Section IV of this Tiered Initial Study, the proposed project is consistent with the 1994 LRDP population projections for 2005-06. As a result, the proposed project would contribute to, but not exceed the increase in population exposed to ground motion recognized in the 1994 LRDP EIR. The significant and unavoidable impact associated with seismic effects was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, campus growth through 2014-15 is anticipated to increase the number of people living and working in the region who could be exposed to seismic effects. This cumulative impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

- a) (iv) The proposed project site and surrounding area is characterized by flat topography and therefore would not be subject to landslides. No impact would occur.
- b) The proposed project site is underlain by Yolo Series soils (see Figure 4.9-1 in the 1994 LRDP Draft EIR). This soil, found on alluvial fans, exhibits moderately rapid permeability, very slow runoff, minimal hazard of erosion, and moderate shrink-swell potential.

The proposed project would involve earthmoving activities, including grading, trenching, and excavation, which could result in increased rates of erosion during construction. The proposed project would also increase impervious surfaces by approximately one acre, somewhat increasing

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runoff from the project site and potentially increasing rates of erosion. However, the erosion hazard of the soil under the proposed project site is minimal. In addition, the proposed project would be designed to ensure that potential adverse effects related to soil constraints would be minimized to the maximum feasible extent in accordance with applicable CUBC requirements. 1994 LRDP EIR Mitigation Measures 4.8-4 (a), 4.8-5 (a), and 4.8-8 (a) through (c), incorporated into the proposed project as discussed in Item 9 - Hydrology and Water Quality, would further reduce erosion hazards associated with the proposed project. Therefore, the impact of substantial soil erosion or loss of topsoil would be reduced to a less-than-significant level.

- c) Lateral spreading, liquefaction potential, or other unstable soil conditions have not been identified as development constraints on campus. The proposed project site is not located on soil or strata that are unstable (see discussion in Item 10b, above). Subsidence due to groundwater withdrawal has been identified at a few locations in Yolo County; however, none of the locations are on or near the campus (Yolo County Community Development Department 1983). Further, the 1994 LRDP EIR did not identify impacts associated with subsidence. Although no significant adverse geologic or soil conditions are anticipated, in compliance with the CUBC, a site-specific geotechnical study would be performed by a registered geologist or engineering geologist prior to building design (as noted on page 4.9-10 in the 1994 LRDP Draft EIR). Recommendations presented in the geotechnical study would be implemented in the design and construction of the proposed project to account for any identified hazards. The proposed project is therefore not anticipated to result in any new or significant impacts that have not already been evaluated in the 1994 LRDP EIR. This impact is considered less-than-significant and no mitigation is required.
- d) As described in Item 10b, above, soils under the proposed project site are characterized as having moderate to high shrink-swell (expansion) potential, which could result in structural damage. The 1994 LRDP EIR concluded that impacts related to development on expansive soils would be less-than-significant, because all development would be required to comply with the CUBC for building design and construction. The proposed project would also incorporate Mitigation Measure 4.9-1(a), requiring review of facility design to ensure compliance with the CUBC. Therefore, potential adverse effects associated with expansive soils or other geotechnical constraints of the proposed project site would be reduced to less-than-significant levels.
- e) The proposed project does not involve the installation or use of septic tanks or alternative wastewater disposal systems. Wastewater from the proposed project would be treated at the campus Wastewater Treatment Plant. No impact would occur.
- f) Standards of significance for geology and soils impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the geology and soils questions in the current Environmental Checklist. Based on the discussion presented above, with the incorporation of 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to geology and soils that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.9-1 (a) through (c) and 4.9-3 (a) through (c) would be incorporated as part of the project. The proposed project would not result in new or significant geology and soils impacts that have not already been adequately assessed in the 1994 LRDP EIR.

11. MINERAL RESOURCES

Background

Natural gas has been found on the main campus and at the Russell Ranch. Natural gas extraction techniques allow wells to be placed at considerable distances from the deposits. No other known or potential mineral resources have been identified on the UC Davis campus. As such, the 1994 LRDP EIR did not identify any impacts to mineral resources.

1994 LRDP EIR

Mineral resources are briefly addressed in Section 4.9 (Geotechnical Factors) of the 1994 LRDP Draft EIR. The 1994 LRDP EIR did not identify impacts of campus development through 2005-06 on mineral resources. As discussed in the Cumulative Impacts Analysis presented as Appendix B of this document, campus growth through 2014-15 is not expected to introduce any new cumulative mineral resource impacts or require new mitigation measures.

MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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"/>
c) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) As described on page 4.9-9 of the 1994 LRDP Draft EIR, there are no known mineral resources identified on the main campus. Natural gas has been identified under a portion of the campus, but development of the proposed project would not affect the availability of any mineral resource. Therefore, no impact would occur.
- b) The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineation on a local general plan, specific plan, or other land use plan. No impact would occur.
- c) The 1994 LRDP EIR did not identify any standards of significance with respect to mineral resources. No impact would occur.

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Summary

The proposed project would not result in any new or significant mineral resource impacts. No mineral resource impacts were identified in the 1994 LRDP EIR.

12. CULTURAL RESOURCES

Background

The 1994 LRDP EIR describes known cultural (prehistoric and historic) resources on the campus. Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally dating prior to contact with people of European descent. Historical resources include structures, features, artifacts and sites that date from Euroamerican settlement of the region. Known prehistoric and historic cultural resources that occur on campus are discussed below.

Prehistoric Resources: At the time of first European contact, the campus was within the territory of the Patwin. The Patwin controlled a 90-mile section of land running from Suisun Bay to Princeton on the Sacramento River, and from Long Valley-San Pablo Bay on the west to the Sacramento River on the east. Record searches were conducted for the central campus, west campus, south campus, Russell Ranch and the South Davis Research Park. Surface and subsurface cultural resource surveys have been performed for extensive areas of the campus as part of the site work for campus construction projects. Prehistoric Native American sites, including burials, have been identified at several locations on the central campus.

Historic Resources: 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 Historic Resources Inventory, and several are considered significant historical resources. There are more than 50 structures on campus that are over 45 years old. Most of these have not been evaluated for historical significance. Future analysis will be required under CEQA and the National Historic Preservation Act for any buildings over 45 years old that could be damaged or destroyed.

1994 LRDP EIR Standards of Significance

An impact was considered significant in the 1994 LRDP EIR if campus or regional growth would:

- result in the damage or destruction of prehistoric sites or artifacts that would meet CEQA and/or federal criteria for significance; or
- result in the damage or destruction of historical structures, features, artifacts, landscaping or sites that would meet CEQA, federal, or campus criteria for significance.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through year 2005-06 on cultural resources are addressed in Section 4.10 (Cultural Resources) of the 1994 LRDP Draft EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after the application of mitigation measures identified in the 1994 LRDP EIR are also presented. The proposed project is within the scope of the cultural resources analysis presented in the 1994 LRDP EIR. The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would increase development beyond that anticipated under the

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1994 LRDP and could contribute to the cumulative damage or destruction of cultural resources. However, campus growth through 2014-15 is not anticipated to result in any new cumulative cultural resources impacts different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential cumulative cultural resources impacts and the availability of additional feasible mitigation measures during the LRDP update process. Please note that cumulative regional impact 4.10-4 included mitigation measures to reduce the impact to a less-than-significant level. However, this impact was identified as significant and unavoidable because the University of California cannot guarantee implementation of mitigation measures that fall within other jurisdictions to enforce and monitor.

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.10-1	Excavation, grading and construction activities could damage or destroy buried cultural (prehistoric or historic) resources.	SU	SU
4.10-2	Development allowed under the 1994 LRDP could damage or destroy historical structures during construction and/or renovation activities.	S	LS
4.10-4	Development allowed under the 1994 LRDP could contribute to a cumulative loss of prehistoric and historic resources in Yolo and Solano Counties.	SU	SU

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

Mitigation measures identified in the 1994 LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.10-1(a)** – *Prior to project approval, the campus shall determine the level of archaeological investigation that is appropriate for the project site. The levels are:*

Minimum: in areas of known archaeological sensitivity (i.e. known sites) excavation less than 18” deep and in a relatively small area (e.g. routine maintenance and operations such as repairing broken facilities, a short trench for lawn irrigation, tree planting, etc.); in other areas, excavation less than 36” deep and in a relatively small area.

Moderate: excavation below 36” 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.

Intensive: excavation below 18” and/or over a large area on any site that is within 800’ of the historic alignment of Putah Creek (prior to 1880) or that is adjacent to a recorded archaeological site.

- **LRDP EIR Mitigation Measure 4.10-1(b)** – *For sites requiring minimum level of investigation, the following steps will be taken.*

- (i) *Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the campus if anything is found. In addition, campus employees whose work involves routinely*

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disturbing the soil shall be trained to recognize evidence of potential archaeological sites and artifacts.

- (ii) If resources are discovered during activities, all soil disturbing work within 100' of the find shall cease. The resources shall be evaluated by a qualified archaeologist who will determine and advise the campus on the potential for the activity to affect a significant archaeological resource.*
- (iii) If the activity might affect a significant archaeological resource, consistent with CEQA and Appendix K of the CEQA Guidelines addressing archaeological impacts a plan for surveying the remainder of the site and conducting appropriate data recovery and other mitigations shall be prepared and implemented using the services of a qualified archaeologist.*
- (iv) If human remains are found, the County coroner shall be contacted. The coroner shall contact the Native American Heritage Commission, which shall notify the appropriate descendant. The campus shall coordinate re-interment of Native American remains with the NAHC and the designated descendant.*
- **LRDP EIR Mitigation Measure 4.10-2(a)** – *Prior to altering a structure at least 45 years of age, the Campus shall develop a process for identifying its relative historic value. In addition to CEQA and other State guidelines, the process shall consider the role of structures in the history of the University system, the Campus and the region.*
- **LRDP EIR Mitigation Measure 4.10-2(b)** – *If any existing structure on a proposed construction site is over 45 years of age:*
 - (i) the Campus shall use the process developed under Mitigation Measure 4.10-2(a) to determine whether the structure is historically significant;*
 - (ii) if historically significant, the building shall be preserved and reused when feasible;*
 - (ii) if historically significant, and preservation and reuse cannot occur on site, the historical building shall be moved to an area set aside by the Campus for historic buildings of the same era when physically and financially feasible; and*
 - (iv) If a historically significant structure is to undergo major renovation, or be moved and/or destroyed the Campus shall produce a record of the building similar to National Parks Scenic standards (Historical American Building Surveys). A copy of the record shall be deposited with the University Archives, Shields Library Special Collections.*

Adequate recordation would include, at a minimum, the following:

- *the development of site-specific history and appropriate contextual information regarding the particular resource; in addition to archival research and comparative studies, this task could involve limited oral history collection;*

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- *accurate mapping of the noted resources, scaled to indicate size and proportion of the structures;*
 - *architectural descriptions of affected structures;*
 - *photodocumentation of the designated resources, both in still and video formats; and*
 - *recording of measured architectural drawings, in the case of specifically designated buildings of higher architectural merit.*
- **LRDP EIR Mitigation Measure 4.10-2(c)** – *Prior to major renovation, moving or destroying a historically significant structure, the Campus shall insure that historically significant artifacts within the building and the surrounding area shall be recorded and deposited with the appropriate museum.*
 - **LRDP EIR Mitigation Measure 4.10-4(a)** – *Implement Mitigation Measures 4.10-1(a) through 4.10-1(d), 4.10-2(a) through (c) and 4.10-3(a) through (c).*
 - **LRDP EIR Mitigation Measure 4.10-4(b)** – *The Yolo and Solano County General Plans and the City of Davis General Plan contain policies which address the preservation of cultural resources. It is within the jurisdiction of these agencies to implement the General Plan policies which encourage the protection and restoration of cultural resources.*

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

CULTURAL RESOURCES		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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 §15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §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"/>
e)	Cause a substantial adverse change in the significance of a historic landscape feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
f) Exceed an applicable LRDP Program EIR Standard of Significance?	■	□	□	□	□

Discussion

- a) The vacant Hog Barn building is currently located on the project site and has historically been used for hog raising at UC Davis. The historical significance of the facility has been evaluated, as summarized below (JRP 1999).

The Hog Barn building, occupying the eastern portion of the Hog Barn facility, was originally constructed in 1913 and includes two major components: a two-story wood frame shingle-sided element facing east (housing office and storage space on the first floor and a hay/grain loft on the second floor); and a one-story wood frame element to its rear (housing farrowing pens). The building has been the site of the Animal Husbandry (later Animal Science) Department's swine operation from the 1910s through the 1990s. The building represents one of the few remaining structures associated with early campus development that retain a high degree of integrity (including original location, type of design and materials, and quality of workmanship). At a local level, the building played an important role in the founding years of the farm that became UC Davis, an institution that is well known for its agricultural education and contributions. Hog raising experts have also identified the building as a good example of hog barn design in California during the early twentieth century. Therefore, the building is considered to meet the following criteria for listing on the CRHP at both local and statewide levels of significance:

Criterion 1: Resources associated with important events that have made a significant contribution to the broad patterns of our history.

Criterion 3: Resources that embody the distinctive characteristics of a type, period, or method of construction, or represents the work of a master.

The original outdoor hog pens to the west of the Hog Barn building were built soon after the Hog Barn was completed. The original pens were replaced by modern outdoor pens, which were built and remodeled in stages in the 1960s, 1980s, and 1990s. The existing pens are planned for demolition as part of the separate Engineering Unit 3 project. These pens are not considered an excellent example of a style or type of architecture, and are not individually associated with historically significant events or persons. Therefore, the pens are considered ineligible for the CRHR because they have not achieved exceptional significance in the past fifty years.

To accommodate the proposed Mathematical Sciences Building, the campus is considering the three following potential plans for the approximately 4,600 gsf Hog Barn building:

- Demolition of the building.
- Relocation to a site in the central campus located southwest of the Silo complex, north of Bainer Hall, east of the Architects & Engineers barn, and south of Temporary Building 200. This alternative could provide office, student activity, and/or classroom space.

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- Relocation to a currently undefined site in the west campus, most likely adjacent to existing buildings. This alternative would provide field support and storage space for a field teaching and research program.

The 1994 LRDP Draft EIR identified that development allowed under the 1994 LRDP could damage or destroy historical structures during construction and/or renovation activities (Impact 4.10-2). The 1994 LRDP EIR determined that this impact would be reduced to a less-than-significant level with incorporation of 1994 LRDP EIR Mitigation Measures 4.10-2 (a) and (b). In compliance with Mitigation Measure 4.10-2(a), the historical value of the Hog Barn building has been evaluated and the structure was determined to meet criteria for listing on the CRHP (JRP 1999). In compliance with 1994 LRDP EIR Mitigation Measure 4.10-2(b), the campus would produce an adequate record of the building to mitigate demolition or relocation of the building.

Although the 1994 LRDP EIR determined that this impact could be reduced to a less-than-significant level, according to Section 15064.5 of the CEQA Guidelines, a project that involves a substantial adverse change in the significance of a historical resource (or a project that results in physical demolition, destruction, relocation, or alteration such that the historical significance of a structure would be materially impaired) may have a significant effect on the environment. This potentially significant project-level impact will be addressed in the Focused Tiered EIR for the project. In addition, the Focused Tiered EIR will evaluate the project's contribution to the cumulative loss of historic resources in the region (1994 LRDP EIR Impact 4.10-4).

- b) As discussed on page 4.10-9 of the 1994 LRDP Draft EIR, any time earth is disturbed, buried resources can be damaged or destroyed (Impact 4.10-1). This risk on campus is highest along the historic banks of the tributaries and slough channels of Putah Creek. The proposed Mathematical Sciences Building site is just within the 800-foot zone of cultural sensitivity bordering the historic channel of Putah Creek (now the campus Arboretum waterway). The proposed site is approximately 1,500 feet from the closest known cultural resource site (at the site of the Robert and Margrit Mondavi Center for the Performing Arts). Cultural resources were also reported, but not confirmed, at the Tercero Field, a site located approximately 1,000 feet to the west.

Consistent with 1994 LRDP EIR Mitigation Measure 4.10-1(a), incorporated into the proposed project, archeological surveys and auger testing were conducted on the proposed Mathematical Sciences Building site in 1997. Subsurface auger borings were excavated at three locations within the proposed project site and three locations adjacent to the project site. Surface surveys and evaluation of borings did not identify significant cultural material (Pacific Legacy 1997). In addition, no cultural materials were uncovered during construction of the adjacent Engineering Unit 3 and Academic Surge buildings. Therefore, further cultural monitoring is not recommended. In compliance with recommendations from a qualified archaeologist and 1994 LRDP EIR Mitigation Measure 4.10-1(b), if any cultural resources are discovered during construction activities, work in the project vicinity would halt immediately and a qualified professional archaeologist would be consulted to evaluate the discovery. In the unlikely chance that human burials are encountered, all work would stop and the Yolo County coroner would be contacted. If the campus decides to relocate the Hog Barn building, Mitigation Measures 4.10-1(a) and (b) would also be implemented for the proposed relocation site. With incorporation of these measures, the project-level impact on cultural resources would be reduced to a less-than-significant level.

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The 1994 LRDP EIR concluded that implementation of the 1994 LRDP could contribute to a cumulative loss of buried cultural resources on the campus (Impact 4.10-1) and in Yolo and Solano counties (Impact 4.10-4). Although 1994 LRDP EIR Mitigation Measures 4.10-1 (a) and (c) and 4.10-4 (a) and (b), incorporated into the proposed project, would reduce the magnitude of these cumulative impacts, the cumulative impacts would remain significant and unavoidable because even if cultural resources are adequately recorded, destruction and/or removal from their place of origin reduces their value as a resource. In addition, implementation of Mitigation Measure 4.10-4(b) is not within the jurisdiction of the University to enforce and monitor. Significant and unavoidable 1994 LRDP EIR Impacts 4.10-1 and 4.10-4 were adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, these cumulative cultural resource impacts identified in the 1994 LRDP EIR are anticipated to remain significant and unavoidable through 2014-15. These impacts and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

- c) As described on page 4.9-1 of the 1994 LRDP Draft EIR, subsurface soils on campus are comprised of alluvial sediment (to a depth of up to 3,000 feet below the surface) deposited by Putah Creek over the last five million years. Fossilized remains have been found in soils of this type. Although not restricted to specific soil depths, such fossils would likely be encountered in large, deep excavations or contouring-type activities, such as those associated with mining, quarrying, or road building, in which substantial amounts of rock or unconsolidated materials are exposed. The likelihood of damaging or destroying paleontological resources at the proposed project site is minimal because construction of the proposed project would not involve deep excavations (i.e., deeper than 20 feet below ground surface). Implementation of the proposed project would not result in any impacts to unique geological features, as none have been identified on the proposed project site. Therefore, no impacts on paleontological resources or unique geologic features are anticipated to occur.
- d) In compliance with 1994 LRDP EIR Mitigation Measure 4.10-1(b), incorporated into the proposed project, should human remains be encountered during construction, work in the vicinity would halt and the County Coroner would be notified as stipulated by Public Resources Code 5097. Should the remains be determined to be Native American, Native American consultation would be carried out. Implementation of 1994 LRDP EIR Mitigation Measure 4.10-1(b) would reduce the project's potential impact to human remains to a less-than-significant level.
- e) The proposed project would not involve demolition of landscape features meeting the requirements of historic significance because no such features are known to occur on the proposed project site. The site is primarily developed hardscape and includes some softscape areas consisting of grass lawn, ornamental plantings, and a small amount of non-native ruderal vegetation. No impact would occur.
- f) Standards of significance for cultural resources impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the cultural resources questions in the current Environmental Checklist. As discussed above, under item 12(a), the proposed project could damage or destroy the Hog Barn building. This potentially

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significant impact would exceed a 1994 LRDP EIR standard of significance and it will be evaluated further in the Focused Tiered EIR for the project.

Summary

1994 LRDP EIR Mitigation Measures 4.10-1 (a) and (b), 4.10-2 (a) and (b), and 4.10-4 (a) and (b) are incorporated into the proposed project. The proposed project could potentially result a significant impact to a historical resource that has not already been adequately assessed in the 1994 LRDP EIR. Therefore, this potential impact will be evaluated further in the Focused Tiered EIR.

13. AESTHETICS

Background

To the south and west, the campus is bordered by orchards, tilled fields, and pastures that are interspersed with rural homes and agricultural structures. The City of Davis is adjacent to the eastern and northern boundaries of the campus. The City is primarily composed of one and two story homes and businesses. The downtown area retains the atmosphere of a small college town.

Each of the major components of the campus has a distinct visual character. The central campus is the most developed region of campus with a large number of academic and support buildings. Sproul Hall on campus is the tallest building in Yolo County at nine stories tall, and few campus buildings are more than four-stories high. The low buildings and landscaping, combined with the urban location, keep night lighting from appearing particularly intrusive to individuals in nearby buildings and residences. The central campus is extensively landscaped, with mature vegetation and trees masking the mass of some academic buildings and obscuring long-range views. The Quad, a large lawn between the Memorial Union and Shields Library, is a focal point of the campus.

The proposed Mathematical Sciences Building would be located on the central campus at a site that is currently occupied by the vacant Hog Barn building. The project site can be viewed from three adjacent academic building sites (Engineering Unit 3, Academic Surge, and the Crocker Nuclear Laboratory), from California Avenue, and from the site of the Physical Plant (located east of the project site across California Avenue).

The 1994 LRDP identified features of the visual environment that are valued by the campus community and should be preserved. For the central campus, these features include: (1) the large, open lawn of the Quad at the heart of the campus, (2) the framework of tree-lined streets, particularly around the Quad where the street tree branches arch to create a canopy overhead, (3) the Arboretum, with its large trees and variety of landscapes along the waterway, (4) the shingle-sided buildings from the founding years of the University Farm, (5) buildings from the second era of campus development such as Hart Hall and Walker Hall, (6) the open, green lawns that face the community along Russell Boulevard and A Street, and (7) bicycles.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to aesthetics significant if campus or regional growth would:

- allow incompatible development in or near areas with high visual quality, such as Putah Creek and the Arboretum Waterway, or substantially affect the valued elements of the visual landscape identified in the LRDP.
- result in structures that would disrupt views of surrounding agricultural lands, the Coast Range, or the Sierra Nevada; or
- create substantial new sources of artificial light and/or glare.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through 2005-06 on aesthetics are discussed in Section 4.11 (Visual Quality/Aesthetics) of the 1994 LRDP Draft EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented. The proposed project is within the scope of the analysis in the 1994 LRDP EIR. Please note that cumulative regional impact 4.11-5 included mitigation measures to reduce the impact to a less-than-significant level. However, this impact was identified as significant and unavoidable because the University of California cannot guarantee implementation of the mitigation measures that fall within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would increase development beyond that anticipated under the 1994 LRDP and could contribute to the cumulative degradation of aesthetic resources. However, campus growth through 2014-15 is not anticipated to result in any new cumulative aesthetic resource impacts different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential cumulative aesthetic resource impacts and the availability of additional feasible mitigation measures during the LRDP update process.

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.11-1	Structures built on the Central Campus under the 1994 LRDP could affect valued elements of the Central Campus visual landscape identified in the LRDP.	PS	LS
4.11-4	Structures built under the LRDP could create glare, artificial light, heat and shade, making the immediate area uncomfortable for people.	PS	LS
4.11-5	Development allowed under the 1994 LRDP, in conjunction with other development in the region, would contribute to a cumulative alteration of the rural character of Yolo and Solano Counties.	SU	SU

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

Mitigation measures in the LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.11-1(a)** – *New structures in the Central Campus shall be designed to be compatible with those visual elements and policies identified in the LRDP.*
- **LRDP EIR Mitigation Measure 4.11-1(b)** – *Prior to approval of preliminary drawings, a campus Design Review Board shall determine that the designs are consistent with the LRDP and applicable district planning guidelines for the district within which the new structure will be located.*

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- **LRDP EIR Mitigation Measure 4.11-1(c)** – Prior to siting any new structure on the Central Campus, the campus shall identify major view corridors, taking into consideration the relationship of the view to each affected neighboring district.
- **LRDP EIR Mitigation Measure 4.11-1(d)** – The campus Design Review Board shall review building designs to ensure that structures are not within major view corridors, except for structures that are designed to protect critical views.
- **LRDP EIR Mitigation Measure 4.11-4(a)** – Prior to design approval of the first structure approved following adoption of the 1994 LRDP, the campus shall develop guidelines to minimize discomfort from light, heat, and glare.

The guidelines could include, but would not be limited to, building surfaces, landscaping, orientation and exposure, and lighting.

- **LRDP EIR Mitigation Measure 4.11-4(b)** – Prior to design approval of any building, the campus Design Review Board shall assess the building design for compliance with the guidelines developed under Mitigation Measure 4.11-4(a).
- **LRDP EIR Mitigation Measure 4.11-5(a)** – Implement Mitigation Measure 4.11-2 and 4.11-4(a) and (b).
- **LRDP EIR Mitigation Measure 4.11-5(b)** – The City of Davis General Plan, Yolo County General Plan, and Solano County General Plan contain policies that address the preservation and protection of agricultural land. It is within the jurisdiction of these agencies to implement the General Plan policies which support the conservation of agricultural land and the prohibition of new development in designated agricultural areas.

The mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

AESTHETICS		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Substantially damage scenic resources, including, but not limited to, trees, rocks outcroppings, 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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"/>
e) Affect valued elements of the Central Campus visual landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) The UC Davis campus occupies fairly flat terrain and is substantially surrounded by one to four-story development and agricultural uses. Consequently, views from numerous areas on and around the campus are relatively expansive, and on clear days the Sierra and the Coast Ranges can be seen. However, due to existing buildings and mature vegetation, the proposed project site does not currently offer views of the Sierra or the Coast Ranges, and therefore the proposed project would not have a substantial adverse affect on a scenic vista. No impact would occur.
- b) SR 113 and I-80 in the vicinity of UC Davis are not designated scenic highways. The project would not impact scenic resources within a state scenic highway. No impact would occur.
- c,e) The visual character of the Mathematical Sciences Building site would change from the historic two-story Hog Barn building and modern outdoor pens to a modern four-story academic building. In addition, the project site would be developed to include more formal landscaping, outdoor lighting, and a pedestrian path along the southern side of the building.

The 1994 LRDP EIR determined that depending on location, height, massing, design, and landscaping, new structures could affect valued elements of the central campus visual landscape identified in the 1994 LRDP (Impact 4.11-1). As discussed in the Background discussion above, the campus has identified several visual elements of value to the campus, including the shingle-sided buildings from the founding years of the University Farm. To accommodate the proposed Mathematical Sciences Building, the project would need to demolish or relocate the Hog Barn building, which is a shingle-sided building from the founding years of the University Farm.

1994 LRDP EIR Mitigation Measure 4.11-1(a) would be implemented to ensure that the proposed Mathematical Sciences Building would be designed to extend the visual character of the campus. In addition, consistent with 1994 LRDP EIR Mitigation Measures 4.11-1(b) through (d), incorporated as part of the proposed project, the design of the project would be reviewed by the campus Design Review and Advisory Work Group (formerly the campus Design Review Board). This group is composed of the Campus Architect, Campus Planner, and program representatives.

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Even with the implementation of these 1994 LRDP EIR mitigation measures, the proposed project would require demolition or relocation of the Hog Barn building, which contributes to the character of the site and is considered a valued element of the central campus' visual landscape. Demolition or relocation of the building could result in a substantial adverse change in the valued element of the central campus' landscape. This potentially significant impact will be evaluated further in the project's Focused Tiered EIR.

The 1994 LRDP EIR determined that development allowed under the 1994 LRDP, in conjunction with other development in the region, would contribute to a cumulative alteration of the rural character of Yolo and Solano counties (Impact 4.11-5). Although 1994 LRDP EIR Mitigation Measures 4.11-5 (a) and (b) would be implemented as part of the proposed project, this impact was considered significant and unavoidable because implementation of 1994 LRDP EIR Mitigation Measure 4.11-5(b) is not within the University's jurisdiction to enforce and monitor. This cumulative impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, this cumulative impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

- d) Glare is caused by light reflections from pavement, vehicles, and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. At night, artificial light can cause glare. The proposed project would introduce increased lighting and light levels to the proposed project site. The 1994 LRDP EIR identified that structures built under the 1994 LRDP could create glare, artificial light, heat, and shade, making the immediate area uncomfortable for people (Impact 4.11-4). In compliance with 1994 LRDP EIR Mitigation Measure 4.11-4(a), the campus has developed guidelines to minimize discomfort from light, heat, and glare. All project lighting would be installed in accordance with campus Facilities Design Standards including cut-off lighting in buildings to reduce glare. In addition, the lighting standards of UC Davis' Architects and Engineers would also be implemented. With implementation of 1994 LRDP Mitigation Measure 4.11-4(a), the potential impact associated with light and glare would be reduced to a less-than-significant level.

- f) Standards of significance for aesthetics impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the aesthetics questions in the current Environmental Checklist. As discussed above, with the incorporation of relevant 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to aesthetics that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.11-1 (a) through (d), 4.11-4 (a) and (b), and 4.11-5 (a) and (b) are incorporated into the proposed project. The proposed project would not result in new or significant aesthetics impacts that have not already been adequately assessed in the 1994 LRDP EIR.

14. PUBLIC SERVICES

Background

Fire Protection

The UC Davis Fire Department provides fire protection, hazardous materials incident response, and emergency medical service to the campus. Recent figures show the campus Fire Department employs 18 line firefighters, in addition to fire prevention, supervisor, and support personnel. In addition, nine student firefighters are also employed (Ebner 2001). Fire protection service demand is based on a ratio of personnel to increased square footage (3.5 fire fighters per 1,000,000 gsf). The campus Fire Department entered into automatic aid agreements in 1994 with the City of Davis to maintain this ratio and to ensure adequate response times.

Police Protection

The campus Police Department provides police protection service for all buildings and facilities either owned or leased by UC Davis. Recent figures show the campus Police Department employs 31.5 sworn officers, in addition to other non-sworn personnel, including dispatchers and support staff (Chang 2001). Police protection service demand is based on a ratio of personnel to increased population (0.72 officers per 1,000 population). In 1999-00, the campus population of students, faculty, and staff was 32,775 (Table 4). Thus, the ratio of officers was approximately 0.96 per 1,000 students, faculty, and staff, which exceeded the campus standard.

Schools

The Davis Joint Unified School District (DJUSD) serves the City of Davis and portions of Yolo and Solano counties. With the exception of one elementary school, all DJUSD facilities are within City of Davis boundaries.

Other Public Facilities

The campus currently has four libraries located in the central campus serving both the campus population and the general public: Shields Library, Physical Sciences Library, Law Library, and Health Sciences Library. The Davis Library, a branch of the Yolo County Library, is located in the City of Davis.

The City of Davis maintains adequate park and recreation uses to accommodate buildout of the City. In addition, the campus provides parks and open space available to the general public.

1994 LRDP EIR Standards of Significance

The environmental analysis provided in the 1994 LRDP EIR considered an impact to fire protection, police protection, schools, parks and other public facilities significant if campus or regional growth would:

- substantially diminish the current level of fire protection service (i.e., response time, level of investigative services);

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- substantially diminish the current level of police protection service (i.e., response time, level of investigative services);
- require expansion or realignment of the existing school system; or
- require an expansion of library facilities or the library system.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through year 2005-06 on fire protection, police protection, schools, and other public facilities are addressed in Sections 4.12 (Fire and Police Protection) and 4.13 (Community Services) of the 1994 LRDP Draft EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of 1994 LRDP EIR Mitigation Measures are also presented. The proposed project is within the scope of the public services analysis presented in the 1994 LRDP EIR. Please note that Cumulative Impacts 4.12-4, 4.12-5, and 4.13-5 include mitigation measures to reduce the impacts to a less-than-significant level. However, these impacts are identified as significant and unavoidable because the University of California cannot guarantee implementation of mitigation measures that fall within other jurisdictions to enforce and monitor.

The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would increase cumulative demand for public services. However, campus growth through 2014-15 is not anticipated to result in any cumulative impacts on public services different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine potential cumulative public service impacts and the availability of additional feasible mitigation measures during the LRDP update process.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance After/With Mitigation
4.12-1 Development allowed under the 1994 LRDP could result in a reduction of the level of fire protection service provided by the UC Davis Fire Department.	S	LS
4.12-2 Development allowed under the 1994 LRDP would result in new buildings and facilities in areas where water pressure may be low.	S	LS
4.12-3 Development allowed under the 1994 LRDP could result in a reduction of the level of police protection service provided by the UC Davis Police Department.	S	LS
4.12-4 Cumulative development allowed under the 1994 LRDP could result in decreased level of service from City of Davis fire protection services.	SU	SU
4.12-5 Cumulative development allowed under the 1994 LRDP could result in decreased level of service from the City of Davis police protection services.	SU	SU
4.13-5 Cumulative development of the Davis area would generate an increase in the number of school age students in the DJUSD.	SU	SU

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

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Mitigation measures in the 1994 LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.12-1** - *The campus shall implement one or more of the following measures in order to maintain current level of fire protection services:*
 - (a) *hire additional firefighters and support staff as necessary to maintain the existing ratio of 3.5 firefighters per 1,000,000 square feet of building area on the UC Davis campus;*
 - (b) *add additional equipment or improve techniques to meet needs of fire protection needs; or*
 - (c) *expand mutual aid assistance from adjacent jurisdictions.*
- **LRDP EIR Mitigation Measure 4.12-2** - *Prior to the construction of new buildings or facilities, the campus shall determine the water pressure of the domestic/fire water system serving the site. If the pressure is determined to be below the industry standard set for fire water flows, then the campus shall upgrade the domestic/fire water system to provide the appropriate water pressure and flow to the proposed building or facility site.*
- **LRDP EIR Mitigation Measure 4.12-3** - *The campus shall implement one or more of the following measures in order to maintain current level of police protection services:*
 - (a) *hire additional sworn-officers and support staff as necessary to maintain the existing ratio of 0.72 sworn-officers per 1,000 daily population;*
 - (b) *add additional equipment or improve techniques to meet needs of police protection; or*
 - (c) *expand mutual aid assistance from adjacent jurisdictions.*
- **LRDP EIR Mitigation Measure 4.12-4(a)** - *Implement Mitigation Measures 4.12-1 and 4.12-2*
- **LRDP EIR Mitigation Measure 4.12-4(b)** - *The General Plan describes how City of Davis ordinances and assessment districts can ensure that the needed additional fire services and facilities are provided in coordination with development. Furthermore, City of Davis policy does not allow construction in new development areas until all necessary public services (including water, fire hydrants, and roads meeting the Fire Department's specifications) are in place. It is in the jurisdiction of the City of Davis to construct and staff fire stations, or increase efficiency as necessary to provide all portions of the fire department's service area with five-minute response capability as is indicated in the Davis General Plan.*
- **LRDP EIR Mitigation Measure 4.12-5(a)** - *Implement Mitigation Measure 4.12-3.*
- **LRDP EIR Mitigation Measure 4.12-5(b)** - *The Fiscal Analysis section of the Technical Supplement to the City of Davis General Plan indicates how needed capital improvements and additional police personnel may be funded. Funds to expand police services may be obtained through construction*

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taxes and assessment fees imposed upon new residential and commercial development in the City. In this way the financial burden for increased service would be placed on new residents, including incoming campus employees buying new homes in Davis, and students living off-campus in newly constructed rental units. It is within the jurisdiction of the City of Davis to hire additional police officers and support staff, or increase efficiency, as needed to maintain the existing level of service to the community as identified in the Davis General Plan.

- **LRDP EIR Mitigation Measure 4.13-5** - *The Fiscal Analysis section of the Technical Supplement to the City of Davis General Plan describes the City's existing plans to construct schools needed in the future and illustrates how additional facilities could be funded. It is within the jurisdiction of the City of Davis and DJUSD to plan and construct new school facilities in the Davis Planning Area, as indicated in the Davis General Plan. As new areas of housing are developed in the Davis Planning Area, the City of Davis would address resulting impacts to DJUSD schools.*

Mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
a) 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"/>
b) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) (i) The campus Fire Department provides service to the project area. Design and construction of the proposed project would conform to all applicable building codes and fire/life safety codes. In addition, the proposed project would include fire safety features such as a fire sprinkler system.

The proposed project would contribute approximately 65,000 gsf of additional enclosed building space to the campus. The 1994 LRDP identified that assumed development could result in a reduction of fire protection services provided by the UC Davis Fire Department (Impact 4.12-1). The 1994 LRDP EIR identified an adequate level of fire protection services for the campus was 3.5 firefighters per 1,000,000 gsf of campus building space. To meet this, the proposed project (with 65,000 gsf) would require approximately 0.23 additional firefighter. In compliance with 1994 LRDP EIR Mitigation Measure 4.12-1 and in order to maintain an adequate level of fire protection service, the campus Fire Department entered into automatic aid agreements with the City of Davis and other agencies in the region in 1994 and 1995. Continued compliance with 1994 LRDP EIR Mitigation Measure 4.12-1, incorporated as part of the proposed project, would reduce the project's impact on fire protection services to a less-than-significant level.

Development allowed under the 1994 LRDP is projected to increase the daily maximum peak domestic/fire water demand on campus to a total demand of approximately 12,593 gpm at buildout. Current capacity of the existing domestic/fire water system is approximately 10,892 gpm (West Yost 2000a). The 1994 LRDP EIR identified that development allowed under the 1994 LRDP could result in the construction of new facilities in areas where water pressure may be low (Impact 4.12-2). Peak demand for fire flows is substantially higher than peak domestic water demand. Therefore, campus domestic/fire water system distribution lines are sized to meet peak fire flows. 1994 LRDP EIR Mitigation Measure 4.12-2, incorporated as a part of the proposed project, would reduce any potentially significant water pressure impact that may arise to a less-than-significant level. In compliance with Mitigation Measure 4.12-2, the fire water demand associated with the proposed Mathematical Sciences Building was assessed, and the current system was determined to offer adequate capacity. If the campus decides to relocate the Hog Barn building, Mitigation Measure 4.12-2 would be implemented for the proposed relocation site. No further mitigation is required.

The 1994 LRDP EIR concluded that cumulative growth under the 1994 LRDP could result in a decreased level of service from City of Davis fire protection services (Impact 4.12-4). Although implementation of 1994 LRDP EIR Mitigation Measures 4.12-4 (a) and (b), incorporated as part of the project, would reduce the magnitude of this impact, this cumulative impact is considered significant and unavoidable because implementation of Mitigation Measure 4.12-4 (b) is not within the University's jurisdiction to enforce and monitor. The proposed project would contribute to, but not exceed, the increase in development and associated demand on City of Davis fire protection identified in the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, campus growth through 2014-15 would contribute to the cumulative demand for fire protection in the region. This cumulative impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

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- (a) (ii) The campus Police Department provides service to the project area. The 1994 LRDP EIR concluded that development allowed under the 1994 LRDP could result in a reduction of the level of police protection service provided by the UC Davis Police Department (Impact 4.12-3). Implementation of Mitigation Measure 4.12-3, incorporated as part of the project, would reduce increased demand on police protection services to a less-than-significant level. In compliance with 1994 LRDP EIR Mitigation Measure 4.12-3 (a), UC Davis police protection service demand is based on a ratio of personnel to increased population (0.72 sworn officers per 1,000 population of students, faculty, and staff). The proposed project would contribute approximately 120 additional employees to the campus population, requiring approximately 0.09 sworn officer. Recent figures show the campus has approximately 0.96 sworn officers per 1,000 students, faculty, and staff, which exceeds the campus standard and would adequately serve the proposed project. In accordance with 1994 LRDP EIR Mitigation Measure 4.12-3 (b), the campus Police Department has also updated its communications center with the addition of a state-of-the-art radio system. In addition, in compliance with Mitigation Measure 4.12-3 (c) the campus has Mutual Aid Agreements with law enforcement agencies from the City of Davis, Yolo County, and the state to ensure that adequate campus police protection services and response times are provided. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.12-3 (a) through (c), incorporated as part of the proposed project, would reduce the project's impact to police protection services to a less-than-significant level.

The 1994 LRDP EIR concluded that cumulative growth under the 1994 LRDP could result in a decreased level of service from the City of Davis police protection services (Impact 4.12-5). Although implementation of 1994 LRDP EIR Mitigation Measures 4.12-5 (a) and (b), incorporated as part of the proposed project, would reduce the project's contribution to this impact, this cumulative impact is considered significant and unavoidable because implementation of Mitigation Measure 4.12-5 (b) is not within the University's jurisdiction to enforce and monitor. The proposed project would contribute to, but would not exceed, growth levels and associated demand on City of Davis police protection services assessed under the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, campus growth through 2014-15 would contribute to the cumulative demand for police protection in the region. This cumulative impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

- a) (iii, iv) The increase in the on-campus population associated with the proposed project (approximately 120 additional employees) is within the population projections evaluated in the 1994 LRDP EIR (see Section IV, Consistency with the 1994 LRDP EIR). The 1994 LRDP EIR anticipated that increases in the number of school-age students in the Davis Joint Unified School District would not exceed the capacity of the District, and that the existing and planned parks and recreation areas in the area would be adequate to meet future demands. Therefore, 1994 LRDP EIR considered the indirect increase in the number of school age students in the Davis Joint Unified School District and the increased demand for parks and recreational facilities resulting from growth allowed under the 1994 LRDP less-than-significant impacts.

The 1994 LRDP EIR concluded that cumulative development in the Davis area would generate an increased number of school age students in the Davis Joint Unified School District (Impact 4.13-5). Although implementation of 1994 LRDP EIR Mitigation Measure 4.13-5, incorporated as part

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of the proposed project, would reduce the project's contribution to this impact, this cumulative impact is considered significant and unavoidable because implementation of Mitigation Measure 4.13-5 is not within the University's jurisdiction to enforce and monitor. The proposed project would contribute to, but would not exceed, population projections and associated demand on Davis Joint Unified Schools assessed under the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed in Appendix B, campus growth through 2014-15 would contribute to the cumulative demand on the Davis Joint Unified School District. This cumulative impact is anticipated to remain significant and unavoidable through 2014-15. This impact and the availability of additional feasible mitigation measures will be reexamined as part of the LRDP update process.

The 1994 LRDP EIR concluded that cumulative buildout in the Davis area would increase demand for parks and recreational facilities. As discussed in the Recreation section of this Environmental Checklist, these cumulative impacts were considered less-than-significant because the City maintains adequate park and recreation uses to accommodate buildout of the City. In addition, the campus provides parks and open space available to the general public. The proposed project would contribute to, but would not exceed, demand for parks and recreational facilities associated with buildout of the 1994 LRDP because population growth associated with the project is consistent with the growth projected in the 1994 LRDP. As discussed in Appendix B, the campus anticipates that this impact will remain less-than-significant through 2014-15.

- a)(v) The 1994 LRDP EIR concluded that development under the 1994 LRDP EIR could contribute to the demand for library facilities in the area. This impact was considered less-than-significant because the campus' libraries would serve the campus and the region. The proposed project would not result in a need for any other new or altered public services, other than those identified in the 1994 LRDP EIR, because both population and building space associated with the project are within the projections assumed under the 1994 LRDP. This impact is considered less-than-significant and no mitigation is required. As discussed in Appendix B, the campus anticipates that this impact will remain less-than-significant through 2014-15.
- b) Standards of significance for public services impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the public services questions in the current Environmental Checklist. As discussed above, with the incorporation of 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance identified in the 1994 LRDP EIR and would not result in new significant impacts related to public services that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.12-1, 4.12-2, 4.12-3 (a) through (c), 4.12-4 (a) and (b), 4.12-5 (a) and (b), and 4.13-5 are incorporated as part of the proposed project. The proposed project would not result in new or significant public services impacts that have not already been adequately assessed in the 1994 LRDP EIR.

15. RECREATION

Background

The campus contains many park-like areas including landscaped open space between buildings, the Quad and Arboretum Waterway in the central campus, and the Putah Creek Reserve in the west campus. Recreational facilities on campus include structures and fields used for physical education, intercollegiate athletics, intramural sports, sports clubs, and general recreation. The City of Davis maintains adequate park and recreation uses to accommodate buildout of the City. In addition, the campus provides parks and open space available to the general public.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to recreation significant if campus or regional growth would:

- affect or require the designation of substantial additional parkland to remain in conformance with locally acceptable or adopted park standards.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus growth through year 2005-06 on recreation issues were addressed in Section 4.13 (Community Services) of the 1994 LRDP Draft EIR. No significant recreation impacts were identified in the 1994 LRDP EIR or subsequent documents. The proposed project is within the scope of the recreation analysis presented in the 1994 LRDP EIR. The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would contribute to cumulative demand for recreational resources. However, campus growth through 2014-15 is not anticipated to result in any new cumulative impacts on recreational resources. The campus will reexamine potential cumulative recreational resource impacts and the availability of additional feasible mitigation measures during the LRDP update process.

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program 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"/>

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RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) The proposed project would increase the campus population by approximately 120 employees. This growth would not result in a significant increase in the use of existing campus recreation facilities such that substantial physical deterioration of the facilities would occur or be accelerated. In addition, this growth is within the population growth analyzed under the 1994 LRDP EIR. The 1994 LRDP includes plans for the development of 20 acres of new athletic fields and 12 acres of new recreational facilities to accommodate projected population growth under the 1994 LRDP. Since adoption of the 1994 LRDP, the campus has developed and approved approximately 7.8 acres of new recreation facilities and approximately 5 acres of new recreation fields (as of 2001).

The 1994 LRDP EIR concluded that cumulative buildout in the Davis area would increase demand for parks and recreational facilities. This cumulative impact was considered less-than-significant because the City of Davis maintains adequate park and recreation uses to accommodate buildout of the city. In addition, the campus provides parks and open space available to the general public. The proposed project would contribute to, but would not exceed, the additional demand for parks and recreational facilities caused by implementation of the 1994 LRDP because population growth associated with the project is consistent with the growth assumed under the 1994 LRDP. As discussed in Appendix B, the campus anticipates that this impact will remain less-than-significant through 2014-15.

- b) The proposed project does not include construction of new recreational facilities, nor does it require expansion of existing facilities. Therefore, no impact would occur.
- c) Standards of significance for recreation that were used in the preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the recreation questions in the current CEQA Environmental Checklist. Based on the discussion presented above, the proposed project would not exceed the standards of significance for recreation identified in the 1994 LRDP EIR. The project would not result in new impacts related to recreation.

Summary

The 1994 LRDP EIR did not identify any significant recreation impacts. The proposed project would not result in new or significant recreation impacts.

16. UTILITIES AND SERVICE SYSTEMS

Background

The proposed project would use campus utilities and service systems including solid waste, domestic water, utility water, sewer, storm drainage, chilled water, steam, electricity, and telecommunications. The proposed project would not use natural gas. The campus utility and service systems that would serve the proposed project are discussed below.

Solid Waste

UC Davis operates a Class III sanitary landfill and provides solid waste collection and disposal services for the campus. Currently, the campus generates approximately 40 to 50 tons of solid waste per day. The permitted capacity of the landfill is 500 tons per day, and the landfill unit currently being used has an anticipated life to 2030. The Yolo County Landfill is currently permitted through 2021.

Domestic and Utility Water

Domestic water is supplied from the deep aquifer by the campus domestic/fire water system. Utility water is supplied from the shallow/intermediate aquifer by the campus utility water system. The deep and shallow/intermediate aquifers are discussed further in Item 9, the Hydrology and Water Quality section, of this Environmental Checklist. The current peak hour capacity of the campus domestic water supply reservoir and wells is approximately 10,892 gpm. Total peak hour domestic water demand at buildout of the 1994 LRDP is estimated to be 12,593 gpm (West Yost 2000a). The peak hour current capacity of the campus utility water distribution system is approximately 5,365 gpm. Total peak maximum utility water demand at buildout of the 1994 LRDP is estimated to be 5,180 gpm (West Yost 2000b).

Wastewater

The existing campus wastewater system is operated by the campus and is not connected to any regional facility. Major system elements include collectors, sanitary sewer mains, eight lift stations, a treatment plant, and an effluent outfall to the South Fork of Putah Creek near Old Davis Road. The new campus Wastewater Treatment Plant, which began operation in March 2000, is more reliable to operate than the outdated treatment system that was in use when the 1994 LRDP was prepared. The current peak month capacity of the UC Davis Wastewater Treatment Plant (WWTP), as regulated under the existing NPDES permit, is 2.7 mgd. The WWTP was designed to accommodate the growth anticipated in the 1994 LRDP through 2005-06. The 2001 City of Davis General Plan determined that the City's wastewater infrastructure has been planned and sized to meet planned buildout of the City.

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Storm Drainage

The existing stormwater drainage system on campus consists of collectors, pump stations, transmission mains, and the Arboretum Waterway, which discharge into both the South Fork and North Fork of Putah Creek. Storm drainage from the central campus is discharged to the Arboretum Waterway (a stormwater retention basin for the central campus). Rainfall overflow is pumped into the South Fork during large storm events. The campus stormwater system and effects of flooding are discussed in Item 9, the Hydrology and Water Quality section, of this Environmental Checklist.

Chilled Water and Steam

The campus' Central Heating and Cooling Plant produces steam to provide heat and chilled water to buildings in the central campus. Chilled water capacity is currently approximately 10,000 tons. In 1999, the campus approved a project to upgrade the central campus chilled water system in order to accommodate campus growth. This upgrade will increase chilled water capacity on the central campus to approximately 15,500 tons. Total steam capacity at the Central Heating and Cooling Plant is approximately 295,000 pounds per hour (lbs/hr). Under normal weather conditions, current use is estimated at 210,000 lbs/hr. Under extreme hot or cold weather conditions, the steam system can operate near capacity. The Central Plant also has a temporary boiler for use in emergencies.

Electricity

The main campus receives power from Pacific Gas and Electric and the Western Area Power Administration through the campus substation located south of I-80. The main campus also receives power from the campus cogeneration plant located on the core campus in the Central Heating and Cooling Plant facility. The campus substation converts the power from the transmission level voltage of 60 kV to the campus distribution voltage of 12.47 kV. Recent estimated annual electrical usage on campus was approximately 190 million-kilowatt hours per year.

Telecommunications

The campus installed its telecommunications system in 1987. The main switching facility is located in the Telecommunications Building, east of the Central Heating and Cooling Plant. The majority of all voice and data switching equipment and network infrastructure facilities are owned by the campus and operated by UC Davis Communications Resources Service. As new buildings are constructed, Communications Resources 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.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to utilities and service systems significant if campus or regional growth would:

- result in a significant increase in the consumption of potable water and require substantial expansion of water supply treatment or distribution;

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- result in the need for increased chilled water or steam generation capacity or major distribution improvements;
- require substantial expansion of wastewater treatment and distribution capacity;
- exceed available landfill capacity;
- require substantial expansion of the telecommunication service and distribution system;
- create an energy demand in excess of supply or major infrastructure; or
- require the development of new sources of energy.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Impacts of campus and related regional growth through year 2005-06 on utilities and service systems are addressed in Sections 4.14 (Utilities and Infrastructure) and 4.15 (Energy) of the 1994 LRDP Draft EIR. Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The levels of significance before and after application of mitigation measures identified in the 1994 LRDP EIR are also presented in the following table. The proposed project is within the scope of the utilities and service systems analysis in the 1994 LRDP EIR. The campus has prepared a Cumulative Impacts Analysis, presented as Appendix B of this document, that serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. As discussed in the analysis, campus growth through 2014-15 would contribute to the cumulative demand on utilities and service systems. However, campus growth through 2014-15 is not anticipated to result in any new cumulative impacts on utilities and service systems different in character from those already assessed in the 1994 LRDP EIR. The campus will reexamine these impacts and the availability of additional mitigation measures during the LRDP update process. Potential impacts to the deep and shallow/intermediate aquifer are addressed in the Hydrology and Water Quality section of this checklist.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance After/With Mitigation
4.14-2 Development allowed under the 1994 LRDP would directly increase the demand for water from the domestic/fire water system on the UC Davis campus.	S	LS
4.14-4 Development allowed under the 1994 LRDP would directly increase the amount of water demanded from the utility water system serving the UC Davis campus.	S	LS
4.14-6 Development allowed under the 1994 LRDP would result in a direct increase in the wastewater generated on the campus.	S	LS

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

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Mitigation measures identified in the 1994 LRDP EIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.14-2(a)** - *Prior to final project design, the campus shall review each project to determine if existing water supplies are adequate. When determined necessary, the campus shall construct additional wells into the deep aquifer to meet existing and future domestic water demand.*
- **LRDP EIR Mitigation Measure 4.14-2(b)** - *Implement Mitigation Measure 4.14-1(a) and (b).*

Please see Mitigation Measures 4.14-1(a) and (b) under Item 9, Hydrology and Water Quality, of this Environmental Checklist

- **LRDP EIR Mitigation Measure 4.14-4** - *The campus shall review each project to determine if existing water supply is adequate. When determined necessary, the campus shall develop additional wells into the shallow/intermediate aquifer to meet the water demands of the campus utility water system.*
- **LRDP EIR Mitigation Measure 4.14-6(a)** - *Until the existing wastewater treatment plant is upgraded or replaced by facilities with the capacity to treat loads expected from all contemplated campus development, the campus shall review each project to ensure that no new structures are constructed that would cause the wastewater treatment plant to exceed its permitted capacity.*
- **LRDP EIR Mitigation Measure 4.14-6(b)** - *If implementation of the project would result in an increased load above the current capacity, the campus shall employ measures to either increase the plant's capacity or reduce the existing load, such that no permit standards are exceeded. Possible strategies to increase the plant's capacity or reduce the existing load could include the following:*
 - (i) *incrementally increasing the total suspended solids capacity at the existing plant; or*
 - (ii) *reducing the volume of wastewater generated by existing facilities through implementation of water conservation measures.*

Mitigation measures listed above are incorporated into the proposed project, and the proposed project, as mitigated, is evaluated in the checklist below.

UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/Program 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:					
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's 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 applicable 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 of new electrical or natural gas 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"/>
i) Require or result in the construction of new telecommunication facilities, the construction of which would cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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UTILITIES AND SERVICE SYSTEMS		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
Would the project:						
j)	Exceed an applicable LRDP or Program EIR Standard of Significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) The proposed project would discharge wastewater into the campus sanitary sewer system. The proposed Mathematical Sciences Building would connect to the campus sanitary sewer system at a point located northeast of the proposed facility. The proposed project does not include uses that are likely to result in discharge of inappropriate materials to the sanitary sewer system, and the project would be required to comply with the campus pretreatment program. However, as discussed further in Item 9 (a) in the Hydrology and Water Quality section of this Environmental Checklist, the campus WWTP has exceeded NPDES effluent limits for copper during three of 15 sampling events since the new plant became operational in March 2000 (in December 2000, September 2001, and June 2002). The copper permit limit is 13 parts per billion (ppb) for one-hour average sampling. The exceedances ranged from 16 to 29 ppb.

The campus is pursuing several steps to bring copper concentrations into compliance, including strictly enforcing the pretreatment program and aggressively enforcing local limits by identifying and removing sources of copper to the wastewater where feasible. 1994 LRDP EIR Mitigation Measures 4.8-6 (a) through (c), incorporated as part of the proposed project, require the campus to continue monitoring WWTP effluent discharge, to modify the pretreatment program as needed to ensure compliance, and to apply and comply with requirements of NPDES WDRs for the campus WWTP. In addition, the WWTP Replacement Project EIR Mitigation Measure 4.1-6 (a) requires the campus to strictly implement the pretreatment program and enforce the local limits to reduce pollutant concentrations and ensure NPDES permit limits will be met. WWTP Replacement Project EIR Mitigation Measure 4.1-6 (b) requires the campus to modify the operation and/or treatment processes at the WWTP as necessary to comply with all applicable permit conditions related to toxics.

The proposed project would be a typical source of copper (i.e., the source would be primarily from the corrosion of copper pipes) and would not have a substantial effect on copper concentrations in effluent (see Item 9 [a]). Implementation of mitigation measures previously adopted as part of the 1994 LRDP and WWTP Replacement Project will reduce the copper concentration in WWTP effluent to within the permit limit. No new significant impacts have been identified and no new mitigation measures are required.

- b) Wastewater from the proposed project would be treated at the campus Wastewater Treatment Plant. The plant, which began operation in March 2000, has a permitted capacity of 2.7 mgd, sufficient for development allowed under the 1994 LRDP including the proposed project. The 2001 City of Davis General Plan determined that the City's wastewater infrastructure has been planned and sized to meet planned buildout of the City. Therefore, the proposed project would not result in the construction of new wastewater treatment facilities or the expansion of existing facilities on campus or in the City. The impact would be less-than-significant and no mitigation is required.

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- c) Stormwater runoff from the proposed project site would drain to storm drain inlets located along the northern and southern sides of the proposed Mathematical Sciences Building. As described in Item 9, the Hydrology and Water Quality section of this checklist, the proposed project would establish approximately one acre of additional paved surfaces over that currently occurring on the project site. The campus evaluated the capacity of the existing storm drainage system and determined that adequate capacity exists at the proposed points of connections to serve the proposed Mathematical Sciences Building (O'Hearn 2002). In addition, an effort would be made to minimize impervious surfaces during landscape design, and stormwater drainage would be channeled, where possible, through swales and over other pervious surfaces to filter runoff and maximize percolation. If the campus decides to relocate the Hog Barn building, the stormwater system at the proposed relocation site would be assessed to determine if capacity is sufficient. The proposed project's impact on the capacity of the campus storm drainage system would be less-than-significant.
- d) The proposed project would require domestic water supplied by the campus domestic/fire water system, which obtains water from the deep aquifer. Utility water, obtained from the shallow/intermediate aquifer, would be required to irrigate landscaping included in the proposed project. Please refer to Item 9, the Hydrology and Water Quality section of this Environmental Checklist, for a discussion of potential impacts to these aquifers.

Domestic Water

The 1994 LRDP EIR identified that development allowed under the 1994 LRDP would directly increase the demand for water from the campus domestic/fire water system (Impact 4.14-2). The proposed Mathematical Sciences Building would connect to the existing campus domestic/fire water system at a point located north of the proposed site. As discussed in Item 9(b) of this Environmental Checklist, the proposed Mathematical Sciences Building's total domestic water demand would be approximately 6 mgy, an amount that is well within the domestic water use projected for 2005-06. In addition, compliance with 1994 LRDP EIR Mitigation Measure 4.14-1 (a) (identified in Item 9 of this Environmental Checklist), the proposed building would include domestic water conservation features such as low-water flush toilets. Consistent with 1994 LRDP EIR Mitigation Measure 4.14-2(a), incorporated into the proposed project, the existing campus domestic water system was evaluated and was determined adequate to provide for the proposed Mathematical Sciences Building (O'Hearn 2002). If the campus decides to relocate the Hog Barn building, 1994 LRDP EIR Mitigation Measure 4.14-2(a) would be implemented for the proposed relocation alternative. In addition, in compliance with 1994 LRDP EIR Mitigation Measure 4.8-5(a) (vi), efficient irrigation would be incorporated into the project's landscape design. Therefore, this impact would be less-than-significant.

Utility Water

The proposed project would establish landscaped grounds that would use utility water for irrigation. The proposed Mathematical Sciences Building would connect to an existing utility water line located northeast of the proposed site. The current peak hour capacity of the campus utility water distribution system is approximately 5,365 gpm. Peak hour utility water demand through 2005-06 is estimated to be approximately 5,180 gpm (West Yost 2000b). The 1994 LRDP EIR identified that development allowed under the 1994 LRDP would directly increase the

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amount of water demanded from the campus utility water system (Impact 4.14-4). Consistent with 1994 LRDP EIR Mitigation Measure 4.14-4, the campus reviewed the existing utility water system and determined that adequate capacity exists at the proposed point of connection to serve the proposed project (O'Hearn 2002). If the campus decides to relocate the Hog Barn building and utility water is required, 1994 LRDP EIR Mitigation Measure 4.14-4 would be implemented for the proposed relocation alternative. Therefore, this impact would be less-than-significant.

Chilled Water and Steam

The campus' chilled water and steam systems would heat and cool the proposed Mathematical Sciences Building. The proposed Mathematical Sciences Building would connect to the campus chilled water and steam systems at points located northwest of the proposed building.

The campus' Central Heating and Cooling Plant produces steam to provide heat and chilled water to cool buildings in the central campus. Chilled water capacity at the Central Plant is currently approximately 10,000 tons. In 1999, the campus approved a project to upgrade the central campus chilled water system in order to accommodate campus growth. This upgrade would increase chilled water capacity on the central campus to approximately 17,000 tons. Total steam capacity at the Central Heating and Cooling Plant is approximately 206,000 lbs/hr. Under normal weather conditions, current use is estimated at approximately 200,000 lbs/hr. Under extreme hot or cold weather conditions, the steam system can operate near capacity. The Central Plant also has a 75,000 lbs/hr standby boiler for use in emergencies. The proposed project would contribute to peak chilled water and steam demand. However, implementation of utility upgrade projects currently under consideration would help meet total future campus demand (O'Hearn 2002). If a relocation alternative is selected for the Hog Barn building, the relocated building would not connect to the campus' chilled water or steam systems. Therefore, the project's impact on the capacity of the steam and chilled water systems would be less-than-significant.

- e) The proposed Mathematical Sciences Building would connect to the existing campus sanitary sewer system at a point located northeast of the proposed building. The campus evaluated the proposed point of connection and determined that adequate capacity exists to serve the proposed project (O'Hearn 2002). If the campus decides to relocate the Hog Barn building and if a sewer connection is proposed as part of the building's reuse, the campus would evaluate the proposed point of connection to determine if adequate sewer capacity exists to serve the relocation alternative. In addition, the campus WWTP has a permitted capacity of 2.7 mgd, which is sufficient for development allowed under the 1994 LRDP including the proposed project. Therefore, the proposed project's impact on wastewater collection system capacity is considered less-than-significant.
- f) The campus landfill has sufficient capacity to accommodate the increased quantity of solid waste generated by the implementation of the 1994 LRDP. This projection assumes an annual growth rate of 1.8 percent, which represents generation by 2006 of approximately 60 tons of solid waste per day. Currently, the campus generates approximately 40 to 50 tons of solid waste per day. The permitted capacity of the landfill is 500 tons per day. The proposed project would not generate waste that exceeds the permitted capacity, because the proposed project is within the scope of the 1994 LRDP. Therefore, the proposed project's impact on the capacity of the campus landfill would be less-than-significant.

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The 1994 LRDP EIR concluded that development allowed under the 1994 LRDP would result in increased generation of solid waste in the Davis area. This cumulative impact was considered less-than-significant because adequate landfill capacity exists to accommodate buildout of the City of Davis. The proposed project would contribute to, but not exceed, demand for solid waste disposal capacity associated with buildout of the 1994 LRDP. As discussed in Appendix B, because the Yolo County landfill is permitted to 2021, this cumulative impact is anticipated to remain less-than-significant through 2014-15.

- g) 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) *Electricity*

The proposed Mathematical Sciences Building, as required of all new buildings constructed in California, would comply with Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards of the California Code of Regulations. It is campus policy to encourage design choices that allow provision of the most energy efficient buildings possible. The project would be included in the campus' load management program, which voluntarily reduces loads when the state's energy reserves fall below critical levels.

Peak energy demand for this project would contribute to the peak demand for electricity on campus. Electricity would be provided for the proposed project from the campus' distribution system. The Mathematical Sciences Building would connect to the campus grid at a point located north of the proposed project site, between the Crocker Nuclear Laboratory and Engineering Unit 3. The campus evaluated this proposed point of connection and determined that adequate capacity exists to serve the proposed project (O'Hearn 2002). If the campus decides to relocate the Hog Barn building, the campus would determine if adequate electricity capacity exists to provide for the proposed relocation alternative. Therefore, impacts on the electrical distribution system capacity would be less-than-significant.

There is current uncertainty with respect to the cost of electricity throughout California. Because it is too early to determine future sources of energy, it would be speculative to evaluate environmental impacts from the construction and operation of new generating facilities that may be triggered by the project in conjunction with other development in the region. In addition, the California Energy Commission conducts environmental review for all large generating facilities that are proposed in California. The Commission prepares a CEQA-equivalent document that analyzes and discloses environmental impacts from the construction and operation of new power plants and imposes mitigation measures as conditions of project approval to address significant impacts.

- i) The Mathematical Sciences Building project would connect to an existing telecommunication line at a point located to the north of the proposed project site. The UC Davis Office of Communications Resources will coordinate with the UC Davis Office of Architects and Engineers to design and direct the installation of the building's telecommunications facilities in accordance with established standards. Therefore, the proposed project's impact on the campus telecommunication distribution capacity is less-than-significant.

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- j) Standards of significance for utilities and service systems impacts that were used in preparation of the 1994 LRDP EIR are presented earlier in this section. These standards are consistent with the utilities and service systems questions in the current Environmental Checklist. Based on the discussion presented above, with the incorporation of 1994 LRDP EIR mitigation measures, the proposed project would not exceed the standards of significance in the 1994 LRDP EIR. The project would not result in new significant impacts related to utilities and service systems that were not previously analyzed in the 1994 LRDP EIR.

Summary

1994 LRDP EIR Mitigation Measures 4.14-2 (a) and (b), 4.14-4, and 4.14-6 (a) and (b) are incorporated into the proposed project. The proposed project would not result in new or significant utilities and service systems impacts that have not already been adequately assessed in the 1994 LRDP EIR.

17. MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less Than Significant Impact	No Impact
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) The proposed project would not significantly affect fish or wildlife habitat. Implementation of the proposed project would require demolition or relocation of the Hog Barn building. Cumulative regional impacts on biological resources could be significant, but mitigation measures to reduce these potentially significant impacts to less-than-significant levels are not within the jurisdiction of the University of California to enforce and monitor. These potentially significant and unavoidable impacts were adequately analyzed in the 1994 LRDP EIR, and addressed in the Findings and Statement of Overriding Considerations adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR.

To accommodate the proposed Mathematical Sciences Building, the Hog Barn building currently located on the project site would need to be demolished or relocated. The Hog Barn building was originally constructed in 1913 and is considered to meet criteria for listing on the California Register of Historic Places because it maintains a high degree of integrity, it played an important

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role in the founding years of the farm that became UC Davis, and it has been identified as a good example of hog barn design in California during the early twentieth century. According to the CEQA Guidelines, a project that involves a substantial adverse change in the significance of a historical resource may have a significant effect on the environment. Therefore, this impact and the project's contribution to the cumulative loss of historical resources in the region will be addressed in the Focused Tiered EIR for the project.

- b,c) The proposed project is consistent with the 1994 LRDP, as described in Section IV of this Tiered Initial Study. The proposed project would not contribute to significant and unavoidable impacts identified in the 1994 LRDP EIR related to agricultural resources. It would incrementally contribute to, but would not exceed, significant and unavoidable impacts related to transportation/circulation, air quality, noise, biological resources, hazards and hazardous materials, hydrology and water quality, geology and soils, public services, and utilities and service systems. These potentially significant and unavoidable impacts were adequately analyzed in the 1994 LRDP EIR, and addressed in the Findings and Overriding Consideration adopted by The Regents in connection with its approval of the 1994 LRDP and certification of the 1994 LRDP EIR. As discussed further in Appendix B, while the campus anticipates that growth through 2014-15 would not introduce any new potentially significant and unavoidable cumulative impacts, these impacts will be reevaluated during the LRDP update process. The Focused Tiered EIR for the proposed project will evaluate potentially significant and unavoidable impacts related to cultural resources and aesthetics.

18. FISH AND 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

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