

**The Jackson Laboratory, JAX West,
at UC Davis**

Draft Tiered Initial Study

Prepared For:
University of California, Davis
Office of Resource Management and Planning
376 Mrak Hall
One Shields Avenue
Davis, CA 95616

August 2000

Revised December 2000

NOTE TO THE READER

As explained on page ES-1 of this Draft Eir, the Initial Study prepared for the project in August 2000 analyzed a facility with approximately 65,000 square feet of space. Since then, The Jackson Laboratory has requested analysis of a larger facility with about 96,064 square feet of space. The size of the leased parcel would increase from 5 acres to 6 acres. The additional acreage would be used for on-site detention of stormwater. The additional space included in the larger facility is mainly for administrative, warehousing, and other support functions. The square footage assigned to animal rooms remains largely the same as in the original proposal and the number of mice to be housed remains at 300,000. Because the number of mice is unchanged from the original proposal, the number of facility employees (who are mostly animal caretakers) required are almost the same as the original proposal (131 employees compared to 135 employees in the original proposal). All other aspects of the project including project scope and objectives remain unchanged.

In light of the change in the size of the building, the Initial Study has been revised (revisions are shown in underline/strikeout) to address the impacts of the larger project on all resource areas. This analysis shows that the size increase would not result in any new significant impacts or increase the severity of impacts previously analyzed in the August 2000 Initial Study. Because the number of employees are almost the same as the original proposal, impacts related to traffic, air quality and vehicle noise are unchanged. Because the number of mice also remains the same as the original proposal, impacts related to waste generation are unchanged. The addition of 1 acre of land to the project site does not change the impacts to cultural and biological resources because no resources were found on the site. There would be no changes in impacts with respect to all other resource areas, and similar to the original proposal, the larger facility remains within the scope of the impacts analyzed in the 1994 LRDP EIR except as specifically identified in the project EIR. This analysis also shows that the scope of the Focused Tiered EIR as determined in the August 2000 Initial Study is still valid and that the only two resource areas that should be further evaluated in the Focused EIR are Hazards and Hazardous Materials and Utilities and Service Systems.

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ENVIRONMENTAL CHECKLIST FORM

UNIVERSITY OF CALIFORNIA

August 29, 2000

CAMPUS: DAVIS

I. PROJECT INFORMATION

1. Project title: The Jackson Laboratory, JAX West at UC Davis
2. Project location: University of California, Davis, Yolo County
3. Lead agency name and address:

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

4. Project sponsor's name and address: Same as Item 3 above.
5. Contact person and phone number:

A. Sidney England, Environmental Planner
(530) 752-2432

6. Location of the administrative record for this project: Same as Item 3 above.
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 Environmental Impact Report (LRDP EIR) (State Clearinghouse #94022005) as supplemented and amended by a number of subsequent environmental documents.

Specifically, the 1994 LRDP EIR was supplemented and amended by the 1997 Wastewater Treatment Plant (WWTP) Replacement Project EIR (State Clearinghouse #95123027 and #96072024), by the 1997-98 Major Capital Improvement Projects Supplemental Environmental Impact Report (SEIR) (State Clearinghouse #97122016), by the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse #98092016), by the USDA Western Human Nutrition Research Center Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse #99092060), by the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR (State Clearinghouse #2000022057), by the Genome and Biomedical Sciences Facility Focused Tiered EIR (State Clearinghouse #2000042028; pending approval) which are hereby incorporated by reference. These documents are available for review during normal operating hours at the UC Davis ~~Planning and Budget~~ Office of Resource Management and Planning at 376 Mrak Hall, University of California, Davis and at Reserves in the Shields Library on the UC Davis campus. Hereafter, reference to the 1994 LRDP EIR includes the 1994 LRDP

EIR as supplemented and amended by the documents listed above.

The WWTP Replacement Project EIR identified the loss of an additional 20 acres of prime agricultural land that was not identified in the 1994 LRDP EIR analysis. As a result, the magnitude of several land use and biological resource impacts associated with the conversion of prime agricultural land and the conversion of Agricultural Land and Ruderal/Annual Grassland habitat were increased. (see Appendix A of the WWTP Replacement Project EIR).

The 1997-98 Major Capital Improvement Projects SEIR addressed the full buildout of all Enterprise Reserves on campus, including the 43-acre West Campus Reserve. That SEIR also identified the loss of 20 acres of prime agricultural land and 31 acres of Agricultural Land and Ruderal/Annual Grassland over that anticipated in the 1994 LRDP EIR, as amended by the WWTP Replacement Project EIR. As a result, the magnitude of several land use and biological resource impacts associated with the conversion of prime agricultural land and the conversion of Agricultural Land and Ruderal/Annual Grassland habitat were increased. To mitigate identified land use and biological resource impacts associated with the conversion of prime agricultural land and Ruderal/Annual Grassland habitat, 20 acres of land at the Russell Ranch was redesignated from Academic and Administrative Low Density to Teaching/Research Fields. This SEIR is relevant to the proposed project because the project would also result in conversion of prime agricultural land and the impact would be mitigated through the implementation of a mitigation measure identified in the SEIR.

The 1997-98 Major Capital Improvement Projects SEIR also included an updated analysis of transportation and circulation impacts. This analysis reflected the decision by the City of Davis not to expand the Richards Boulevard Underpass from 2 lanes to 4 lanes. The analysis also included more recent traffic counts. The results of the analysis indicated that the operating performance of several intersections would decrease to Level of Service E or F during A.M. or P.M. peak hour operating conditions. The 1997-98 Major Capital Improvement Projects SEIR also revised 1994 LRDP EIR Mitigation Measure 4.3-1(b) which identifies feasible improvements to reduce some transportation and circulation impacts to a less-than-significant level (see Appendix A of the 1997-98 Major Capital Improvement Projects SEIR). That traffic analysis has since been further updated as described below, and is therefore not relevant to the proposed project.

The Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR further updated the cumulative transportation and circulation impact analysis to account for more recent refined estimates of campus population growth in the Health Sciences District. Results of the new cumulative traffic study, conducted in 2000, indicated that if all proposed development in the Health Sciences District occurs, the intersection of Hutchison Drive and Health Sciences Drive would operate at a Level of Service "F" during the P.M. peak hour. A project-specific mitigation measure was adopted to reduce this impact to a less-than-significant level (see Section 3 of the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR). This mitigation measure, adopted as part of the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities project, reduces a cumulative impact resulting from development under the 1994 LRDP and therefore revises the LRDP EIR. The Genome and Biomedical Sciences Facility Project Focused Tiered EIR also utilized the same updated traffic and re-adopted the mitigation measure described above. The cumulative traffic analysis contained in these two EIRs is relevant to the proposed project.

Revised 1994 LRDP EIR impacts and mitigation measures are identified in Section VII, Evaluation of Environmental Impacts of this Tiered Initial Study, as appropriate.

II. ENVIRONMENTAL REVIEW AND APPROVAL

Introduction

This environmental analysis is a Tiered Initial Study for the Jackson Research Laboratory Facility. The environmental analysis for the proposed project is tiered from the UC Davis 1994 LRDP EIR in accordance with Section 15152 and 15168(c) of the California Environmental Quality Act (CEQA) Guidelines. 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. The project environmental document incorporates by reference the discussions in 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.

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) a discussion of general background and setting information for environmental topic areas;
- (b) overall growth-related issues;
- (c) 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
- (d) long-term cumulative impacts.

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:

- 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, in which case preparation of a Mitigated Negative Declaration would be appropriate; or

- the project would result in new significant environmental impacts not previously identified in the LRDP EIR, and preparation of a Tiered EIR would be appropriate.

The State CEQA Guidelines at §15152(f)(3) provide that significant environmental effects have been “adequately addressed” in a previous program EIR if the lead agency determines that:

- “(A) they have been mitigated or avoided as a result of the prior environmental impact report and findings adopted in connection with that prior environmental report;
- (B) they have been examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project; or
- (C) they cannot be mitigated to avoid or substantially lessen the significant impacts despite the project proponent’s willingness to accept all feasible mitigation measures, and the only purpose of including analysis of such effects in another environmental impact report would be to put the agency in a position to adopt a statement of overriding considerations with respect to the effects.”

These criteria are applied in the analysis set forth below.

The proposed project is consistent with the 1994 LRDP. Mitigation measures identified in the 1994 LRDP EIR that apply to the proposed project will be required to be implemented as part of the project. Project-specific mitigation measures for new potentially significant impacts that were not previously identified in the 1994 LRDP EIR may also be required to be implemented as part of the proposed project.

Scope of the EIR

The analysis contained in this [revised](#) Tiered Initial Study concludes that in all resource areas listed below the proposed project would either result in no impact, a less-than-significant impact, a less-than significant impact due to incorporation of 1994 LRDP EIR mitigation measures or project-specific mitigation measures, or a contribution to a significant or unavoidable cumulative impact 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
- Population and Housing
- Agriculture Resources
- Transportation and traffic
- Noise
- Air Quality
- Biological Resources
- Hydrology and Water Quality

- Geology and Soils
- Mineral Resources
- Cultural Resources
- Aesthetics
- Public Services
- Recreation

Based on the analysis contained in this [revised](#) Tiered Initial Study, it has been determined that for those resource areas fully analyzed, 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 amended. However, further insufficient design detail currently is available to fully analyze potential impacts to utilities and service systems. Further, the project is considered potentially controversial due the use of animals in the facility. Therefore, a Focused Tiered EIR will be prepared to further evaluate the significance of impacts in the areas of utilities and service systems, and hazards and hazardous materials, and develop project-specific mitigation measures, if necessary. The Focused Tiered EIR will include an evaluation of the proposed project's impacts to utilities and to public safety to confirm the determination that impacts to these resource areas were adequately addressed in the 1994 LRDP EIR analysis. The Focused Tiered EIR will evaluate the potential impacts of the proposed project in the following resource areas:

- Utilities and Service Systems – potential impacts due to demand placed upon existing utilities and/or impacts related to construction of utility extensions.
- Hazards and Hazardous Materials – potential operational impacts due to public concerns regarding the production and use of genetically altered mice and related perceived potential for disease transmission and escapes.

Animal facilities such as those proposed under this project can engender controversy from an animal rights perspective. However, these differences of opinion are outside the purview of CEQA except to the extent that the physical operations of the facilities create environmental impacts such as increased risks from animal bites and potential disease transmission (LRDP EIR Impact 4.6-10). To provide the public and the decision makers with all relevant information about the project, the Focused Tiered EIR will include an evaluation of the proposed facilities for their conformance with the requirements laid out by American Association for the Accreditation of Laboratory Animal Care (AAALAC) ~~and USDA~~ for the proper housing and handling of laboratory animals.

The Focused Tiered EIR will also evaluate alternatives to the proposed project. The range of alternatives will include the No Project alternative, and could also include constructing the proposed project at alternative locations, redesigning the proposed project at the current site, and constructing a reduced project.

The scope of the EIR may be revised following receipt and review of comments received on the Notice of Preparation (NOP) and this Tiered Initial Study.

Public and Agency Review

This Tiered Initial Study will be circulated for public and agency review from August 29, 2000 to September 27, 2000. Comments on this Initial Study may be addressed to:

John A. Meyer
Planning and Budget Office, 376 Mrak Hall
University of California
One Shields Avenue
Davis, CA 95616

A public scoping meeting will be held on 12th October, 2000 from 4:00 PM to 7:00 PM in the Club Room at UC Davis Club on Old Davis Road. Copies of the Draft Tiered Initial Study will be available at the UC Davis Planning and Budget Office at 376 Mrak Hall, UC Davis; the Reserve Reading Room, Shields Library, UC Davis; the Yolo County Public Library, 315 E. 14th Street, Davis; and the Fairfield Suisun Community Library, 1150 Kentucky Street, Fairfield. Copies of the 1994 LRDP and LRDP EIR, WWTP EIR, 1997-98 Major Capital Improvement Projects SEIR, Center for the Arts Tiered Initial Study and Mitigated Negative Declaration, Western Human Nutrition Research Center Tiered Initial Study and Mitigated Negative Declaration, Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facility Focused Tiered EIR, and Genome and Biomedical Facilities Focused Tiered Initial Study and Draft Tiered EIR will also be available at these locations.

Organization of Tiered Initial Study

This Tiered Initial Study is organized into the following sections.

Section I – Project Information: identifies the 1994 Long Range Development Plan EIR, its supplements and amendments, and their availability.

Section II – Environmental Review and Approval: includes a summary introduction and description of the content of the Initial Study.

Section III – Project Description: includes a 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 affected by the project, involving at least one "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 would be required.

Section VII – Evaluation of Environmental Impacts: contains the Tiered Environmental Checklist form. The 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 form 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 no adverse environmental impact.

This section also contains an explanation of all checklist answers, and recommended 1994 LRDP EIR mitigation measures and project-specific mitigation measures, as appropriate.

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

Section IX – Report Preparers: lists the names of individuals who helped prepare this document.

III. PROJECT DESCRIPTION

UC Davis

The 5,300-acre UC Davis campus is located in Yolo and Solano Counties approximately 72 miles northeast of San Francisco, 15 miles west of the City of Sacramento, and adjacent to the City of Davis (see Figure 1). The campus, in general, is made up of four units: the Central Campus, the South Campus, the West Campus, and Russell Ranch (See Figure 2). The term “Main Campus” is used to refer to Central, South and West Campus units collectively and excludes Russell Ranch. The Central Campus is bounded approximately by Russell Boulevard to the north, State Highway 113 to the west, Interstate 80 (I-80) and the Union Pacific Railroad tracks to the south, and 1st and A Streets in the City of Davis 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 to the east by State Highway 113, to the north by Russell Boulevard, to the south by Putah Creek and to the west by privately owned lands. While the Central, South and West Campus units are contiguous, Russell Ranch is located to the west of West Campus and is separated from that campus unit by 1½ miles of privately owned agricultural land.

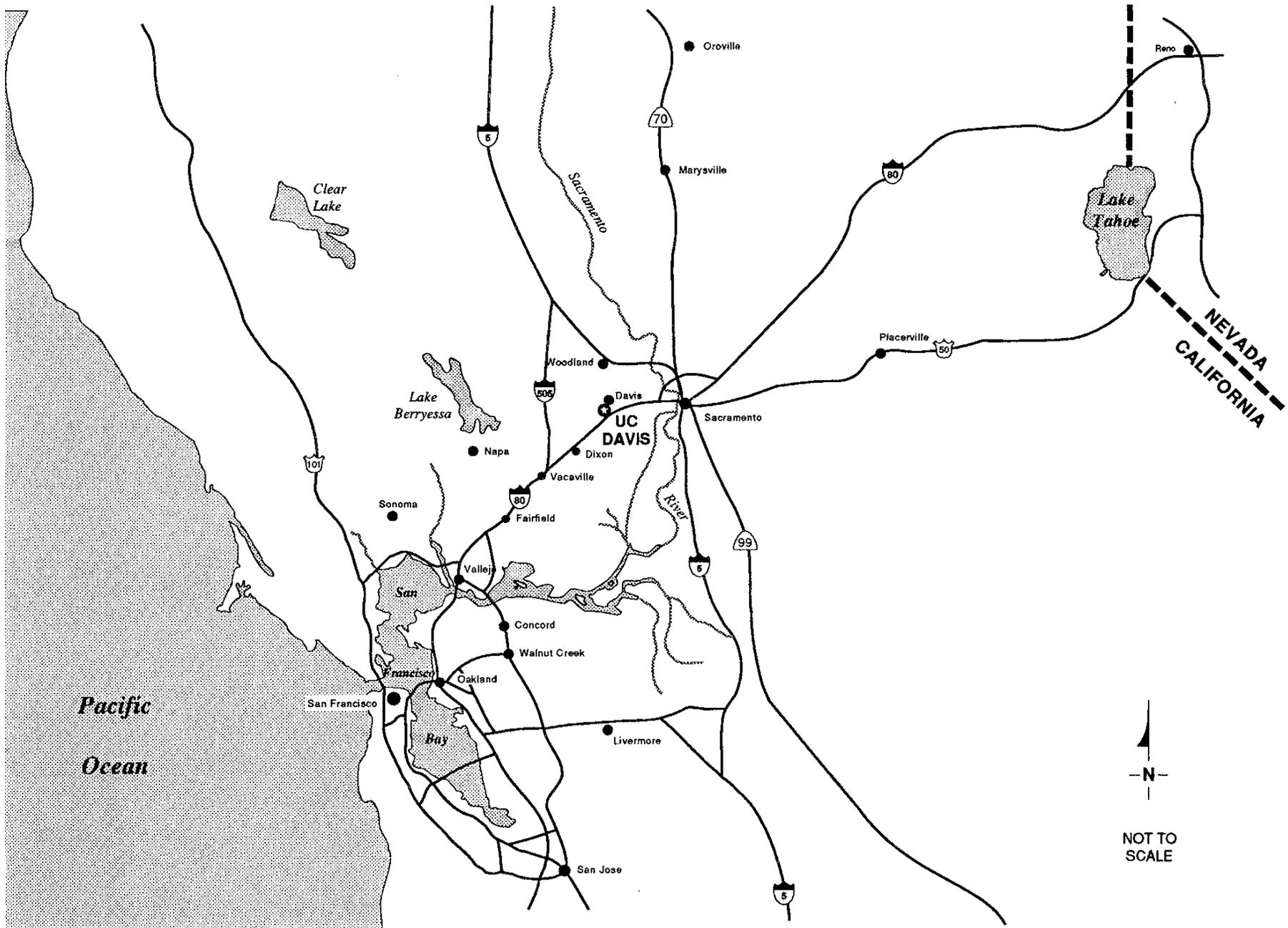
Project Description

The proposed project consists of the approval of a ground lease for the Jackson Laboratory to build and operated a laboratory facility on the UC Davis West Campus (see Figure 3). The facility would be a highly sterile building for the production of inbred and genetically modified mice, and for the long-term maintenance of specialized genetic strains of mice for use in research. The facility would prepare, breed, house and distribute genetically standardized mice to researchers at universities and research centers on the West Coast. The facility would consist of a high, single-story building, approximately ~~65,000~~96,064-gross square-feet (gsf), on a ~~56~~-acre site.

The Jackson Laboratory, JAX West at UC Davis (hereinafter JAX West), would be a highly-specialized structure sealed for the protection of the rodents. Exterior construction would be generally warehouse-style in appearance, consistent with nearby buildings. The interior would be subdivided into animal rooms and work areas designed with a high level of control on animal movement between spaces. Work areas would include office space, staff changing rooms and showers, laboratories, a small in vitro-fertilization (IVF) suite, space and equipment for storage and sterilization of animal cages, bedding and food, and warehouse and shipping and receiving space. The proposed project includes two stages. During Stage A, about 35,000 gsf of the interior space including ancillary work and laboratory space to support the entire facility at full operational capacity, would be completed and used. At Stage A, the facility would include animal housing rooms with space for 15,000 duplex animal housing and breeding boxes, each of which would contain two breeding cages with about five animals per cage, for a total capacity of 150,000 mice. During Stage B development, an additional interior space of about 35,000 gsf would be finished to accommodate an additional 15,000 duplex boxes and 150,000 mice. The project would include all necessary employee parking. The Stage A facility is expected to require an operating staff of approximately 74 full time equivalent personnel. Stage B operations would require an additional 61 employees, for a total staff of 135 at project buildout. TJL may construct the structure for the entire 65,000 gsf facility as part of Stage A work, but complete the interior Stage B work subsequently, or may construct the two stages in two modular units. The following analysis addresses the full buildout of the project, including facilities and employees for both Stage A and Stage B.

Project Site

The site proposed project site (see Figure 3) currently is occupied by an agricultural field south of Hutchison Drive, on the west side of Hopkins Road (opposite Airport Road and the University Airport) on the West Campus approximately 2 miles from the Central Campus. This level, rectangular parcel is



Source: 1994 LRDP DEIR, Figure 3-1

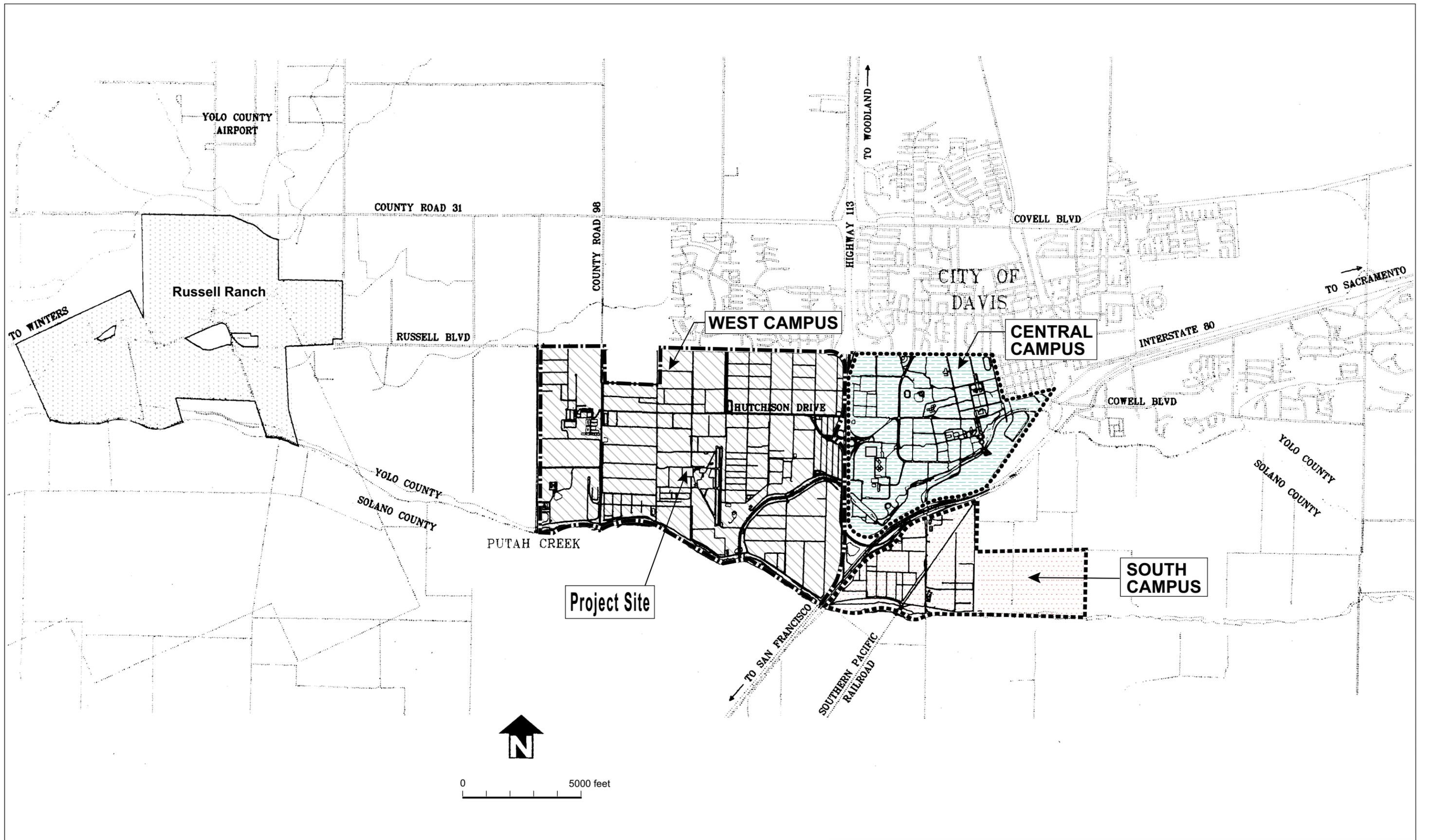


Project No. 51-00067047.00

UC Davis
The Jackson Laboratory
JAX West

PROJECT LOCATION

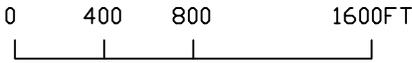
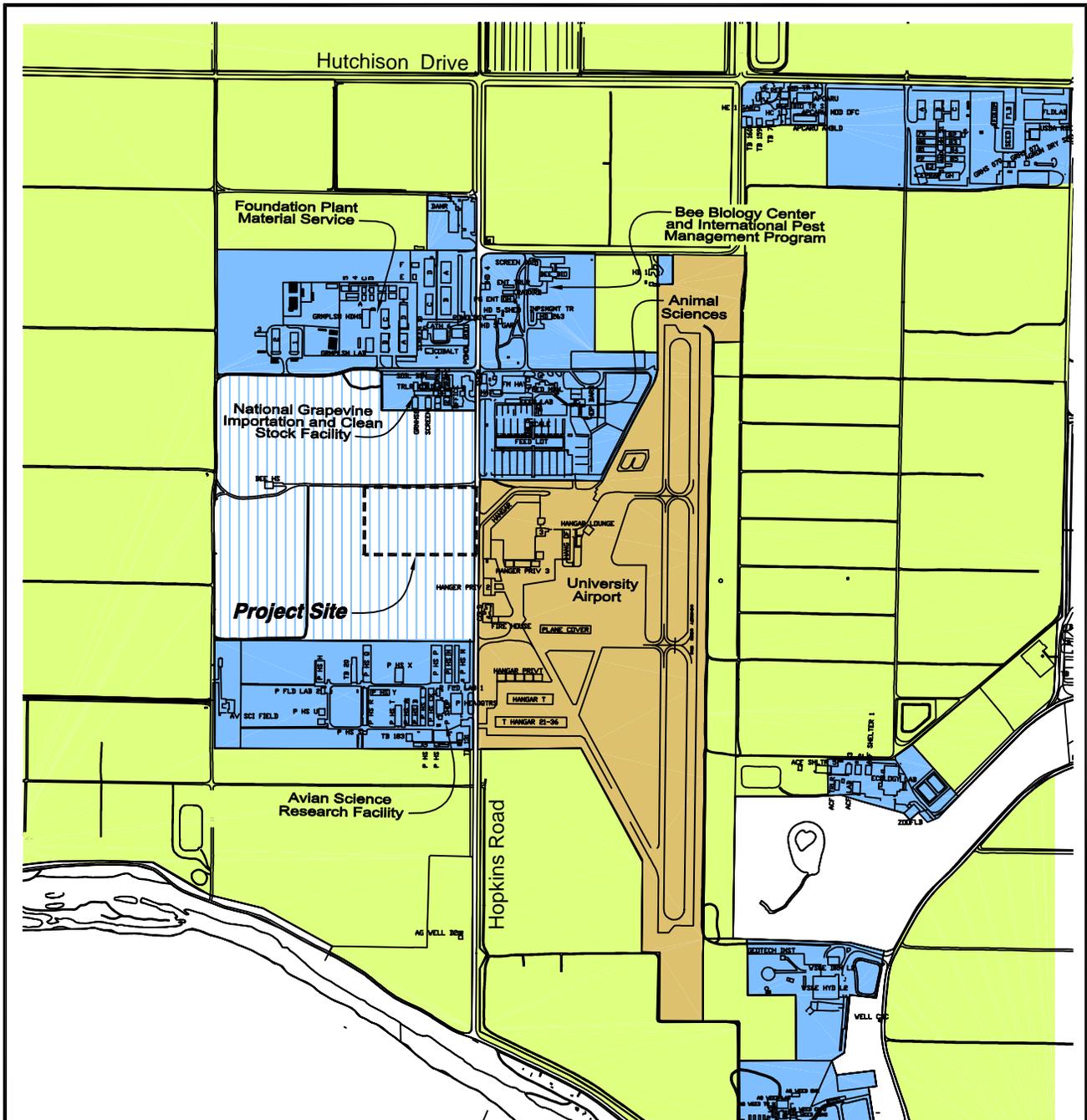
Figure
1



Source: 1994 LRDP DEIR, Figure 3-2

	Project No. 51-00067047.00	LOCAL SETTING	Figure 2
	UC Davis The Jackson Laboratory JAX West		

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LEGEND:

- Teaching and Research Fields
- Academic/Administrative Low Density
- Support
- Academic/Administrative Low Density Enterprise Reserve

Project No. 510006704600	UC DAVIS JACKSON LABORATORY JAX WEST
URS	

**PROJECT SITE AND
LAND USE DESIGNATIONS**

Figure
3

bounded on the north by a dirt service road, and the east by Hopkins Road, and on the south and west by forage production fields. Adjacent land uses include existing single-story buildings, agriculture and animal resource-related buildings, and the University Airport.

Background and Need for Project

The Jackson Laboratory

The Jackson Laboratory (TJL) is a not-for-profit basic research institute that is acknowledged to be a world leader in mouse biology and mammalian genetics (genetic research of mammals). It conducts research in genetic diseases focusing on inbred and genetically modified mice as the animal disease model. Areas of research interest include cancer, obesity and diabetes, neurobiology, cardiology and immunology. TJL was founded in 1929 as a basic cancer research institute. TJL is internationally recognized as the primary repository and supplier of inbred and genetically modified mice to the biomedical research community. Through its JAX Research Systems (JRS) Division, TJL distributes over 1,300 different mouse stocks and nearly two million mice each year to virtually every university, medical school, research institute and biotech/pharmaceutical company in the USA and 50 foreign countries. TJL is a repository for over 2,500 different mouse strains.

TJL's principal offices and operations are in Bar Harbor, Maine, with an existing small satellite facility at UC Davis. TJL operates over 500,000 gross square feet (gsf) of research and animal production facilities, and employs over 1,000 people, with an annual operating budget of 75 million dollars. TJL's existing facility at UC Davis is located in Animal Resources Service area of the South Campus in an existing animal building that was modified to serve the needs of TJL. Approximately half of TJL's revenues derive from research grants from the National Institutes of Health, National Science Foundation, private research foundations such as the Howard Hughes Medical Institute and the American Cancer Society, and from private philanthropic support. TJL's remaining revenue derives from the distribution of inbred and genetically modified mice and related services from JRS. The mice provided by JRS are an extremely valuable resource to researchers.

With the increase in genetic research at research centers on the West Coast, TJL has identified a need for a supply source that is closer to users on the West Coast, and is therefore proposing to establish such a facility in California. The objective of the current project is to ensure the supply of adequate numbers of appropriately prepared genetically modified mice for scientific research in an efficient and cost-effective manner. These research specimens are extremely valuable in the study of human genetic diseases, and serve as powerful scientific models of genetic disease for researchers world-wide. The facility is not a conventional experimental laboratory, but rather a maintenance, production and service building. Routine activities at the facility to facilitate scientific research would include: (1) importation of mouse strains of unknown health status into the colony; (2) breeding and distribution of standard mouse strains for sale to the research community; (3) long-term maintenance of specialized strains relevant to genetic research; and (4) preparation of embryos, eggs and sperm for long-term storage through deep freezing. The proposed project will contribute to the advancement of human health by supporting biomedical researchers, primarily in California, by providing a source of high quality, genetically-standardized mice on the West Coast in a cost effective manner.

UC Davis

UC Davis is preparing for the revolution in the life sciences that is occurring. The sequencing of the human genome (the identity of genes in humans) was announced on June 26, 2000. This accomplishment means that the next major scientific task is to identify the functions of genes. A major part of the UC Davis plan to meet this challenge is a campus-wide initiative in genomics (Genomics Initiative). Genomics is the study

of genes in individual organisms through the use of automation and computers. UC Davis and TJJ have agreed to form a long-term collaboration that will promote the advancement of genetic research. This research will expand the scientific understanding of the functions of genes (the biological codes which specify the traits of organisms) and their connection to human health.

The mouse is the model organism in which to study the functions of genes and their relevance to human health. This can be accomplished because the genes of the mouse are very similar to human genes. Due to the mouse's crucial role in genetic research, the Mouse Biology Program at UC Davis provides leadership in the effective integration of the mouse into scientific discovery. The Mouse Biology Program at UC Davis is designed to help scientists utilize the mouse for research to study, for example, human diseases. Some diseases under investigation include diabetes, obesity, heart disease, cancer and immune function disorders. For this work, it is essential to have facilities that can maintain mice in a germ-free environment in a cost-effective framework. Part of the collaboration between UC Davis and TJJ will include the sharing of some specific facilities and services between the two organizations to promote the mutual advancement of genetic research.

The proposed facility, including its production capabilities and services functions, is essential to the long-term research development plans of the campus in the area of genomics. UC Davis has arranged for the option to utilize part of the space in the facility for the maintenance of its research mice. The benefits of the facility to UC Davis Genomics Initiative and the Mouse Biology Program include: (1) excellent, cost-effective capabilities for the production and maintenance of mouse colonies; (2) attraction of world-class scientists in mouse biology and genomics to the campus; and (3) establishment of the leadership of UC Davis in mammalian biology and genetics. Building the proposed facility would advance and expand the University's capabilities in mammalian genetics research in keeping with its mission of research, teaching and public service.

UC Davis has determined that the collaboration with TJJ will be beneficial to the support of the new genomics program and other related programs on campus, including the School of Medicine and the School of Biochemical Engineering. By providing a site for the facility, UC Davis will ensure its researchers of a steady and cost effective supply of appropriate prepared research specimens which might otherwise be in short supply because of the lack of a West Coast facility. This facility would contribute an important element to the infrastructure needed to support of the state-of-the-art genomics research at UC Davis, and would be one more element in the enhancement of collaborative activities between the Davis campus and other organizations working in the field of genomics.

In 1997, the Davis campus engaged in a strategic planning process for genomics. Among the goals of the program was the expansion of collaborations between the academic programs related to genomics and the private and non-profit sectors. JAX West represents one such collaboration between UC Davis and a not-for-profit organization, which would be mutually beneficial. TJJ would be provided with a site for its facility, which would permit the expansion of its operations to the West Coast. UC Davis would be assured of a cost-effective and ready supply of research specimens for its many on-campus genomics programs, and have access to and use of a specialized laboratory that would advance mammalian genetic research, in keeping with the campus' teaching and research mission.

Project Elements

The proposed project involves the approval of a ground lease by The Regents for use of the site by TJJ. The project would involve: (1) construction of an approximately ~~96,064 65,000~~ gsf (approximately ~~81,123 50,000~~ assignable square foot [asf]) one-story research laboratory building (with a partial second story); (2) addition of approximately 135 new employees to the existing campus population; and (3) construction of all necessary new parking. The primary function of the facility is to prepare and breed genetically

standardized mice and to provide researchers, primarily in California, with appropriately prepared research specimens. The facility includes rodent housing and breeding space, surgical space for the appropriate preparation of specimens, and a laboratory to test incoming materials to ensure that they do not carry contaminants. The laboratory would meet the American Association for Accreditation of Laboratory Animal Care (AAALAC) standards.

Building Design and Construction

The footprint of the outer building would measure approximately ~~330 380~~ feet by ~~220 170~~ feet and encompass approximately ~~96,064 65,000~~ gsf. In exterior construction, the structure would be a high single-story warehouse-style building, with a roof peak at about 18 feet in height and eaves at about 16 feet. The interior would be subdivided into animal rooms and work areas. Construction would consist either of tilt-up panelized concrete or a steel frame and shell Butler building on a concrete slab, and would not require pile-driving or extensive excavation or grading. All necessary employee parking would be provided on site.

“High-barrier” design and construction techniques would be employed throughout, primarily to protect animals inside the facility from outside pathogenic or genetic contamination from other external rodent, airborne, or personnel-borne elements. This design would also protect against accidental releases of the rodents. This type of construction entails thorough sealing of the building and HEPA filtration of incoming air. Special consideration would be given during construction to all floor, wall and ceiling penetrations to prevent unsanitary conditions and vermin infestation within the facility. Precautions during construction would include use of silicone caulk in all crevices and wall penetrations; pre-treatment for vermin control before closing off walls and ceilings; and no eating or drinking inside animal areas during their construction. Additional measures to discourage contamination from the exterior would include a stone rodent strip (a four-foot-wide crushed stone strip around the structure), and restricting and removing all vegetation near the building façade. These measures would reduce the opportunity for nesting of birds and infestation by outside rodents, mites or insects. Additional protective measures would include exterior lighting by high-pressure sodium lamps, and small-mesh screening of all operable windows and vents. Exterior perimeter traps may also be used to control feral rodents. The facility would be vermin-proof and waterproof.

A security guard would be present during night hours. Exterior fencing would be of “rural” appearance. Card-access controls would be used for entry.

Housing and Breeding Rooms

The breeding facilities would consist of high-barrier animal housing space, built and managed to provide the strictest control of the breeding environment. As noted above, the facility at buildout capacity would include housing and breeding space for up to 300,000 mice in a total of 30,000 duplex boxes. The proposed facility would be a “direct-sterile-supply” facility, designed around a system of sterile and soiled material handling corridors with strict operational controls to limit the risk of contamination from one room to the next. Boxes to hold mice are constructed in two-cage units; each cage houses about five mice. In this type of facility, the boxes are housed in discrete modules of 2,500 boxes in a series of high-barrier rooms flanked by “sterile” and “soiled material” corridors. The separation of breeding cages into smaller groups reduces the risk of infection between sub-populations should contaminants enter the laboratory, and also controls against accidental escapes, since any released rodent would be observed readily in a small enclosed room. Within the housing area, the cages would be individually ventilated and room temperature and humidity would be controlled. Multiple lighting illumination levels would be provided. All room finishes would be designed to allow frequent wash-downs and cleaning. The proposed building would incorporate high-reliability environmental/HVAC systems, controlled to tight tolerances. Properly

conditioned air must reach the animals at all times, and this would be ensured by redundant HVAC systems and an emergency backup power system (a diesel generator) with an above-ground tank.

Both personnel and materials would access the facility through at least two sets of doors in series, which would create intermediate airlock spaces. A number of design and operational procedures in place at other TJL facilities would be applied to this facility. To ensure sterile conditions and animal control, all animal room doors would have tight gasket seals and special bottom-drop seals that seal the door to the floor upon closure. Physical penetrations of the rooms would be minimized and controlled. Personnel entry/exit locks normally would be left closed via interlocked airlock doorways.

The animal housing itself would consist of plastic caging with secure top covers that would be removed periodically for the purpose of examining the animals, managing breeding, changing bedding, and providing food and water. These procedures would be performed in changing stations under controlled conditions. Rooms would be positively or negatively pressurized to the exterior depending on whether the room is considered pathogen free, high-health or low-health status versus non-pathogen free. Operational controls would include HEPA filtration for incoming air to prevent contamination of the rodent population, which may be immunologically compromised.

Ancillary and Support Facilities

Several laboratory spaces would be constructed as part of the facility. These would include the In-Vitro Fertilization (IVF) lab, a wet lab, a genotyping lab, and a cryopreservation facility, together totaling about ~~7,212 2,600~~ gsf. An additional node would provide ~~2,560 1,000~~ gsf for mini-importation (see below); and ~~1,560 gsf of~~ isolator space.

In-Vitro Fertilization (IVF) Laboratory. This laboratory would comprise a surgery room and supporting facilities including two biosafety cabinets, an autoclave, a scrub room, animal preparation/recovery room, ancillary procedure rooms, and an x-ray room. Procedures that would be conducted routinely here would include micro-injection and embryo transfer. The biosafety cabinets would be used to protect the animals undergoing surgical procedures from external contamination. There would be no biohazardous agents used in the laboratory that would require the use of biosafety cabinets for the protection of workers.

To carry out in-vitro fertilization at a level anticipated for full-scale production, there would be six workstations. Each workstation would have a microscope and a small bench-top incubator. The room would be provided with a HEPA filtered air supply because of culture work to be carried out there. A central gas delivery system to each workstation would also be provided. Two floor-standing incubators would be included in the IVF laboratory to serve all the workstations. In addition, other equipment in the laboratory would include a centrifuge, osmometer, a computerized sperm analyzer, and desktop computers. General laboratory equipment such as a refrigerator, an ultra-pure water system, a 6-foot biosafety hood, and a fume hood would also be provided.

This facility would be used to carry out the in-vitro fertilization of eggs collected from female mice by sperm harvested from male mice. In-vitro fertilization essentially consists of culturing the eggs and sperm together in sterile medium in culture dishes that are then incubated under a gas environment consisting of 5% oxygen and 5% carbon dioxide with a balance of nitrogen. Upon successful fertilization, the resulting embryos are transferred into recipient foster mothers for gestation to birth. The embryo transfer is carried out in a surgical procedure room inside or adjacent to an animal room where the mice are housed.

Wet Laboratory. The central area of the facility also would include a “wet lab” to be used for quality control materials testing. The laboratory would contain desks and benches for work areas, laboratory equipment, cabinets and shelves for storage, sinks, gas, air and vacuum lines, up to two fumehoods, and an

area for sterilization and glass-wash. The laboratory would be used for testing of incoming materials. It is anticipated that small amounts of controlled chemicals would be stored and used in the wet lab for standard chemical testing procedures. Chemicals that might be used in the wet laboratory include acrylamide, and small amounts of organic compounds such as phenol, chloroform, guanidium and isothiocyanate. These types of chemicals are commonly used in laboratories on campus.

Genotyping Laboratory. The genotyping laboratory would be used for analysis of genes from small samples of DNA isolated from mouse blood (“genetic fingerprinting”). The majority of genotyping in the laboratory would use a polymerase chain reaction (PCR) procedure. Laboratory equipment requirements would include centrifuges, thermal cyclers, gel analysis and imaging systems, computers, a spectrophotometer, and automated pipetting devices. Additional equipment might include a sequencer, a flow cytometer, a fluorescence-based PCR instrument, or possibly an imager for radioisotopes. If radioisotope imaging is pursued, small amounts of medical radioisotopes phosphorus ³²P and ³³P would be used. Viable alternatives to the use of radioisotopes are available and may be used.

Cryopreservation Facility. JAX West would also include a cryopreservation facility for collection and rapid freezing of mouse embryos for future use. Embryo cryopreservation consists of collecting 8-cell embryos from female mice that were induced to ovulate with hormone injections prior to mating with a male. The embryos are put into vials containing a buffer medium with dimethyl sulfoxide as a cryoprotectant and then cooled at a rate of 0.5°C per minute to –80°C at which time the vials are then placed into liquid nitrogen storage containers for permanent storage. All information concerning the genetic identification of the embryos and storage location of vials would be recorded in a database for efficient data management.

The cryopreservation facility would require three separate, but adjacent areas, ~~totaling about 1,000-gsf.~~ These would include a mouse embryo and sperm collection station, a freezer station, and general laboratory space. The collection station would include four workstations in a room supplied by HEPA-filtered air. Oviducts and epididymides would be surgically removed from the mice in a 6-foot biosafety hood at each station. Each workstation would also be equipped with a stereo dissecting microscope.

A freezer area would hold liquid nitrogen storage containers and two to three controlled-rate freezing units. This room would have liquid nitrogen delivered by means of vacuum-insulated stainless steel pipe from an exterior 1,000-gallon-capacity bulk tank. A high air exchange rate would be maintained in this room to avoid hazards associated with the use of liquid nitrogen. The high air exchange would keep evaporating liquid nitrogen from displacing oxygen to dangerous levels. An oxygen monitor would also be installed. All freezing and storage would be carried out in this room.

Adjacent general laboratory space would be provided for preparation, storage of materials used in the other areas of the cryopreservation facility (such as pipettes for embryo manipulation, hormone preparations for priming female mice, and media in which embryos are frozen or cultured), and data entry. This would include four workstations, and equipment such as a centrifuge, osmometer and weighing balance either on a solid benchtop or on a vibration-free stand. This area also would provide desktop space for computers, printers, and file cabinets.

Mini-Importation. Space would be allowed in the facility for the possible development of a mini-importation laboratory, which would allow the facility to take in animals of unknown health status. Through various forms of rederivation, such as cesarean section or sperm extraction, clean progeny of these animals could be produced and subsequently imported into the facility’s population.

Isolator Space. Space in the facility would be used for isolators, which are special cages to hold specific strains of mice. ~~As a separate project, TJL is proposing to modify approximately 1,500 square feet and~~

~~add 250 square feet in a 22,000 square foot building (J-1) in the Animal Resources Service Area of South Campus (Figure 2). This building would be used as isolator space. If the proposed project, or another~~

~~West Coast Jackson Laboratory facility is constructed, the isolator space in J-1 would be moved to the new facility. Therefore, the proposed project includes discontinuation of the use of J-1 as isolator space, transfer of the isolator space to JAX West, and reuse of J-1 by the campus for office, laboratory, or animal space.~~

Animal Support. Other functions in JAX West would include receiving/delivery areas and storage rooms for food and bedding supplies, shipping or distribution areas for export of rodents, centralized cage washing and autoclave facilities, waste compactors for disposal of waste and used bedding and sterilization of cages and equipment, holding rooms and quarantine areas. Separate “sterile” and “soiled material” areas would be maintained to protect against any contamination between sterile and soiled materials.

Administrative Support. Work areas within the facility would include administrative offices, and break rooms for staff, including wash, eating and locker facilities completely separated from the animal areas. These would be supplied with hot and cold water, electricity and phones, and computer and telecommunications hookups.

Procedures and Protocols

Protections Against Contamination of Animals. The breeding facility consists of high-barrier animal housing space, built and managed to provide the strictest control on the breeding environment, as described under “Housing and Breeding Rooms,” above. The proposed facility would be a “direct-sterile-supply” facility (i.e. all materials used in the production of the animals would be of sterile grade). In such a facility, fresh supplies and recycled breeding boxes are sterilized prior to entry to the animal spaces. Strict separation between “sterile” and “soiled” areas of the facility, and integrity of the clean rooms would be maintained through design, and through procedural controls and protocols. Personnel would enter the animal areas through a specialized entry-airlock system in which they would change from street clothes to caretaker clothes. Prior to each entry into the animal space, the caretaker would scrub up, shower, change to full-cover sterilized clothing, and don in-room shoes, gloves and haircovers. In the clean space, the caretaker would perform a number of specialized tasks, including inspection of the animals, food and water checks, setting up the matings, changing animals into fresh cages, weaning offspring, performing computer data entry, order picking, packing, and in-room cleaning. Soiled cages would be removed through a second series of airlocks to the soiled material corridor and the cage-washing area. The cage-washing area would be used to re-process the soiled cages, waterbottles and associated components on a one to two week cycle for each cage. Cages would be autoclaved, recharged with fresh bedding and water, and then sent back to the breeding rooms via the sterile corridor.

Protections Against Escapes. Internal design elements, which includes enclosed corridors and a number of smaller enclosed rooms for housing and other operations, are designed to ensure that any possible rodent escapes would be detected immediately. The design and operational procedures described above, including use of small tightly controlled rooms for housing and other procedures; room, cage and building seals; and exterior landscape design, serve both to ensure against internal contamination and control against escapes. All these animals are extremely valuable, and are handled and accounted for with great care, as described above in detail. An occasional in-room escape is inevitable, but such events are rare. Because the production animals are not treated with hazardous substances, escapes pose no risk outside the facility. When an animal escapes inside a barrier room, generally it is trapped in a live trap purposely left in place for such events.

Construction Process and Schedule

It is anticipated that project construction would require approximately 12 months from ground-breaking to occupancy. Project site clearing would begin in ~~April February or March~~ 2001 and the building would be occupied in ~~approximately February Winter, 2001 -~~ 2002. The site is essentially flat and no major grading is anticipated. Hours of construction would normally be from 7 a.m. to 5 p.m. Monday through Friday. Since no pile driving would be needed, high noise and vibration activities associated with construction would be very limited.

**Table 1
JAX West Space Allocation**

Space Allocation	Gross Square Feet	Assignable Square Feet
Animal rooms	23,040 24,261	23,040 24,261
Isolator space	1,560 2,560	1,560 2,560
Mini Importation	1,000	1,000
Caretaker entry exit locks	4,140 9,750	4,140 9,750
Clean break area	600 2,352	600 2,352
Cage wash and sterile processing	5,940 9,370	5,940 9,370
Materials delivery corridors	5,760 5,665	5,760 5,665
Shipping and receiving	792 2,225	792 2,225
Administrative	1,420 11,325	1,420 11,325
Warehouse	2,500 6,403	2,500 6,403
Laboratories	2,600 7,212	2,600 7,212
Access corridors	600 5,317	N/A
Unprogrammed	2,272 1,424	N/A
Mechanical	11,200 8,200	N/A
Total	63,424 [†] 96,064	49,352 81,123

[†]Since the final design of the facility is not complete, 65,000 gsf or 50,000 asf is assumed for purposes of environmental review.

Population

The facility at buildout would require a staff of up to ~~131~~ ~~135~~ persons and would be staffed seven days per week. The facility would be staffed in two overlapping shifts. A smaller number of employees would work the early morning shift, with the majority of staff, about 120 persons, during regular business hours. The site would be patrolled during night hours.

It is anticipated that the facility, initially at least, would be staffed with a “seed staff” from TJL’s East Coast facility, augmented by local trainees or skilled workers. The local staff would be expected to be drawn primarily from current residents of the local area or those within commuting range, with the exception of a few individuals who might move to the area from the ~~East Coast Maine~~ facility.

Landscaping

Portions of the site that are not needed for the proposed facilities would be landscaped with plant materials similar to those used in adjacent areas, consistent with campus design requirements. As noted above, there would be no landscaping near the façade of the building. The building would be surrounded by a 4-foot graveled rodent strip.

Setbacks

The Jackson Research Laboratory would be located on Hopkins Road on the West Campus. Design will include appropriate setbacks on all sides, as required for adequate fire and emergency vehicle access, and by UC's Design Review Board. The footprint of the building will be approximately ~~330-380~~-feet by ~~220-170~~-feet, but it is anticipated that this will be refined in final design.

Utilities and Infrastructure

The proposed project would require connections to campus utilities and infrastructure including electrical, natural gas, potable water, sanitary sewer, storm drains, and communications. Utility connections to the site would be made at the nearest connection points on Hopkins Road.

It is anticipated that the facility would produce 32 tons of uncontaminated solid waste (primarily soiled wood shaving from cages) per month. This would be stored in waste holding areas adjacent to the internal "soiled" areas, and regularly transported to the campus landfill. The facility would also produce about 3.1 tons of rodent carcasses per month. The carcasses would be hauled to the campus incinerator or sent to an outside contractor for disposal by incineration. If not to be incinerated immediately, the carcasses would be frozen to avoid decomposition and objectionable odors. Wastewater from the facility would be discharged to the UC Davis sanitary sewer system. Electrical power, potable water and natural gas would be supplied to the facility from taps to existing UC Davis lines. Anticipated monthly usage is under review, and will be analyzed in the Focused Tiered EIR for this project. Existing UC Davis steam lines and chilled water lines do not supply this area of the campus. The facility would supply steam for its autoclaves or other sterilization equipment through a natural gas-fired steam generator within the facility. Chilled water would be electrically generated on site.

Electrical power would be supplied from the campus 12KV distribution system. The service would be to either an outdoor pad-mounted transformer or an underground vault transformer that would serve the project. Lighting would be designed to achieve Illuminating Engineering Society (IES) recommended lighting levels while staying within the power limitations of Title 24 energy regulations. In general, fluorescent lighting would be used in office and laboratory areas and decorative lighting outdoors. A diesel generator would be installed to provide emergency and standby power.

A fire alarm system would be provided with connection to the Central Campus system. Smoke detectors would be installed in accordance with code and as required by the State Fire Marshal. The systems would be linked to the sprinkler flow switches and valve monitors.

The building would tie into the campus telephone and data networks through copper and fiber optic cable to the main telecommunications room.

A door contact, card key central alarm panel would be provided for the security system. The security alarm would be connected to the UC Davis campus police department.

Roadway and Parking Improvements

The proposed project site would be accessed from Hopkins Road and an existing service road. Hopkins Road is adequate to handle truck deliveries. If facility egress or ingress is established on the service road, that roadway pavement would be improved for truck travel.

Approximately 135 parking spaces would be provided in a lot adjacent to the building. Bike racks would also be provided. A loading dock would be constructed to serve the building.

Project Schedule

This project is scheduled for consideration by The Regents in January 2001. If approved, construction would begin in February or March 2001 and be completed by approximately February 2002. Construction staging would take place on-site in the parking lot portion of the site. Construction traffic would access the site via Hutchison Drive and Hopkins Road.

Project Approvals

As the public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA, and is responsible for reviewing and certifying the adequacy of the environmental document and approving the proposed project. It is anticipated that The Regents will consider design approval of the proposed project in January 2001. Since the project site is proposed to be leased to TJL by The Regents, lease approval by The Regents also will be required. As discussed later in this Initial Study, several LRDP mitigation measures have been incorporated into the proposed project to reduce or avoid environmental impacts. These LRDP mitigation measures, and any project-specific mitigation measures adopted by The Regents will be included in the lease agreement for the project to ensure that they are fully enforceable by the University and that they are implemented by TJL.

Because the project site is about ~~6.5~~ acres, the project contractor would file a Notice of Intent with the State Water Resources Control Board to comply with NPDES requirements. A storm water pollution prevention plan would be developed and implemented during project construction as required by the General Permit.

IV. CONSISTENCY WITH 1994 LONG RANGE DEVELOPMENT PLAN (LRDP)

In order to determine the project's consistency with the 1994 LRDP and 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 adopted objectives 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 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.

1994 LRDP Scope of Development

The 1994 LRDP approved development of approximately 1.75 million assignable square feet (asf) for academic and administrative uses, support, libraries, and student services. Since the adoption of the LRDP, approximately 505,570 asf of space has been approved, constructed, or occupied. A breakdown of building space inventory for campus buildout is presented in Table 2. The proposed project would construct approximately 81,123 ~~50,000~~ asf of space. This additional space would not cause UC Davis to exceed planned development in the 1994 LRDP. The project would therefore be consistent with the development approved under the 1994 LRDP. Other projects under consideration by UC Davis at this time (California Regional Primate Research Center Improvements, the Veterinary Medicine Facilities Improvement Project, the Genome and Biomedical Sciences Facility, the Hotel/Conference Center and University Relations Building, the Activities and Recreation Center (ARC), and the Sciences Laboratory Building), if approved, would add approximately 633,950 asf to the campus (Table 3). All of these proposed projects combined would add 715,073 ~~683,950~~ asf which would not exceed the development approved under the 1994 LRDP.

Table 2

Building Space Inventory and Building Space Need Projections for Campus Buildout Year 2005-06

Program	Built /Approved Space as of 1998-99	Built /Approved Space as of 1999-00	Projected Built Space in Year 2005-06	New Development Built or Approved Since 1994	New Development proposed in the 1994 LRDP (1994-2005/06)
Instruction and Research ¹	3,232,704	3,308,588	4,146,559	365,679	1,205,000
Libraries	404,749	404,749	499,353	-802	93,000
Student Services	400,656	400,656	423,241	37,415	60,000
Administrative/Support	993,163	993,163	1,165,601	89,562	262,000
Public Service/Non-University Agencies	143,352	143,352	260,986	12,366	130,000
TOTAL	5,175,426	5,250,508	6,495,740	505,570	1,750,000²

¹ Includes all instruction and research-related space including health sciences, organized research units, organized activities and museums.

² 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.

SOURCE: UC Davis Planning and Budget Office

Table 3
Projected Increases in Population and ASF from Projects Under Environmental Review
Compared with LRDP 2005-2006 Projections

Proposed Project	Assignable square feet	Student Population	Staff Population	Total On-Campus Population
Genome and Biomedical Sciences Facility	122,549	200	200	400
Primate Center	6,180	0	15	15
Veterinary Medicine Facilities Improvement	180,837	650	190	840
Activities and Recreation Center	105,000	0	15	15
Science Lab Building	81,384	0	20	20
Hotel and Conference Center*	138,000	0	299	299
Jackson Laboratory	50,000 <u>81,123</u>	0	135 <u>131</u>	135 <u>131</u>
Total additional	683,950 <u>715,073</u>	850	874 <u>870</u>	1,724 <u>1,720</u>
Existing Space (Built/Approved** 1999-2000)	5,250,508	22,839	10,355	33,194
Projected with above additions	5,934,458 <u>5,965,581</u>	23,689	11,229 <u>11,225</u>	34,918 <u>34,914</u>
Projected by LRDP 2005-06	6,495,740	26,000	12,630	38,630

* Includes University Relations Building

** Includes WHNRC and Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities, projects that were approved in 1990-00.

1994 LRDP Land Use Designation

As shown in the 1994 LRDP 2005 Land Use map, the proposed location of JAX West is on a parcel currently designated Academic and Administrative Low Density with an overlay of Enterprise Reserve, in the LRDP adopted by UC Davis in 1994. Low Density Academic and Administrative use includes teaching and research support uses, including greenhouses, field support, laboratories, offices, agricultural-related space, animal science facilities and animal housing, typically one story and with low density occupancy. Enterprise Reserve designation identifies areas on campus where development would be financed in cooperation with public or private organizations external to the campus. Uses may include affiliated research, faculty housing, commercial activity, recreational and cultural facilities, office support, and open space amenities. JAX West, as a laboratory animal breeding facility in support of biological research, and as a non-profit enterprise is consistent with the land use designation in the 1994 LRDP.

1994 LRDP Population Projections

The anticipated population growth under the 1994 LRDP is summarized in Table 4. As shown in this table, the 1998-99 population estimate for campus faculty, staff and students is 32,982 (22,803 students and 10,179 faculty and staff). Recently approved projects include the Major Capital Improvement Projects, Center for Arts Performance Hall and South Entry Roadway Project, 1999 Chilled Water Expansion Project, the USDA WHNRC, and the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities. These projects together would add approximately 176 new full-time campus employees and 36 students, and therefore once these projects are built, campus faculty and staff population would increase to 10,355 and student population would increase to 22,839.

**Table 4
Projected Campus Population**

Population	1992-93 ³	1998-99 ⁴	2005-06 ⁵
Students ¹	21,060	22,803	26,000
Faculty and Staff ²	9,550	10,179	12,630
Total Population	30,610	32,982	38,630

¹ Off-campus student population not counted in this total. Approximately 570 students are located at the UC Davis Medical Center, Sacramento Campus and an additional 280 students are 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 Campuses, Russell Ranch and at campus facilities in the City of Davis sphere of influence.

³ Base year for 1994 LRDP EIR analysis.

⁴ Most recent population figures.

⁵ Projected 1994 LRDP buildout.

Sources: Table 3-1 on page 3-3 of the 1994 LRDP DEIR, UC Davis Planning and Budget office, EIP Associates, 1993, 1995, and 1997.

The proposed project at buildout would add approximately ~~131,435~~ full-time employees increasing the number of employees on campus to ~~10,486~~ ~~10,490~~. Other projects under consideration at this time at UC Davis would add up to 739 new employees. This would increase anticipated faculty and staff population to ~~11,225~~ ~~11,229~~. This would not exceed the faculty and staff population projected under the 1994 LRDP (12,630). The proposed project would therefore be consistent with the 1994 LRDP population projections.

One currently proposed project, the Genome and Biomedical Sciences Facility, would provide facilities for a total of 350 students, 200 of whom would be new to campus and 150 of whom would be transferred from other existing campus facilities. Another proposed project, the Veterinary Medicine Facilities Improvement Project, would add 650 students to the campus. No new students are anticipated as the result of the establishment of JAX West. These additions (850 students) would bring total student population to 23,689, which is consistent with the 1994 LRDP projections of 26,000 students. The 1994 LRDP projections would not change as a result of this project.

1994 LRDP EIR Cumulative Analysis

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

The proposed project includes construction and operation of new facilities on the West Campus. As discussed above, the proposed JAX West is consistent with the 1994 LRDP scope of development for Low-Density Academic and Administrative use with Enterprise Reserve overlay, and population projections for buildout through 2005-06.

The technical discussions in the Tiered Initial Study Checklist concluded that the proposed project would:

- not contribute to significant and unavoidable cumulative impacts identified in the 1994 LRDP EIR related to use of biohazardous materials (see Item 7a);
- incrementally contribute to, but not exceed, significant and unavoidable cumulative impacts identified in the 1994 LRDP EIR related to loss of prime farmland (see Item 2a), noise level (see Item 5a, c) increased traffic volumes (see Item 4a), criteria pollutants and toxic air contaminants (see Item 6 b, c, d), hazardous materials use (see Item 7a), radioactive materials use (see Item 7a), emergency response (see Item 7g), [biological resources \(see Item 8a\)](#), post-construction water quality (see Item 9a), loss of groundwater recharge potential (see Item 9b), demand from the deep aquifer (see Item 9b), seismic groundshaking (see Item 10a), loss of cultural resources (see Item 12b, d), loss of rural character (see Item 13c), fire protection services (see Item 14a(i)), police protection services (see Item 14a (ii)), and contribution of school age children to the Davis Joint Unified School District (see Item 14a (iii)); and
- incrementally contribute to, but not exceed, less-than-significant cumulative impacts identified in the 1994 LRDP EIR related to transit and parking demand (see Items 4c, d), carbon monoxide emissions (see Item 6b,c), transport of hazardous materials (see Item 7a), demand from the shallow/intermediate aquifer (see Item 9b), parks and recreation demand (see Items 14a (iv) and 15a), electricity and natural gas demand (See Item 16h), wastewater capacity (see Item 16a, b, e), and solid waste disposal capacity (see Item 16f).

At this time, the University is undertaking preliminary feasibility studies to consider the possible future enrollment growth at some of the campuses, including UC Davis, over the next 10 to 15 years. To the extent that such future growth would cause growth which is not consistent with the 1994 LRDP and/or physical changes to the environment that have not been considered in the 1994 LRDP EIR, additional cumulative impacts could conceivably occur. However, analysis of any such impacts would be speculative at this time because the current efforts are merely preliminary in nature and do not constitute anything more

than feasibility and planning studies, as defined in the CEQA Guidelines Section 15262. In any event, it is not currently anticipated that the year 2005-06 population estimates in the 1994 LRDP EIR will be exceeded.

1994 LRDP Objectives

The campus has identified academic goals to continue to fulfill its academic mission, build upon its traditional strengths, and anticipate changing instructional and research programs. As a consequence of the excellence of its academic programs and the general growth in population in the state of California and elsewhere, the campus will continue to attract students and therefore it is reasonable to expect that the campus student population will continue to grow compared to current numbers. Similarly, faculty and staff numbers are projected to grow. The 1994 LRDP responds to this projected growth in campus-related population by:

- Providing for new instructional space and classrooms required to serve the anticipated growth in student population,
- Providing for 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 to these overall objectives, the LRDP contains specific objectives that are of relevance to the proposed project. These include the following:

- Designate high and low density academic sites as Enterprise Areas to facilitate academic initiatives outside the academic core.
- Reserve low density academic and administrative lands on the West Campus for campus uses or affiliated public and private research.
- Cluster new development identified for West and South Campuses into existing development or on the edges of agricultural areas to retain larger, more usage blocks of agricultural land.
- Cluster related administrative and academic programs geographically when feasible, to facilitate academic interaction.
- Preserve flexibility beyond the life of the plan by keeping new buildings clear of potential roadways and bikeway corridors.

The proposed project would be consistent with the objectives contained in the 1994 LRDP. The project would construct an animal breeding laboratory in support of the campus' Genomics Initiative. The establishment of a local breeding laboratory facility on the campus is a cost-effective means of ensuring a supply of appropriately prepared research specimens for existing and anticipated research programs and for furthering the campus' research and teaching mission. This is also consistent with the mission of the campus to anticipate the need for and supply appropriate support to new and existing instructional and research programs. Building the proposed facility would advance and expand the University's capabilities in mammalian genetics research in keeping with its mission of research, teaching and public service.

V. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below potentially would be 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 checked="" type="checkbox"/>	Hazards & Hazardous Materials	<input type="checkbox"/>	Aesthetics
<input type="checkbox"/>	Agriculture 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 checked="" type="checkbox"/>	Utilities/Service Systems
<input type="checkbox"/>	Noise	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Mandatory Findings of Significance
<input type="checkbox"/>	Air Quality	<input type="checkbox"/>	Cultural Resources		

This Tiered Initial Study has concluded that further analysis is required to determine the level of significance of impacts to certain resource areas including Utilities and Service Systems, and Hazards and Hazardous Materials. As a result, a Focused Tiered EIR will be prepared to evaluate impacts and propose project-specific mitigation measures, if needed, for these resource areas.

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, the University finds:

- 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 been avoided or mitigated 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 potentially significant impacts not previously identified in the 1994 LRDP EIR, but proposed project-specific mitigation measures would reduce the effect of such impacts to a point that clearly no significant impacts 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 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 or sufficient information does not exist to evaluate the level of significance of certain impacts that may or may not have been previously identified in the 1994 LRDP EIR. A Tiered 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 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 form identifies potential project effects as follows: (1) **Potentially Significant Impact** is an effect, which 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** applies where the incorporation of mitigation measures has reduced an effect from a “Potentially Significant Impact” to a “Less-than-significant Impact.” The Tiered Initial Study includes mitigation measures, and briefly explains how they reduce the effect to a less-than-significant level; (3) **Impact for which LRDP/Program EIR is Sufficient** applies where the impacts of the project were adequately addressed and mitigated to the extent feasible in the 1994 UC Davis Long Range Development Plan EIR or in a Program EIR; (4) **Less-than-significant Impact** applies where the project creates no significant impacts, only Less-than-significant impacts; (5) **No Impact** applies where a project does not create an impact in that category.

Environmental impacts of the project that are determined in this Tiered Initial Study to have been adequately analyzed and mitigated in the LRDP EIR generally fall into one of two categories: (1) impacts that were determined to be less than significant after the implementation of the mitigation measures in the LRDP EIR and (2) impacts considered significant and unavoidable in the LRDP EIR. As to the first category, no further analysis is required since the LRDP EIR and associated mitigation measures would reduce all project-level impacts to a less-than-significant level for all projects within the LRDP, including this project. Impacts identified as significant and unavoidable in the LRDP EIR include (a) impacts identified as significant for some projects in the LRDP, but which would not be significant in relation to the proposed project; (b) impacts that are significant on a cumulative level but not at a project level, for which the 1994 UC Davis LRDP EIR fully addresses the cumulative impact; and/or (c) impacts for which the analysis and mitigation measures are sufficiently generic so that no further analysis is necessary or appropriate on a project level (that is, the 1994 UC Davis LRDP EIR contains all of the analysis that reasonably could be included on the topic with respect to all projects generally, including this project, and there is little variation from project to project). The specific basis for concluding that the LRDP EIR adequately analyzes the impact is set forth below.

Substantiation and clarification for each checklist response is provided below. Included in each discussion is a summary of relevant information from the LRDP EIR and LRDP EIR mitigation measures, as appropriate, that are recommended for implementation as part of the proposed project.

IMPACT QUESTIONS

1. LAND USE AND PLANNING

Cumulative impacts of campus growth through 2005-06 on land use and planning issues are addressed in Section 4.1 of the 1994 LRDP EIR; in Section 4.6 of the 1997 WWTP Replacement Project EIR; in Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR; Item 1 of the Center for the Arts Tiered Initial Study and Mitigated Negative Declaration; Item 1 of the USDA WHNRC Tiered Initial Study and Negative Declaration, and Item 1 of the Genome and Biomedical Sciences Facility Draft Focused Tiered EIR.

Background

The 5,300-acre UC Davis campus, in general, comprises four campus units: the Central Campus, the South Campus, the West Campus, and Russell Ranch (please see Figure 2). The 1994 LRDP land use designations include Academic and Administrative (High Density and Low Density), Support, Housing, Physical Education/Intercollegiate Athletics/Recreation (PE/ICA/Recreational), Teaching/Research, Open Space, Parking and Circulation, and Enterprise Reserve. The land designation of the proposed project site, which would encompass about 5 acres, is Academic and Administrative Low Density with an Enterprise Reserve overlay. Adjacent parcels are designated Academic and Administrative Low Density, and Support. The following briefly summarizes uses associated with the designations relevant to the proposed project.

Academic and Administrative – The majority of existing High Density Academic and Administrative facilities are located in the Central Campus. Uses include classrooms; research laboratories and research support areas; faculty, student and staff offices; and libraries. Low Density Academic and Administrative facilities are located in the Central Campus but also occur in the West and South Campuses. Uses are similar to those associated with High Density Academic and Administrative but they are typically one story in height and include teaching and research support uses such as greenhouses, field support, laboratories, office, agricultural-related space, animal science facilities and animal housing.

Enterprise Reserve – This land use designation signifies that campus development in these area primarily is financed in cooperation with public or private organizations external to the campus. These reserves are intended to provide the flexibility for academic and administrative units to respond in a timely manner to initiatives that further the academic mission of the campus. Uses may include affiliated research, faculty housing, commercial activity, office support, recreation opportunities, open space amenities, and cultural facilities.

Support – Support uses include the transport and processing of supplies, materials, water, wastewater, solid waste, electricity and communications, heating and cooling facilities, building maintenance, chemical handling, and vehicle storage. Also included are specialized existing facilities such as the University Airport and the Fire and Police Station. Support uses are developed in support service zones at varying distances from the Central Campus to allow flexibility for various functional demands.

1994 LRDP EIR Standards of Significance

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

- propose uses which would conflict with locally adopted City or County planning policies; or

- propose uses which would be incompatible with adjacent uses and which 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 use.

1994 LRDP EIR Significant Impacts and Mitigation Measures

No significant land use and planning impacts were identified in the 1994 LRDP EIR. Impacts related to agricultural land are now addressed in the section of this checklist titled Agricultural 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) Physically divide an established community?					X
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?					X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?					X
d) Conflict with any designated adjacent existing or future land uses on or off-campus?					X
e) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- The proposed project includes development in an Enterprise Reserve of the West Campus. The proposed project site consists of open land, an agricultural field, near other low density occupation buildings related to agricultural and research uses. The project is essentially a one-story facility on about 6.5-acres of the 44-acre West Campus Enterprise Reserve. Implementation of the proposed project would not disrupt or divide the physical arrangement of an established community.
- The applicable land use plan is the 1994 UC Davis LRDP. As mentioned above in Section IV, the proposed building site is designated as Low Density Academic and Administrative use with an

Enterprise Reserve overlay in the LRDP adopted by The Regents in 1994. The proposed facility is consistent in scale and function with the LRDP land use designations.

- c) The proposed project site consists of an agricultural field. The project site is not included in any conservation plan and therefore would not conflict with any applicable habitat conservation plan or natural communities' conservation plan land use designations.
- d) The proposed project would be constructed in an Academic and Administrative Low Density area of the West Campus. The project site is surrounded on the immediate north, south and west by vacant land with the same designation. Immediately to the east is the Campus Airport, on lands designated for Support land uses. The parcel immediately north of the project site is planned for the development of a Contained Research Facility that has been approved but not yet constructed. That facility would provide a contained space for research of plant pests, pathogens and associated microorganisms that pose a threat to regional agriculture. Other nearby developed uses include National Grapevine Importation and Clean Stock Facility and Foundation Plant Material Service to the north, Animal Sciences cattle barns, pens and a feed mill, and facilities of the Department of Entomology to the northeast. To the south of the project site (although not contiguous) is the Avian Sciences Research facility. As noted above, the University Airport is across the street to the east of the site.

The proposed project would involve the construction of a laboratory animal breeding facility including associated parking on about 6.5-acres. These uses would be consistent with adjacent Academic and Administrative Low Density land use designations and the developed and planned land uses nearby. Therefore, the proposed project would not be anticipated to conflict with adjacent land uses or future uses. No impact is anticipated.

- e) Standards of significance for land use that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for land use. Based on the discussion presented above, the proposed project does not exceed the standards of significance in the 1994 LRDP EIR and would not result in any new significant impacts related to land use that were not previously analyzed in the 1994 LRDP EIR or reduced to a less-than-significant level through the implementation of project-specific mitigation.

2. AGRICULTURAL RESOURCES

Cumulative impacts of campus growth through 2005-06 on agricultural resources are addressed in Section 4.1 of the 1994 LRDP EIR, Chapter 4.6 of the WWTP Replacement Project EIR, and in Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

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 DEIR).

1994 LRDP EIR Standards of Significance

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

- propose uses which 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

Significant impacts related to the loss of approximately 180 acres of Prime Farmland were identified in the 1994 LRDP EIR, and updated as part of the WWTP Replacement Project EIR and the 1997-98 Major Capital Improvement Projects SEIR. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts.

	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) 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?			X		
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?					X
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?			X		
d) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a) The proposed project would replace about [6.5](#) acres of agricultural fields with a research animal breeding facility. Under the LRDP, an impact is considered significant if the project would:

“propose uses which would convert or cause the conversion of Prime Farmland (as defined by the State Department of Conservation) to non-agricultural uses...”

The proposed project site would include about [6.5](#) acres, of which about 1.5 acres would be covered by the proposed building and most of the remainder by parking [and on-site stormwater detention basins](#). The proposed project site is an agricultural field that is designated as Prime

Farmland by the State of California Department of Conservation for Yolo and Solano Counties Important Farmland Map (see Figure 4.1-5 on page 4.1-30 of the LRDP DEIR). The proposed project would convert about ~~6.5~~ acres of designated Prime Farmland (pursuant to the State of California Department of Conservation) to non-agricultural uses. This area is designated for developed land use in the LRDP, and the impact on Prime Farmland is adequately addressed in the 1994 LRDP EIR. Measures included in the LRDP EIR and in the subsequent Major Capital Improvements EIR to reduce the significance of conversion of Prime Farmland include acquisition of Russell Ranch by the University most of which is Prime Farmland; dedication of at least 100 acres at Russell Ranch to farmland focused on soil conservation research; redesignation of 20 acres of land at Russell Ranch from Academic and Administrative Low Density to Research/Teaching Fields; and a program of habitat protection and enhancement to protect Swainson's Hawk and burrowing owls. In addition, the Center for the Arts EIR identified Prime Farmlands on the West Campus which currently are designated for Support uses but are no longer needed, since a proposed wastewater treatment plant was constructed elsewhere. However, the LRDP EIR concluded that despite the compensatory value of these activities, the loss of Prime Farmland can not be mitigated to a less-than-significant level unless developed Prime Farmlands are returned to their agricultural status and uses. Such measures are considered infeasible, and therefore this impact, which was adequately addressed by the LRDP EIR as amended, is considered significant and unavoidable even after mitigation.

- b) The proposed project would not conflict with either an existing zoning for agricultural use or a Williamson Act contract. The project site is designated as Academic and Administrative Low Density/Enterprise Reserve in the 1994 LRDP, and would be used as such. Mitigation for the use of these agricultural lands is included in the LRDP. The land is not under a Williamson Act contract. Therefore, there is no impact.
- c) ~~Although the proposed project would not require construction of a new gas pipeline which could be placed below grade along an agricultural dirt road, the project would not any other off-site improvements that could~~ result in the conversion of farmland to non-agricultural use nor does it include activities that could induce land use changes on adjacent farmland. Furthermore, the remaining 39 acres of land in the West Campus Enterprise Reserve are designated for non-agricultural uses and the impact from the conversion of that farmland is adequately analyzed in the 1994 LRDP EIR, and addressed by the Findings adopted with respect to the approval of the 1994 LRDP.
- d) Standards of significance for agricultural resources that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for agricultural resources. Based on the discussion presented above, the proposed project does not exceed the standards of significance in the 1994 LRDP EIR and would not result in any new significant impacts related to agricultural resources that were not previously analyzed in the 1994 LRDP EIR.

3. POPULATION AND HOUSING

Cumulative impacts of campus growth through 2005-06 on population and housing issues are addressed in Section 4.2 of the 1994 LRDP EIR.

Background

Campus population consists of students, faculty, and staff. Current and projected campus population is presented in Table 4 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 General Plan.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to population and housing to be 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 General Plan.

1994 LRDP EIR Significant Impacts and Mitigation Measures

No significant population or housing impacts were identified in the 1994 LRDP EIR, or subsequent documents.

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?			X		
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)?			X		
c) Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere?					X
d) Conflict with the population projections or housing policies set forth in the City of Davis General Plan?			X		
e) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a) The proposed Jackson Laboratory Facility at buildout would add approximately 131 ~~135~~ new employees to the West Campus. As discussed in Section IV, the current population estimate for campus faculty and staff including new employees to be added from other approved or proposed projects is 10,590 faculty and staff. The addition of 131 ~~135~~ employees associated with the

proposed project for a total of 10,721~~5~~ employees would not exceed the 1994 LRDP 2005-06 population projections for faculty and staff (12,630). No new students would be added to the UC Davis population by the project. Therefore, the proposed project would be consistent with 1994 LRDP population projections. The impact of population growth due to the proposed project is within the 1994 LRDP population projections.

- b) This project would involve construction of the proposed facilities in a similarly developed portion of the West Campus. Some extensions of existing infrastructure would be required to serve the proposed building. Although utility systems upgrades and extensions required as part of this project would be adequately sized to serve other planned development in the area as well, the development of this type of infrastructure was anticipated to meet the growth under the 1994 LRDP. As continuing similar development of the West Campus including the Enterprise Reserve was an anticipated event, the growth-inducing impacts of this development were adequately analyzed in the 1994 LRDP EIR and by the 1997-98 Major Capital Improvement Projects SEIR. As a result, no project-related growth-inducing impacts would occur beyond those previously identified in the 1994 LRDP EIR and the 1997-98 Major Capital Improvement Projects SEIR.
- c) The project site is not currently designated for housing nor does it include any existing housing facilities. Therefore, the proposed project would not impact or displace existing housing.
- d) The proposed project would add 131 ~~135~~ new employees to the campus, which would represent a contribution to the growth of the campus population. However, this increase in population is within and consistent with the population projections in the 1994 LRDP (see discussion under Section IV, Consistency with 1994 LRDP and LRDP EIR, 1994 LRDP Population Projections).

Furthermore, according to the 1994 LRDP EIR, buildout of the LRDP could add approximately 8,000 residents, including students, faculty and staff, and their dependents to the City of Davis by 2005-06. Buildout in the City of Davis planning area under the City of Davis General Plan is projected to reach 75,000 by 2010. As described on page 4.2-19 of the 1994 LRDP DEIR:

Growth projections for the City of Davis are based upon a buildout of land uses designated in 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.

Since growth accommodated by 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.

- e) Standards of significance for population and housing impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for population and housing. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR and would not result in any new impacts related to population and housing that were not previously analyzed in the 1994 LRDP EIR.

4. TRANSPORTATION/CIRCULATION

Cumulative impacts of campus growth through 2005-06 on transportation and circulation are addressed in Section 4.3 of the 1994 LRDP EIR; Section 4.9 of the 1997 WWTP Replacement Project EIR; Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR; Item 6 of the Center for the Arts Tiered Initial Study and Mitigated Negative Declaration; Item 7 of the USDA WHNRC Tiered Initial Study and Negative Declaration; Section 3 of the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered FEIR, and Section 3 of the Genome and Biomedical Sciences Facility Focused Tiered EIR.

Background

Regional roadway access to the campus and the City of Davis is provided primarily by Interstate 80 (I-80) and State Highway 113. Access to the campus from the City of Davis is 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 that 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. Access to and from the Central Campus and the West Campus is provided primarily by Hutchison Drive and Russell Boulevard. Access to and from the Central Campus and the South Campus is provided primarily by Old Davis Road. Access to and from Russell Ranch is provided by Russell Boulevard. Parking, bicycle paths and transit service are provided throughout the campus. Parking and bicycle paths are concentrated on the core of the Central Campus.

Regional access to the project site would be via Interstate 80, Highway 113, Hutchison Drive and Hopkins Road. Hutchison Drive would be expected to be the primary route between the Central Campus and the proposed project, while Hopkins Road would provide local access to the project site. The project is located along Hopkins Road, a two-lane, north-south road central to the West Campus. Hutchison Road, to the north of the project site, is the main east-west road on the West Campus. It is generally a 2-lane road, widening to four lanes in the vicinity of Highway 113. The LRDP includes a proposed bike path along Hutchison Road which has not yet been constructed.

1994 LRDP EIR Standards of Significance

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

- result in 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 State Highway 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;
- 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.

1994 LRDP EIR Significant Impacts and Mitigation Measures

Significant impacts identified in the 1994 LRDP EIR, as amended by the 1997-98 Major Capital Improvement Projects SEIR (1994 LRDP EIR Impact 4.3-1 revised on pages 8-22 and 8-23) that are relevant to the proposed project are presented in the following table. The level of significance before and after application of mitigation measures identified in these documents is also presented in this table. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents. Due to refined assumptions regarding the distribution of future development on campus, the reanalysis of the cumulative impacts on vehicle circulation in the vicinity of campus was carried out by DKS Associates in May 2000. The results of that study are taken into account in the following analysis. The LRDP EIR Impact 4.3-1 notes that increases in traffic volumes in relation to the capacity of the future transportation network would result in level of service standard violations. Although mitigation measures are available to reduce 1994 LRDP Impact 4.3-1 to a less-than-significant level, 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.

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
4.3-5	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

SU = significant and unavoidable; S = significant; LS = less-than-significant

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

- **LRDP EIR Mitigation Measure 4.3-1(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 4.3-5** - *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:*
 - (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.

	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, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				X	

	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) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X	
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?					X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?					X
e) Result in inadequate emergency access?					X
f) Result in inadequate parking capacity?					X
g) Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?					X
h) Increased pedestrian and bicycle traffic in areas that may not have adequate facilities for these modes of travel?					X
i) Increased conflict between bicyclists, pedestrians, and transit vehicles, causing increased congestion and safety problems?					X
j) Increased demand for transit services?			X		
k) Exceed an applicable LRDP or Program EIR Standard of Significance?			X		

Discussion

- a, b) The proposed project would result in the construction of a new facility that would have a staff of 131+35. For purposes of this analysis, it is assumed that all 131 +35-facility occupants would be new to campus. Based on these numbers, the proposed project is estimated to generate approximately 525 new daily motorized vehicle trips to and from the West Campus by commuting employees and service and delivery trucks including those that would haul mice to laboratories on and off campus. Because the facility operations would start early, the early morning shift would arrive at the facility before the a.m. peak hours and would not contribute to a.m. peak traffic. The majority of the employees would commute during a.m. peak hours, generating about 65 to 70 p.m. peak hour trips. Similarly, the early shift would leave the facility prior to p.m. peak hours, but the remaining staff would commute early during the p.m. peak, generating as many as 65 to 70 p.m. peak hour trips. The remainder of the trips would be associated with the deliveries and distribution of mice, and would occur during normal business hours.

The 1994 LRDP included population growth projections, physical development patterns, and land use designations for the UC Davis campus through 2005-06. Development of facilities in the Enterprise Reserve area, including high and low density research buildings, was anticipated in the 1994 LRDP. As projects of the type and scope proposed were anticipated as part of the 1994 LRDP and the assignable square feet (asf) of development, and the population associated with the project do not exceed the numbers included in the 1994 LRDP as amended, the impacts of the proposed project due to cumulative campus population growth were included in the Traffic, Circulation, and Parking analysis included in the 1994 LRDP EIR (Impact 4.3-1 on page 4.3-29) as amended by Impact 8-13 of the 1997-98 Major Improvement Projects SEIR and by the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR. The 1994 LRDP traffic analysis has been subsequently updated to reflect changed assumptions regarding road improvements and the location and distribution of development on campus (1997-98 Major Capital Improvement Projects SEIR, USDA WHNRC Tiered Initial Study and Negative Declaration, Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR, and the Genome and Biomedical Sciences Facility Focused Tiered EIR). It is not anticipated that employee growth on the West Campus will exceed earlier assumptions. Overall campus-wide cumulative population growth will remain consistent with the 1994 LRDP projections.

The principal result of the proposed project would be a slight increase in traffic at intersections of the eastbound and westbound ramps of Highway 113 and the intersection of Hutchison Drive and Hopkins Road. Deliveries on and off campus would be expected to occur during business hours but at off peak hours, and would not contribute significantly to campus or off-campus traffic. Based on a cumulative traffic analysis for the entire campus for the year 2005-06 (buildout of the current LRDP), which takes into account the projected growth on the West Campus, the intersection of Hutchison Drive and Hopkins Road would operate at LOS A during both a.m. and p.m. peak hours. The intersections of Highway 113 with Hutchison Drive would also operate at LOS D or better. The trips associated with the proposed project are a subset of the projected trips used in the cumulative analysis. Traffic impacts of the proposed project are therefore expected to be less than significant.

- c) The proposed facilities do not include uses that would result in changes to air traffic patterns. Therefore no impact would occur.
- d) The proposed facilities would be conceptually designed in accordance with recognized guidelines and standards, such as those promulgated by the campus, the federal government, and the State of California. The proposed project would not introduce any new safety hazards related to

incompatible uses such as farm equipment. Overall, the proposed project would not result in any design features or incompatible uses that would result in transportation safety hazards and no impact would occur.

- e) The location and design of the proposed JAX West would allow adequate emergency and general access by all modes. The building would not eliminate or impede access to any existing uses. Vehicular, automobile, bicycle, and pedestrian connections are available from the project site to adjacent uses and the overall campus transportation system. Staff entrances would be located on two sides of the building. No public access would be anticipated. Fire and other emergency access would be considered in the design of the new facility. Therefore, no impact would occur related to emergency access.
- f) The West Campus currently is served by small, building-specific parking areas adjacent to each building. These lots and on-street parking provide an adequate supply of parking spaces for current users on the West Campus. Since the proposed project would include adequate parking for its own anticipated staff and users, it would create no new parking demand on existing facilities. Therefore, the proposed project would have no impact on parking availability on the West Campus.
- g) The campus and the 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 Transportation Systems Management (TSM) effort to maintain and improve the existing non-automotive mode share. Among the strategies being used 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, park and ride, and rideshare programs and incentives, operation of shuttle bus systems, encouragement of telecommuting and institution of public awareness programs (UC Davis 1994b). The proposed project would not conflict with any of these strategies or other applicable policies, plans, or programs supporting alternative transportation.
- h) Little bicycle traffic is expected to be generated by the project because it is in a remote location and bicycle lanes are not available on the access routes. The 1994 LRDP includes future additional bicycle and pedestrian facilities that are not precluded by the project. Therefore, the project's impact to existing and proposed bicycle and pedestrian facilities is considered less than significant.
- i) The proposed project is located in a portion of the campus where pedestrian and bicycle traffic is very limited. There is no transit service to this area. Although the project would add vehicular trips to the roadways near the site, there is little potential for conflict with pedestrians and bicyclists.
- j) As noted above, there is no transit service to this area. The proposed project would result in approximately ~~131~~ 135 additional employees. While the increased demand for transit services due to this ~~131~~ 135-person increase would be considered a less-than-significant impact on its own, the 1994 LRDP EIR identified that growth under the 1994 LRDP in conjunction with campus Transportation Demand Management (TDM) efforts would result in a significant increase in demand for transit services. The proposed project would contribute to, but not exceed, this impact identified in the 1994 LRDP EIR. 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. Implementation of 1994 LRDP EIR Mitigation Measure 4.3-5, which would be required as part of the proposed project, would reduce this impact to a less-than-significant level and no additional mitigation is required.

- k) Standards of significance for traffic, circulation and parking impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for transportation and circulation. Based on the discussion presented above, the proposed project will not exceed 1994 LRDP EIR standards of significance regarding level of service on roads on the West Campus, or other transportation-related standards of significance in the 1994 LRDP EIR.

5. NOISE

Cumulative impacts of campus growth through 2005-2006 associated with noise were addressed in Section 4.4 of the 1994 LRDP EIR; in Section 4.8 of the WWTP Replacement Project EIR; and in Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

Background

The primary source of noise on and off campus is vehicle noise from roads and highways, and freight and Amtrak trains using the Union Pacific (former Southern Pacific) railroad line. The major roadway sources include Interstate 80 and State Highway 113, and traffic on local and regional roads. Aviation traffic also adds to the ambient noise levels, originating in the local area from the Campus Airport and Yolo County Airport.

Modeled noise levels along local and regional roadways for the 1994 LRDP EIR show existing average day-night sound levels (L_{dn}) ranging from as low as 56 dBA along County Road 32 at Russell Ranch to 76 dBA at 100 feet from the centerline of Highway 80 between Highway 113 and Russell Boulevard. Measurements of average sound levels (L_{eq}), taken from acoustical studies performed between 1987 and 1993 at and near the campus range from 43 dBA to 66 dBA. The higher noise levels measured were generally near busy roadways or sports fields (while in use). Measurements performed for the 1994 LRDP were consistent with this range, with the exception of a few measurements at relatively quiet locations (all away from roadways) that were below 40 dBA L_{eq} . Day time noise levels were measured along Hopkins Road near the project site in 1994. Noise levels ranged from 58 to 61 dBA. The predominant noise source was noted to be equipment at the feed mill (UC Davis 1996). Due to the low volume of traffic on Hopkins Road, traffic noise from this roadway near the West Campus Enterprise Reserve was modeled to be about 48 dBA L_{dn} at 100 feet from centerline in 1998 (UC Davis 1998).

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 counties and cities for the preparation of Noise Elements. In the absence of other numerical guidance for determining significance, the State of California published general plan guidelines are used as the standards of significance for project 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 a project's 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 to be 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

- 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 the noise is temporary and such activities can continue with only minimal disturbance.

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 level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is also presented in the table. Noise impacts were reviewed in the WWTP Replacement Project EIR and in the 1997-98 Major Capital Improvement Projects SEIR; no new impacts for the 1994 LRDP were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted 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) because it fell within other jurisdictions to enforce and monitor.

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

SU = significant and unavoidable; 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 4.4-1** - *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.*

- **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} .*

and

- **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.*

or

- **LRDP EIR Mitigation Measure 4.4-3(c)** - *If individual projects would be exposed to noise levels in excess of 70 L_{dn} , the Campus shall implement one or more of the following noise reduction measures:*

- (i) install setbacks, sound walls, berms and/or use noise-attenuating site design to reduce exterior noise levels to less than 60 L_{dn} for residential and/or adjacent residential land uses on Campus;
 - (ii) install setbacks, sound walls, berms, and/or noise-attenuating site design to reduce exterior noise levels to less than 70 L_{dn} for academic and administrative land uses and adjacent academic and administrative land uses on Campus; and/or
 - (iii) employ adequate construction noise attenuation materials or site design for residential areas on Campus so that the interior noise level is 45 L_{dn} or less.
- **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) through (c).*
 - **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.

	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?				X	

	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:					
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?					X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X	
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?					X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?					X
g) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

a, c, d) The 1994 LRDP EIR includes ambient noise levels for the West Campus, at 58 to 61 A-weighted decibels (dBA) at a feed mill location very close to the project site on Hopkins Road. No sensitive receptors (e.g., residences, schools, or hospitals) are located within about 2,000 feet of the project site, which is the distance at which construction noise typically attenuates to background levels (UC Davis 1996). Generally low-density academic and administrative uses are considered noise sensitive. However, the uses in the vicinity of the project site are such that they would not be affected by high noise levels. The adjacent airport and other nearby agricultural research buildings are not sensitive receptors. Potential noise impacts from project construction and operation are discussed below.

Construction

As described on page 4.4-20 of the 1994 LRDP DEIR:

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 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 activity associated with the proposed project would result in temporary short-term increases in existing noise levels. However, there are no sensitive receptors nearby that could be adversely affected. The impact would be less than significant.

Operation

The proposed project involves the operation of a rodent breeding laboratory building. As described on page 4.4-25 of the 1994 LRDP DEIR:

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.

As stated in Impact 4.4-2 on page 4.4-25 of the 1994 LRDP DEIR, any increases in operational noise levels attributable to 1994 LRDP development were not anticipated to exceed significance levels established in the 1994 LRDP EIR and were considered less than significant. The proposed project includes roof-mounted air conditioning equipment, a chiller, a boiler for heating and steam, and an emergency generator. Operation of these pieces of equipment, which would be acoustically shielded, would not result in significant noise impacts. Therefore operational noise impacts are less than significant and no mitigation is required.

The proposed project's contribution to traffic on Hutchison Drive and Hopkins Road is anticipated to be small. Therefore, it is not anticipated that the increase in vehicle traffic associated with the operation of the new facility would result in noise levels that would exceed current ambient conditions. Impact 4.4-3 of the 1994 LRDP EIR determined that structure-occupants could be exposed to significant noise levels from traffic and other sources. This was considered to be a significant impact and 1994 LRDP Mitigation Measures 4.4-3(a) and (b) were recommended to reduce this impact to a less-than-significant level. The impact associated with the proposed project would be less than significant even without this mitigation, because the project-related traffic is too low to result in a noise impact on existing land uses.

Because of the site's proximity to the University Airport, the proposed project could expose the new laboratory employees to high levels of noise from the airport. The 1994 LRDP EIR indicates that under projected 2000 conditions, the project site would be exposed to less than 60 dBA from roadway and rail noise, and between 60-65 dBA from University Airport operations. Although these levels are not high and therefore the impact is less than significant, this impact would be further reduced through the implementation of 1994 LRDP EIR Mitigation Measure 4.4-3(a), (b), or (c) if necessary. In compliance with 1994 LRDP EIR Mitigation Measure 4.4-3(b), the proposed project would include the installation of noise attenuation features, which would further reduce interior noise levels. Conventional building construction with closed windows and fresh air supply / air conditioning would achieve the necessary noise attenuation. Potentially significant noise levels would therefore be mitigated to a less-than-significant level through incorporation of mitigation measures adopted as a part of the 1994 LRDP EIR and no further mitigation is required.

The 1994 LRDP EIR concluded that growth under the 1994 LRDP would result in increased traffic and other noise sources which could expose people to significant noise levels. This cumulative impact was considered significant and unavoidable. The proposed project would contribute to, but not exceed increased cumulative 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 1997-98 Major Capital Improvement Projects SEIR.

- b) Construction of the proposed facilities would not include pile driving or other construction activities that could result in ground borne vibration or noise. Therefore, no impact would occur.
- e, f) The project site is not located in the vicinity of a private air strip. The proposed project site is located on the West Campus adjacent to the University Airport. The project site is within the 60 and 65 CNEL noise contour lines for the University Airport (see Figure 4.4-7 of the 1994 LRDP EIR). The 1994 LRDP DEIR (page 4.4-29) concluded that development associated with the 1994 LRDP would not be impacted by aircraft from Yolo County Airport or the University Airport. Therefore, no impact would occur.
- g) Standards of significance for noise impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for noise. Based on the discussion presented above, the proposed project does not exceed the standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to noise that were not previously analyzed in the 1994 LRDP EIR.

6. AIR QUALITY

Cumulative impacts of campus growth through 2005-06 on air quality are addressed in Section 4.5 of the 1994 LRDP EIR; in Section 4.2 of the WWTP Replacement Project EIR; and in Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

Background

The campus is located within the Yolo-Solano Air Quality Management District (YSAQMD), which is located in the boundaries of the Sacramento Valley Air Basin. The YSAQMD is in nonattainment for ozone(O₃). Air quality within the YSAQMD also violates state and federal standards for particulate matter (PM₁₀), and is classified as nonattainment. 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.

Title V of the federal Clean Air Act (CAA) as amended in 1990 provides for the establishment of operating permits for major sources that emit regulated air pollutants. A major source is a stationary source that has the potential to emit a regulated pollutant in quantities equal to or exceeding established thresholds. UC Davis is a major source subject to the requirements of Title V due to emissions of nitrogen oxides (NO_x), sulfur oxides (SO_x), and volatile organic compounds (VOCs) in excess of EPA thresholds. Major sources must submit a Title V permit application including a list of all equipment that emits regulated air pollutants, quantification of the potential to emit for the facility and each emissions unit, a list of applicable federal regulations, and a certificate of compliance with all applicable regulations.

There are many typical community sources of toxic air contaminants (TAC) in the Davis area, including dry cleaners, automobiles, and industry. It is likely that automobiles are the major source of toxic air emissions and related health risk in Davis. Frequent crop burning in the Davis area is also a substantial source of toxic air contaminants. Other sources of toxic air contaminant emissions in the Davis area are UC Davis laboratories and the campus wastewater treatment plant. In 1994, the campus prepared a health risk assessment considering TAC emissions related to the 1994 LRDP. This assessment was subsequently updated in 1996, 1998, and 1999. All assessments concluded that development of specific projects under the 1994 LRDP would not result in any carcinogenic TAC emissions that would pose a potential human health hazard and would not cause significant adverse acute or chronic non-carcinogenic TAC health effects. Results of the 1999 health risk assessment update are presented in Table 5 below (UC Davis 1999b).

Table 5

Summary of Cumulative Health Risks for the 1994 LRDP (as Updated)

Description	1994 LRDP as Updated in 1999¹	1994 LRDP Standards of Significance
Acute Hazard Index	9.29 x 10 ⁻³	≥1.0
Chronic Hazard Index	3.37 x 10 ⁻³	≥1.0
Cancer Risks	0.4755 per 10 ⁶	≥10 per 10 ⁶

¹Cumulative risk values including anticipated development in the Health Sciences District.

The major odor emission source on the West Campus is animal waste associated with confined animal facilities. Other sources 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 to be 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 Reactive Organic Compounds (ROC), NO_x, SO_x, and PM₁₀.

Since there are no ambient concentration standards for toxic air contaminants, evaluation of impacts is based upon health risk analysis. For carcinogenic toxic air contaminants emissions, a cancer risk exceeding 10 in one million was considered significant. To evaluate non-carcinogenic (chronic and acute) health risks, change in ground-level concentration of pollutants emitted from the campus that exceed relevant non-cancer effect criteria was considered significant. For the purposes of the 1994 LRDP EIR, the non-cancer effect criterion was a hazard index greater than 1.0.

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 level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is 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 project in question. Air quality impacts from the development proposed under the 1994 LRDP were reviewed in the WWTP Replacement Project EIR and in the 1997-98 Major Capital Improvement Projects SEIR; no new impacts were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that cumulative regional Impacts 4.5-6 and 4.5-8 included mitigation measures to reduce the impacts to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the University of California could not guarantee implementation of the mitigation measures that fell within other jurisdictions to enforce and monitor.

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,	SU	SU

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
would increase criteria pollutant emissions.		
4.5-8 Development allowed under the 1994 LRDP, in conjunction with cumulative development in the Davis area, may generate unacceptable cumulative toxic air contaminant health risks. Inadequate methods exist to assess the magnitude of this impact, and it is therefore considered too speculative to determine the precise level of significance.	SU	SU

SU = significant and unavoidable; 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 4.5-1** – *The Campus shall include in all construction contracts the following measures to reduce fugitive dust impacts.*
 - (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.*
- (Please see Item 3, Transportation/Circulation, for a description of 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.

	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?					X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?					
During Construction:			X		
During Operation:			X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?			X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X		
e) Create objectionable odors affecting a substantial number of people?				X	
f) Exceed an applicable LRDP or Program EIR Standard of Significance?			X		

Discussion

- a) As required by the California Clean Air Act, the Yolo Solano Air Quality Management District (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). Currently, AQAPs are not required to address PM₁₀, for which the YSAQMD is also in non-attainment for state standards (see pages 4.2-14 through 4.2-15 of the WWTP Replacement Project DEIR) (UC Davis 1999c).

As discussed on page 4.5-7 of the 1994 LRDP DEIR with updated information on page 5.7-3 of the 1997-98 Major Capital Improvement Projects DSEIR, a Sacramento Area Regional Ozone Attainment Plan was submitted to the Environmental Protection Agency (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 (UC Davis 1999c). While the plan is designed to bring the Sacramento area into attainment with the ozone standard by 2005, it does not contain additional measures that would apply to the proposed project. The proposed project would not conflict with or obstruct implementation of the AQAP, and no impact would occur. Please see discussion below under Items b, c for an evaluation of criteria and toxic air pollutants.

b, c) **Construction**

Construction of the proposed project would involve earth-moving activities. As described on page 4.5-18 of the 1994 LRDP DEIR:

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.

Fugitive dust generated by project-related construction and demolition activities, including trenching for utilities distribution expansion, may cause violations of the state and federal 24-hour PM₁₀ standard at times and would contribute to significant PM₁₀ emissions previously identified in the 1994 LRDP EIR. 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. The implementation of 1994 LRDP EIR Mitigation Measure 4.5-1(a)-(d), which would be required as part of this project, would reduce project-specific short-term fugitive dust impacts to a less-than-significant level.

The 1994 LRDP EIR determined that construction activities would also result in short-term emissions of ozone (O₃) precursors. These precursors specifically include ROCs from paint, and ROC and nitrogen oxides (NO_x) in exhaust emissions from powered construction equipment and motor vehicles. 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 NO_x would be negligible. This impact is further discussed on page 4.5-19 of the 1994 LRDP DEIR:

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

Criteria Pollutants

The proposed project facilities would result in operational increases in criteria air pollutants. Increased vehicular traffic to and from the proposed facility would generate increased levels of carbon monoxide (CO), O₃ precursors (ROC and NO_x), visibility reducing particles and PM₁₀ emissions. The proposed project facilities would result in operational increases in criteria air pollutants. Increased vehicular traffic to and from the proposed facility would generate increased levels of carbon monoxide (CO), O₃ precursors (ROC and NO_x), visibility reducing particles and PM₁₀ emissions. As discussed in Item 4, Transportation and Circulation, the proposed project is estimated to generate 525 new daily motorized vehicle trips to the campus due to the anticipated increase in the number of employees as a result of this project. Vehicle exhaust and entrainment of road dust generated by the addition of these vehicle trips would generate O₃ precursors (ROC and NO_x) and PM₁₀. Vehicle exhaust would also generate CO. For the evaluation of additional traffic emissions, vehicle emission factors published by the YSAQMD for use in screening-level air quality assessments (YSAQMD 1996) were used. Table 6 presents the resulting estimated emissions of ROC, NO_x and PM₁₀ using a weighted vehicle mix for the year 2005 and an assumption of 10 miles per vehicle trip. Peak hour emissions assumed the higher of the additional anticipated AM and PM peak traffic: 70 additional trips per hour. Daily emissions assumed 525 additional trips per day. Table 6 shows daily emissions of ROC, NO_x and PM₁₀ associated with the proposed project to be small compared to YSAQMD significance thresholds. Vehicle emission factors for CO are not provided in the YSAQMD guidance (YSAQMD 1996) because CO is an attainment pollutant in the YSAQMD, and thus not required to be evaluated. In the case of the proposed project, the additional traffic volume would be small, representing an approximately 2 percent increase in vehicle trips on a daily basis, and would not be sufficient to create a significant CO impact.

Table 6
Estimated Air Emissions From Increased Vehicle Trips

Period	Trips	Emissions			
		Unit	ROC	NO _x	PM ₁₀
Peak Hour	70	Pounds/ hour (lb/hr):	1.7	1.3	0.2
Daily	525	Pounds/day (lb/day):	13.1	9.9	1.2

Notes:

Emission factors from YSAQMD Air Quality Handbook (1996).

Assumptions:

1. Emissions based on CARB's EMFAC7F (1.1).
2. Emissions are for a weighted fleet mix for the year 2005.
3. Average Trip Length: 10 miles, Speed: 30 MPH, Temperature: 75 F.
4. Emission factors are average of winter time and summer time rates.
5. 60% cold start, 40% hot start.

New combustion equipment would include one 1.6 Mw fuel-oil-fired emergency generator and one gas-fired boiler for heating and steam. Potential emissions from this equipment were calculated from EPA emission factors (EPA 1995). Under normal operations, the emergency generator was

assumed to operate a maximum of 50 hours per year (0.14 hours per day) when being tested. The resulting emissions from these non-emergency operations of the back-up generator and the routine emissions from the boiler (which would operate continuously) are shown in Table 7. When added to the vehicle emissions estimates in Table 6, the total increased air pollutant emissions associated with the proposed project would be well below the YSAQMD significance thresholds and the project-level impact would therefore be less than significant.

Table 7
Estimated Air Emissions from Stationary Combustion Sources

Equipment	Capacity		Hrs/Day	Emissions (lb/day)				
				ROC	NO _x	PM ₁₀	CO	SO ₂
Boiler	3.55	MMBtu/hr	24	0.46	4.18	0.63	7.02	0.05
Emergency Generator	1600	kW	0.14	0.76	9.28	0.66	2.00	0.62

- Notes:
1. Heat content of natural gas assumed to be 1020 Btu per standard cubic foot.
 2. Sulfur content of natural gas assumed to be 2,000 grains per million standard cubic foot.
 3. NO_x emissions estimates assume low-NO_x burner technology.

The 1994 LRDP EIR identified increases in these pollutants as a result of development under the 1994 LRDP as a significant and unavoidable impact because established significance thresholds would be exceeded (Impact 4.5-3). The project would contribute to but would not exceed this impact. Implementation of 1994 LRDP Mitigation Measures 4.5-3(a) and (b) would reduce the magnitude of impacts to regional air quality. Mitigation Measure 4.5-3(a) involves increasing the use of non-vehicular modes of transit and public transportation to, from, and within the campus. However, the LRDP EIR concluded that even with the application of mitigation measures, this cumulative impact would remain significant and unavoidable.

Furthermore, 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). This is due to the fact that the actions of other jurisdictions are not within the control of the campus. Although 1994 LRDP Mitigation Measures 4.5-6(a)-(b) would be implemented as part of the proposed project, this impact would remain significant and unavoidable. 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 1997-98 Major Capital Improvement Projects SEIR.

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 (Impact 4.5-7). This impact was considered to be less than significant and no mitigation was required. The proposed project would contribute to, but not exceed, increased CO emissions identified under the 1994 LRDP because it is consistent with approved development. This impact would therefore remain less than significant.

The proposed project includes a boiler and an emergency generator. As noted earlier, UC Davis is a major source of air pollutants subject to the requirements of Title V. Because JAX West would be owned and operated by TJL, the YSAQMD has indicated that this laboratory would not be

considered a part of the UC Davis for purposes of Title V (Oatman 2000). The facility would be evaluated on its own, and would therefore fall below the Title V emission thresholds.

Toxic Air Contaminants

The proposed project would also generate some toxic air contaminants (TAC) due to the laboratories included in the operation of the proposed facility and from automobile emissions. It should be noted that the hazardous chemicals that would be used in the laboratories are common lab chemicals and do not include any biological agents (viruses, etc.). The biosafety cabinets that would be used in the IVF laboratory are to protect the animals undergoing surgical procedures from external contamination. The 1994 LRDP EIR determined the impact of exposure of campus occupants and Davis area residents to TACs emitted from uses on campus to be less than significant. In addition, UC Davis has conducted several health risk assessments to identify potential health risks associated with TACs due to planned development on campus. As shown in Table 5, the cancer risk associated with the development allowed under the 1994 LRDP including the proposed project, would be 0.4755 in one million, which is below the campus standard of significance of 10 in one million, and the acute and chronic non-carcinogenic health risk hazard exposure indices would be 0.00929 and 0.00337, respectively, both below the campus standard of 1.0.

However, the 1994 LRDP EIR did conclude that TAC health risks due to cumulative development under the 1994 LRDP in conjunction with development in the Davis area would be significant and unavoidable due to the absence of adequate methods to assess the magnitude of this impact. The proposed project would contribute to, but not exceed, this impact. This circumstance 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 1997-98 Major Capital Improvement Projects SEIR.

The proposed project would not result in any operational air quality impacts beyond those evaluated and mitigated by the 1994 LRDP EIR.

- d) Receptors in the vicinity of the proposed project site include academic and administrative facilities adjacent to the project site such as the Grapevine Importation and Clean Stock Facility. Although construction-related air quality impacts have the potential to be significant, the implementation of 1994 LRDP EIR Mitigation Measure 4.5-1 would be required as part of the proposed project. As a result, although nearby receptors would be exposed to short-term elevated levels of PM₁₀ during construction, implementation of mitigation measures would reduce this impact to a less-than-significant level. No operational air quality impacts are anticipated from the proposed project.
- e) There are currently a number of odor emission sources on the West Campus, including confined animal facilities and other animal-related service facilities (see page 4.15-14 of the 1994 LRDP DEIR). JAX West would have the potential to generate odors related to animal wastes; however, the new facility would be an indoor high barrier rodent facility with highly controlled air circulation. There is a potential for odors from the disposal of animal wastes. These would be controlled through the use of autoclave sterilization, disinfection, and appropriate waste disposal, which are included in the project's operational protocols. As the breeding facility would be maintained as a sanitary facility according to standard operating procedures, it would not be expected to generate objectionable odors that would affect nearby buildings. This impact is considered to be less than significant and no mitigation is required.

- f) Standards of significance for air quality impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for air quality. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-related or cumulative impacts.

7. HAZARDS AND HAZARDOUS MATERIALS

Cumulative impacts of campus growth through 2005-06 on hazardous materials are addressed in Sections 4.6 of the 1994 LRDP EIR and in Section 4.3 of the WWTP Replacement Project EIR.

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, and biohazardous substances that are used in activities such as laboratory research; building and grounds maintenance; vehicle maintenance; agriculture applications; fine arts; and clinical veterinary medicine. Hazardous materials use on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes. Because campus hazardous materials use is primarily associated with teaching and research laboratory activities, the 1994 LRDP EIR assumed that hazardous materials-related activities would increase in proportion to projected increases in instruction and research space, an increase of about 41 percent. In addition, the campus uses animals for both teaching and research in veterinary medicine, agriculture, biological sciences, and other campus schools, colleges, and divisions. In 1992, approximately 500 campus faculty made some use of vertebrate animals in their research and teaching.

Since adoption of the 1994 LRDP EIR, the campus has implemented several mitigation measures identified to mitigate the use and generation of hazardous chemicals associated with campus growth. In conformance with 1994 LRDP EIR Mitigation Measures 4.6-1(iii), 4.6-2(d), and 4.6-6(c), the Waste Minimization Coordinator was established in 1994 and a hazardous waste minimization plan has been prepared. The campus also conducts biennial audits by a third party to document the compliance status of campus departments and units in conformance with 1994 LRDP EIR Mitigation Measures 4.6-1(b) and (c).

In order to minimize risks of increased radioactive materials use and generation of radioactive waste, the campus has developed a formal Radiation Waste Minimization Plan as required by 1994 LRDP EIR Mitigation Measure 4.6-6(d). Laboratory staff is given waste minimization training if their work involves the handling of radioactive materials and the training is updated annually. Radiation workers are tracked to assure compliance with the requirement for receiving training.

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. In conformance with 1994 LRDP EIR Mitigation Measures 4.6-2(c), 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 will open this year.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact related to hazardous materials and/or public safety to be 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
- involve violating 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 level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is also presented in the table. Impacts related to hazardous materials were reviewed in the WWTP Replacement Project EIR and no new impacts were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that cumulative Impacts 4.6-3, 4.6-4, 4.6-7, 4.6-8, 4.6-12, 4.6-17, and 4.6-23 included mitigation measures to reduce the impacts to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the University of California could not guarantee implementation of the mitigation measures that fell within other jurisdictions to enforce and monitor.

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
4.6-5	Implementation of the 1994 LRDP could lead to an increase in radioactive material use at UC Davis, which could expose campus occupants to potential health or safety risks.	PS	LS
4.6-6	Implementation of the 1994 LRDP would lead to an increase in the generation of radioactive waste at UC	PS	LS

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
	Davis that could expose campus occupants to potential health or safety risks.		
4.6-7	Increased use of radioactive materials related to cumulative development in the region would increase the number of people exposed to health hazards associated with the use of radioisotopes.	SU	SU
4.6-8	Implementation of the 1994 LRDP, in conjunction with other development in the region that generates radioactive waste, would place an additional load on radioactive waste management facilities.	SU	SU
4.6-9	Implementation of the 1994 LRDP could lead to an increase in biohazardous materials use at UC Davis that could expose campus occupants to potential health or safety risks.	PS	LS
4.6-10	The LRDP would increase the use of laboratory animals at UC Davis, thereby increasing the risk of animal bites, escapes, and disease transmission.	PS	LS
4.6-12	Increased use of biohazardous materials and research animals related to cumulative development in the region would increase the number of people exposed to health hazards associated with such use.	SU	SU
4.6-16	Construction activities under the 1994 LRDP could expose campus occupants and construction workers to contaminated soil or groundwater.	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

SU = significant and unavoidable; S = significant; PS = potentially 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:

- 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 following:*

- (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 developing these plans, and (2) to assure that these plans are adequately implemented and maintained, including training and emergency planning.
- **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.*
 - **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(b)** – *The Campus shall complete and occupy the proposed Environmental Services Facility and close the current environmental services facility.*
 - **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.*
 - **LRDP EIR Mitigation Measure 4.6-4(b)** – *Implement Mitigation Measures 4.6-2(a) through (c).*
 - **LRDP EIR Mitigation Measure 4.6-5(a)** – *The Campus shall strengthen its health physics program commensurately with changes in the hazards associated with Campus radioactive materials use.*
 - **LRDP EIR Mitigation Measure 4.6-5(b)** – *Implement Mitigation Measures 4.6-1(a) through (c).*
 - **LRDP EIR Mitigation Measure 4.6-6(a)** – *The Campus shall complete and occupy the proposed Environmental Services Facility and close the current environmental services facility.*

- **LRDP EIR Mitigation Measure 4.6-6(c) – 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 4.6-6(d) – The Campus shall prepare and implement a campus-wide radioactive waste minimization plan that shall specify feasible programs to reduce generation of low-level radioactive wastes and mixed wastes. To ensure the plan shall be implemented, the Campus shall provide the resources required by the plan.**
- **LRDP EIR Mitigation Measure 4.6-7 – Prior to occupying the first project approved following adoption of the 1994 LRDP that involves the use of radioactive materials implement Mitigation Measures 4.6-1(a) through (c) and 4.6-5(a).**
- **LRDP EIR Mitigation Measure 4.6-8 – Implement Mitigation Measures 4.6-1(a) and 4.6-6(a) through (d).**
- **LRDP EIR Mitigation Measure 4.6-9 – Implement Mitigation Measures 4.6-1(a) through (c). Injury and Illness Prevention plans identified in elements of Mitigation Measure 4.6-1(a)(ii) would specifically focus on: minimizing skin penetration incidents and other exposure to biohazardous materials; proper disposal of biohazardous materials in the lab including proper use of sharps containers; and proper operation of autoclaves. Waste minimization plans identified in Mitigation Measure 4.6-1(a)(iii) would include elements to minimize generation of biohazardous (medical) waste. Self-audits and biennial independent audits identified in Mitigation Measures 4.6-1(b) and (c) will include audits of the use and handling of biohazardous materials.**
- **LRDP EIR Mitigation Measure 4.6-10 – Implement Mitigation Measures 4.6-1(a) through (c) Elements of these Injury and Illness Prevention Plans identified Mitigation Measure 4.6-1(a)(ii) specifically focus on minimizing the risk of animal bites and disease transmission.**
- **LRDP EIR Mitigation Measure 4.6-11(a) – Implement Mitigation Measure 4.6-9.**
- **LRDP EIR Mitigation Measure 4.6-11(b) – Prior to occupying any building approved under the LRDP where medical waste may be generated, the Campus will provide a building-specific plan for disposal of medical waste, including description of waste treatment, and otherwise comply with requirements of the California Medical Waste Management Act applicable to the facility.**
- **LRDP EIR Mitigation Measure 4.6-11(c) – The Campus will continue its efforts to comply with all applicable provisions of the California Medical Waste Management Act, and will work closely with DHS to ensure satisfactory compliance.**
- **LRDP EIR Mitigation Measure 4.6-12 – Implement Mitigation Measure 4.6-9 and 4.6-10.**
- **LRDP EIR Mitigation Measure 4.6-14 - Implement Mitigation Measures 4.6-1(a) through (c).**
- **LRDP EIR Mitigation Measure 4.6-15 – Implement Mitigation Measures 4.6-1(a) through (c).**

- **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 either shall 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(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 4.6-20(a)** – *When transporting unwanted hazardous materials generated at new on-campus and off-campus facilities to the Campus Environmental Services Facility, the Campus shall use containers approved by the Department of Transportation or in unbreakable secondary containment containers with lids that seal to prevent a release if tipped over.*
- **LRDP EIR Mitigation Measure 4.6-20(b)** – *The Campus shall reseal all containers opened at Environmental Health and Safety or Central Stores prior to transporting them to Campus users.*
- **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.*
- **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)** – *Departments¹ 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).*

¹ For purposes of this project, departments include TJL.

- **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.

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) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X		
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?			X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?					X
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?					X

	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:					
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?				X	
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?					X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X		
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?					X
i) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a, b) For the purposes of analysis, potential impacts due to transport, use, or disposal of hazardous materials and associated waste can be divided into four categories: hazardous chemicals, radioactive materials, biohazardous materials, and upset or accident conditions. Each of these categories is analyzed below. In addition, this analysis evaluates the risk associated with the breeding and handling of laboratory animals at the proposed facility.

Hazardous Chemicals and Waste

Construction of the proposed JAX West could involve the use of various products that could contain materials classified as hazardous. Fuels, such as gasoline and diesel, would also be used in heavy equipment and other construction vehicles. The use and storage of such products are subject to applicable hazardous materials regulations, as discussed on pages 4.6-4 through 4.6-7 and Appendix E of the 1994 LRDP DEIR, 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 the use of temporary impermeable surfaces that would be placed under construction staging areas to protect soil and groundwater from contamination from inadvertent spills or leaks. As applicable hazardous materials regulations and contract specifications would be adhered to as standard procedures for such a project, the impact of construction-related hazardous chemicals usage and storage would be less than significant. There are presently no buildings or buried facilities on the project site; no demolition would be required. Thus, there will be no impact associated with demolition.

The proposed project would involve an increase in laboratory space on campus, and therefore would increase the use of hazardous chemicals, although only very small quantities of hazardous chemicals would be used. The 1994 LRDP EIR identified increased use of hazardous chemicals and increased generation of hazardous chemical waste as potentially significant impacts (Impacts 4.6-1 and 4.6-2). Operation of the proposed JAX West would contribute to, but not exceed, the potentially significant impacts identified in the 1994 LRDP EIR. In order to mitigate these impacts, the campus has implemented 1994 LRDP EIR Mitigation Measures 4.6-1(a) through (c) and Mitigation Measure 4.6-2(b). These impacts have therefore been reduced to a less-than-significant level.

In addition, cumulative impacts related to the increased use of hazardous chemicals and increased generation of hazardous chemical waste as a result of the implementation of the 1994 LRDP in conjunction with regional development, were identified as significant and unavoidable in the 1994 LRDP EIR (Impacts 4.6-3 and 4.6-4). The proposed project would contribute to, but not exceed, these cumulative impacts previously identified in the 1994 LRDP EIR. Implementation of 1994 LRDP EIR Mitigation Measures 4.6-3 and 4.6-4(a) and (b), would reduce the magnitude of these impacts but they would remain significant and unavoidable. 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 EIR.

Although impacts due to the increased use and generation of hazardous chemicals have been sufficiently analyzed in the 1994 LRDP EIR, project-specific impacts and cumulative impacts will be further evaluated in the Focused Tiered EIR in order to confirm this determination.

Radioactive Materials and Waste

The proposed JAX West would involve an increase in laboratory space on campus. At some future time, small quantities of radioisotopes could be used in the facility to elucidate chemical processes and analyze blood. The 1994 LRDP EIR identified increased use of radioactive materials and generation of radioactive waste as potentially significant impacts (Impacts 4.6-5 and 4.6-6). Operation of the proposed JAX West could in the future contribute to, but not exceed, these potentially significant impacts identified in the 1994 LRDP EIR. In order to address these impacts, 1994 LRDP EIR Mitigation Measures 4.6-5(a) and (b) and 4.6-6(d) have been implemented and implementation of Mitigation Measure 4.6-6(a) will be completed in the near future. Therefore, these impacts have been reduced to a less-than-significant level.

In addition, the increased use of radioactive materials and generation of radioactive waste as a result of development under the 1994 LRDP in conjunction with regional development, were identified as significant and unavoidable cumulative impacts in the 1994 LRDP EIR (Impacts 4.6-7 and 4.6-8). The proposed project could contribute to, but not exceed, these cumulative impacts previously identified in the 1994 LRDP EIR. Implementation of 1994 LRDP EIR Mitigation Measures 4.6-7 and 4.6-8 would reduce the magnitude of these impacts but they would remain significant and unavoidable. 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 EIR.

Therefore, impacts due to the increased use of radioactive materials and generation of radioactive waste have been sufficiently addressed by the 1994 LRDP EIR. However, project-specific and cumulative impacts will be further evaluated in the Focused Tiered EIR in order to confirm this determination.

Biohazardous Materials and Waste

The proposed JAX West would not result in an increase in the use of biohazardous materials. The mice housed in the facility may be immunologically compromised and so particularly susceptible to disease transmitted from the outside in materials or by humans; however, no disease organisms would be used at the facility which would present a biohazard. Biosafety cabinets would be present in the surgical suite or wet lab at the facility to be used when working with particularly sensitive animal specimens. These are included in the facility for the protection of the rodents and are not needed for protection of workers. The genetic standardization and breeding activities to be carried out at the proposed facility, and the genetically altered animals which would be produced and transported present no biosafety hazards to humans or other organisms. Because no disease organisms would be used at the lab, there also is no biosafety hazard associated with disposal of used bedding or other routine waste from the lab.

Any impacts due to the increased use of biohazardous materials and generation of biohazardous waste have been sufficiently addressed by the 1994 LRDP EIR. However, due to potential public concerns about the production, transport and use of inbred and genetically modified animals, project-specific and cumulative impacts will be further evaluated in the Focused Tiered EIR in order to confirm this determination.

Upset or Accident Conditions

The new laboratories at the proposed facility would operate within the normal range of wet chemistry. However, due to the increase in overall lab space on campus there would be an increase in transportation of chemical materials, and possibly of radioactive materials. These could expose people to potential health risks in the event of an accidental release. There also would be increased transport of genetically altered animals, regarding which there could be some public concern. However, the genetically altered animals, which would be produced and transported, would present no biosafety hazards to humans or other organisms. Further, the 1994 LRDP EIR identified this impact as less than significant (Impact 4.6-20) since inbound and outbound hazardous materials shipments would be packaged according to strict Department of Transportation specifications which would minimize the consequences of accidents. In addition, on-campus hazardous waste transport would be conducted in secondary containment to minimize the potential effects of accidental breakage or leakage during transport. Operation of the proposed facility would contribute to, but not exceed, this impact.

The proposed project would also incrementally contribute to, but not exceed, cumulative hazardous materials transportation impacts leading to an increase in the cumulative risk of exposure of people to health risks due to an accidental release. Cumulative hazardous materials transportation impacts were considered to be less than significant in the 1994 LRDP EIR (Impact 4.6-21) and no mitigation is required.

Hazardous waste generated on campus is collected and managed by the Environmental Health and Safety department through the campus Environmental Services Facility (UC Davis 1994b).

Although campus plans, policies, and training stress that hazardous wastes may not to be placed in the trash or poured down a drain, hazardous waste generated at the proposed facility could be inadvertently released to the sewer or disposed of with non-hazardous solid waste. This potential impact was considered significant in the 1994 LRDP EIR (Impact 4.6-24). However, the campus has implemented 1994 LRDP Mitigation Measure 4.6-24 which is a pre-treatment program that places limits on discharges to the sanitary sewer system. Pursuant to the program, the proposed project would need to ensure that inappropriate materials are not discharged to the sanitary sewer. This would reduce this impact to a less-than-significant level.

Laboratory Animals

The proposed project would involve the breeding of large numbers of genetically altered mice for research purposes. The mice would be bred and held for extended periods onsite. Animals present physical safety hazards, such as bites. Although no infectious agents will be used at the JAX West, there could be public concern regarding release of mice that could carry disease. As described in the Project Description, the facility has been designed to breed and raise genetically altered mice. No disease organisms such as viruses would be used in the facility. In addition, numerous design elements and procedural controls would be utilized to prevent disease organisms from entering the facility either on humans or other insects or rodents. The mice would be born and raised in a laboratory setting and kept in clean cages. Operation of interior space includes building components designed for frequent and easy cleaning and disinfection. Operations include protocols to protect animals from disease. Exotic viruses, such as the hantavirus, are carried by deer mice and their feces. Such viruses are extremely sensitive to disinfectants and thrive only in dark unclean settings. The regular cleaning and disinfection procedures would prevent any such viruses from spreading.

The 1994 LRDP EIR identified the increased use of laboratory animals as a potentially significant impact (Impact 4.6-10). Operation of the proposed JAX West would facilitate more research on campus and therefore contribute to, but not exceed, the potentially significant impact identified in the 1994 LRDP EIR. In order to address this impact, the campus has implemented 1994 LRDP EIR Mitigation Measure 4.6-10. Therefore this impact has been reduced to a less-than-significant level.

In addition, the increased production of research animals related to cumulative development in the region would increase the number of people exposed to health hazards associated with such use. This impact was considered significant and unavoidable in the 1994 LRDP EIR (Impact 4.6-12). The proposed project would contribute to, but not exceed, this cumulative impact previously identified in the 1994 LRDP EIR. Implementation of 1994 LRDP EIR Mitigation Measure 4.6-12, which would be required as part of the proposed project, would reduce the magnitude of this impact but it would remain significant and unavoidable. 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.

Therefore, impacts due to the increased use of research animals have been sufficiently addressed by the 1994 LRDP EIR. However, project-specific and cumulative impacts will be further evaluated in the focused Tiered EIR in order to confirm this determination.

- c) The project site is not located within ¼ mile of a high, middle or elementary school. The proposed project site is located within the West Campus of the University of California, Davis. Potential impacts to the University population are addressed in the 1994 LRDP EIR and elsewhere in this checklist item.

- d) The 1994 LRDP DEIR (pages 4.6-25 through 4.6-30) 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. 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 DEIR identified on-campus locations requiring further investigation for soil and groundwater contamination.

A Phase 1A Preliminary Site Assessment was conducted for the West Campus Enterprise Reserve including the project site in accordance with 1994 LRDP EIR Mitigation Measure 4.6-16(a). The investigation included a review of University and publicly available documents, maps and historical aerial photographs, interviews with persons knowledgeable about past activities on the project site, limited site reconnaissance, a review of federal, state, and local lists pertaining to hazardous substances and waste sites, and inquiries to the campus Office of Environmental Health and Safety for information regarding the site. The results of the investigation indicated that no environmental issues or conditions were identified that would prohibit the project from being constructed. There is a plume that extends from the campus landfill which is west of the site. That has been remedied but users in this portion of the campus are not allowed to draw groundwater from this area. The proposed project would be supplied domestic water from the campus domestic water system, and would not utilize groundwater from under the site. Therefore the proposed project site would not expose persons to existing hazardous materials or waste contamination.

- e) 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, as 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 based on the Federal Aviation Administration requirements have been prepared by the Sacramento Area Council of Governments. The proposed project is located adjacent to the University Airport and would be a one-story structure that would not interfere with the airspace associated with the airport. No impacts due to safety hazards related to the airport are anticipated to occur as a result of the proposed project.
- f) There are no private airstrips in the vicinity of the proposed project. Therefore there would be no impact.
- g) No existing streets or access points are planned for temporary or permanent alteration due to the proposed project. Therefore, neither on-site staging of construction equipment, nor travel between sources of construction material and the site, would result in interference with an emergency plan or emergency evacuation plan. As discussed in Item 4d, construction impacts related to emergency response or emergency evacuation routes and access would be less than significant.

The proposed project would involve an increase in lab space containing hazardous materials. Because the potential for incidents related to hazardous materials would be directly related to the magnitude of activities on campus involving hazardous materials and the proposed project would increase the use of hazardous materials, the number of future campus incidents would be expected to rise. As a result, implementation of the proposed project may slightly increase the likelihood of an accident requiring hazardous emergency response services. 1994 LRDP EIR Impact 4.6-22 concluded that increased campus operation using hazardous materials resulting from development

under the 1994 LRDP could exceed emergency response capabilities at UC Davis. This was considered to be a significant impact. In order to reduce this impact to a less-than-significant level, the 1994 LRDP EIR recommended Mitigation Measures 4.6-22(a) through (e) to be implemented prior to occupancy of the first project approved following adoption of the 1994 LRDP that involves the use of hazardous materials. As these mitigation measures have been implemented, this impact has been reduced to a less-than-significant level.

The 1994 LRDP EIR, as amended, concluded that increased campus operations, 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). This cumulative impact was considered significant and unavoidable even with the implementation of 1994 LRDP EIR Mitigation Measure 4.6-23, required for the proposed project, because the University could not guarantee that the City of Davis and Yolo County would reach a Mutual Aid Agreement to provide first-response both in the campus and in the City and County. However, since that time, the City of Davis and Yolo County have reached a Mutual Aid Agreement and therefore this impact is now reduced to a less-than-significant level.

- h) Implementation of the proposed project would not increase existing wildland fire hazards on the West Campus because it is not located in an area containing large amounts of flammable brush, grass or trees. The proposed project would be abutted on three sides by agricultural fields and by Hopkins Road on the fourth side. Implementation of the proposed project would not affect the existing wildland fire hazard in areas with flammable brush, grass, or trees. There would be no impact and no mitigation is required.
- i) Standards of significance for hazardous material impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for hazardous materials. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to hazardous materials that were not previously analyzed in the 1994 LRDP EIR.

8. BIOLOGICAL RESOURCES

Cumulative impacts of campus growth through 2005-06 on biological resources are addressed in Section 4.7 of the 1994 LRDP EIR; in Section 4.4 of the 1997 WWTP Replacement Project EIR; Chapter 8 of the 1997-98 Major Capital Improvement Projects Draft SEIR; and Appendix A of the 1997-98 Major Capital Improvement Projects Final SEIR; Item 7 of the Center for the Arts Tiered Initial Study and Mitigated Negative Declaration; and Item 8 of the USDA Western Human Nutrition Research Center Tiered Initial Study and Negative Declaration.

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 are discussed in the 1994 LRDP DEIR on pages 4.7-2 to 4.7-8 and illustrated in Figure 4.7-1 on page 4.7-3. The proposed project site includes the following habitat types.

Agricultural Lands – Agricultural lands include two habitat/cover types: (1) Cropland/Pasture habitat composed of an annual herbaceous plant species cover type and (2) Orchard/Vineyard habitat composed of a perennial woody plant species cover type.

Cropland is used for cultivation of annual or short-lived crops. It is a dynamic landscape feature that is frequently altered throughout the year. Most Cropland habitat supports a single crop that is planted in the spring and harvested during summer or fall. Planting and harvesting cycles are usually associated with the disking and tilling of fields which regularly and frequently disturbs the land. Cropland provides food and cover for wildlife species such as song birds and small rodents, and foraging opportunities for raptors due to the frequent flooding, mowing, or harvesting of the fields that make the prey readily available. The State-listed threatened Swainson's hawk relies heavily on Cropland for foraging. Plant species associated with Cropland habitat include cultivated crops and non-native herbs, shrubs, and trees associated with landscaped or disturbed edges along roads, irrigation ditches, and agricultural fields. Additional habitat elements that contribute to the value of Cropland when present are isolated oak trees and tree-lined, vegetated, or landscaped borders of fields and along roads. Most notable of the tree-lined streets are the walnut trees planted along Road 98 and Russell Road, and the olive trees along Hopkins Road and Olive Tree Lane. These habitat elements, when present, provide perching and nesting habitat for birds, as well as food, cover, and movement corridors for birds and other wildlife.

Pasture is used for livestock grazing and may not be leveled, regularly disked, or irrigated. Vegetation is typically a grassland-like ground cover. Habitat value varies according to pasture size and grazing intensity. Small pastures with many grazing animals may be nearly devoid of vegetation, and provide little habitat for wildlife; larger fields with fewer grazing animals and more ground cover provide some value to wildlife. Campus pastures provide variable habitat values depending on their size and intensity of grazing. Pastures that are essentially confined animal pens provide almost no value for native wildlife, while larger pastures with grassland-like habitat provide higher habitat values for wildlife.

Orchard-Vineyard is dominated by trees or vines and has a relatively low value for wildlife because understory vegetation that would provide food and cover for wildlife is not allowed to grow. Species such as ground squirrels, crows, and scrub jays that use this habitat are often considered agricultural pests. In the project vicinity, this habitat type is found along both sides of Hutchison Drive.

Ruderal/Annual Grassland—Ruderal/Annual Grassland is found along the edges of roads and fields, vacant uncultivated areas, and along the levee banks and upland flood plain of Putah Creek. This habitat type is a result of regular past or current disturbance from agricultural practices, road and levee maintenance, and proximity to roads and buildings. It typically occurs as open treeless grassland composed primarily of annual plant species. However, since the early 1900s, no large areas of grassland remain on campus due to the extensive amounts of cultivation and development.

The composition of the Ruderal/Annual Grassland habitat consists largely of non-native introduced annual grasses and forbs. Because of the aggressive nature of these introduced plants, the virtual extirpation of many native species and continued disturbance, they have become naturalized as the dominant species and have excluded the growth of native perennial grassland species that occurred prior to settlement and cultivation of the area. Grassland edges along fields and roads provide food, cover, and movement corridors for resident and migratory wildlife species. Small mammals, reptiles, and birds can be found in this habitat type. The burrowing owl, a State Species of Special Concern, is perhaps the most notable wildlife species that has been observed nesting and foraging in Ruderal/Annual Grassland on campus.

Special-Status Species such as state and federally listed rare, threatened or endangered species are discussed in the 1994 LRDP EIR on pages 4.7-8 through 4-7-18. Potential special status species that might be found on the campus are presented in Tables 4.7-1 and 4.7-2 of the 1994 LRDP EIR. The following special status species may potentially occur in the project vicinity.

Special-Status Plants

Consistent with 1994 LRDP EIR Mitigation Measure 4.7-1(a), a rare plant survey for special status species was conducted in June 1994 for the entire West Campus Enterprise Reserve, including the project site (ESA 1994). The survey focused on twelve special-status species known to occur in this portion of the UC Davis campus. The survey was performed according to CDFG guidelines. The survey confirmed that the reserve consists of disced fields. Most of the field perimeters supported ruderal species such as pigweed (*Chenopodium* sp.), star thistle (*Centaurea solititalis*), cheeseweed (*Malva parviflora*), filaree (*Erodium* sp.), puncture vine (*Tribulus terrestris*), bindweed (*Convolvulus arvensis*), ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), and barley (*Hordeum* sp.). Several of these species were also observed within the fields. No special status plant species were identified, and the study noted that only poor quality habitat, if any, is present on site to support special status species (ESA 1994).

Special-Status Wildlife Species

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 CDFG Species of Special Concern. The burrowing owl is also designated a “Migratory Non Game Bird of Management Concern” (MNBMC) by the U.S. Fish and Wildlife Services (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 were not detected at the site during field surveys in 1994. There is one pair of burrowing owls located approximately 0.25 mile southeast of the project site between the runway and taxiway at the University Airport. The owls are shielded from the project site by buildings.

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 Fish and Game Code of California 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 isolated trees remaining in or adjacent to agricultural fields in the Central Valley. However, in the City of Davis and on the Central Campus, these hawks also nest in the large trees among buildings, roads, and dwellings.

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

Annual surveys have been conducted for Swainson's hawk nests on campus and within one-half mile of the campus from 1990. The results of these surveys documented up to 46 different nest trees on the campus during 1992-1997 (UC Davis 1998a). There is one known nest site about 1,000 feet to the northeast of the site. The nest is shielded from the project site by buildings and trees and the nest is adjacent to the swine facility, beef barn, and about 400 feet from the airport. Therefore, these birds are habituated to high levels of noise. There are other existing or potential nest sites in the Putah Creek corridor which is approximately 0.5 mile to the south of the site and screened by buildings and wind breaks.

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 shrubs were observed at the project site.

Other Special Status Species: The ferruginous hawk has been identified as a Species of Special Concern by the CDFG, and is designated MNBMC by the USFWS. In the Central Valley, the ferruginous hawk is a sporadic winter visitor that is not present every year. Open grasslands and agricultural areas are used for foraging, and possible foraging habitat is present in the project area.

The northern harrier has been identified as a Species of Special Concern by the CDFG. This species is a raptor that breeds in grasslands and wetlands and forages in grasslands, wetlands and agricultural fields. Although northern harriers have been observed on agricultural lands on the West Campus, suitable nesting habitat is not found on the project site.

The loggerhead shrike has been designated a MNBMC by the USFWS and is identified as a Species of Special Concern by the CDFG. This species forages in open habitats such as grasslands, savannahs, and agricultural areas where scattered perches such as trees, shrubs, utility lines, and fences are available. Loggerhead shrikes have not been observed in the area, but may forage in and around the agricultural fields surrounding the project site.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to biological resources to be 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

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR, as amended, is also presented in the table. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. Please note that the LRDP EIR included mitigation measures to reduce the cumulative regional Impacts 4.7-9 and 4.7-10 to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the University of California could not guarantee implementation of the mitigation measures because they fell within other jurisdictions to enforce and monitor.

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
4.7-3 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 and could result in the loss of burrowing owl nesting habitat. ¹	PS	LS
4.7-4 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 could result in the loss of nesting habitat for raptors (birds-of-prey). 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
4.7-8 Development allowed under the 1994 LRDP could result in the loss or adverse modification of wetlands or other waters of the U.S. that fall under the jurisdiction of the Corps and/or CDFG.	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
4.7-10 Development allowed under the 1994 LRDP could contribute to the cumulative loss of valley elderberry longhorn beetle habitat.	SU	SU

SU = Significant and Unavoidable; S = Significant; LS = Less than Significant

¹ As amended in Impacts 4.4-4, 4.4-6, 4.4-15 through 4.4-19, and 4.4-22 of the 1997 WWTP Replacement Project EIR and Impact 8-11 of the 1997-98 Major Capital Improvement Projects Draft SEIR, and as summarized in Appendix A of the 1997-98 Major Capital Improvements Projects Final SEIR.

Mitigation measures in the 1994 LRDP EIR that are applicable to the proposed projects 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.*
 - *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 4.7-1(c)*** – Prior to design approval, the Campus in consultation with the CDFG and/or the USFWS, shall prepare and implement a mitigation plan, in accordance with any applicable State and/or Federal statutes or laws, that reduces impacts to a less-than-significant level.
- ***LRDP EIR Mitigation Measure 4.7-3(a)*** – The Campus shall continue to monitor the area around the Medical Sciences Complex for the presence or absence of burrowing owls.
- ***LRDP EIR Mitigation Measure 4.7-3(b)*** – The Campus, in consultation with the CDFG, shall conduct a pre-construction breeding-season survey (approximately February 1 through August 31) of proposed project sites during the same calendar year that construction is planned to begin. The survey shall be conducted by a qualified biologist to determine if any burrowing owls are nesting on or directly adjacent to any proposed project site.

If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.

- ***LRDP EIR Mitigation Measure 4.7-3(c)*** – During the construction stage, the Campus in consultation with the CDFG, shall avoid all burrowing owl nest sites potentially disturbed by project construction during the breeding season while the nest is occupied with adults and/or young. The occupied nest site shall be monitored by a qualified biologist to determine when the nest is no longer used. Avoidance shall include the establishment of a 300-foot to 500-foot diameter non-disturbance buffer

zone around the nest site. Disturbance of any nest sites shall only occur outside of the breeding season and when the nests are unoccupied based on monitoring by a CDFG approved biologist. The buffer zone shall be delineated by highly visible temporary construction fencing.

Based on approval by CDFG, pre-construction and pre-breeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance.

- ***LRDP EIR Mitigation Measure 4.7-4(a)*** – *The Campus shall conduct a pre-construction or pre-tree pruning or removal survey of trees greater than 30-feet tall (proposed activity) during the raptor breeding-season (approximately March 1 through August 31). The survey shall be conducted by a qualified biologist during the same calendar year that the proposed activity is planned to begin to determine if any nesting birds-of-prey would be affected.*

If phased construction procedures are planned for the proposed activity, the results of the above survey shall be valid only for the season when it is conducted.

- ***LRDP EIR Mitigation Measure 4.7-4(b)*** – *The Campus shall continue to conduct annual surveys to determine the location of nesting Swainson's hawks on the Campus. If nesting 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 Campus 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 4.7-5*** – *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 CDFG, 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 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 4.7-8(a)** – *During the project design phase, the Campus shall conduct a wetland delineation of the project site. The wetland delineation shall be verified by the Corps.*
- **LRDP EIR Mitigation Measure 4.7-8(b)** – *The Campus shall obtain an individual permit, written authorization under an existing nationwide permit, or a written response stating that no further action is required, from the Corps prior to the filling or other adverse modification of any Corps' verified delineated wetland habitats.*
- **LRDP EIR Mitigation Measure 4.7-8(c)** – *The Campus shall submit an application for a Streambed Alteration Agreement to CDFG at least 30 days prior to any alteration, filling, or modification of the channel, bed, or bank of Putah Creek, South Fork Putah Creek, or any other natural drainage with a distinct channel*
- **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.*
- **LRDP EIR Mitigation Measure 4.7-10** – *Implement Mitigation Measures 4.7-7 (a), (b), and (c).*
- **1997-98 Major Capital Improvement Projects SEIR Mitigation Measure 6.5-3** (As revised on page 65 of the USDA Western Human Nutrition Research Center Tiered Initial Study) - *In addition to the compensation for the loss of Swainson’s hawk foraging habitat identified in the 1994 LRDP EIR Mitigation Measure 4.7-5, the campus shall also convert either the approximately 55 acres of existing orchards adjacent to Putah Creek at the Russell Ranch or a portion of the 85 acres designated habitat restoration and research area to cover type suitable for burrowing owl nesting habitat.*
- **Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study, Land Use Mitigation Measure 1** – *Approximately 8.5 acres of Support use in the West Campus, west of County Road 98 and north of the Campus Landfill, shall be redesignated by The Regents as Teaching/Research Fields.*

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

	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?			X		
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?					X
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					X

	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:					
removal, filling, hydrological interruption, or other means?					
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?					X
e) Conflict with any local applicable policies protecting biological resources?					X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?					X
g) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a) Special status species are addressed in the 1994 LRDP DEIR on page 4.7-8. For the purposes of the EIR, special status species were defined as those taxa that are listed as threatened or endangered under either the California or Federal Endangered Species Acts, species that are candidates for either state or federal listing, and species afforded protection under the Fish and Game Code of California. Also included, as special status species, are California Department of Fish and Game (DFG) “Species of Special Concern.”

The vegetation cover on and in the vicinity of the site can be subdivided into three types: agriculture, ruderal (or weedy) ruderal/annual grassland, and landscape plantings. At present the entire site is under agriculture. The fields are used for annual crops. No perennial crops are found at the site. The annual grassland in the area is highly disturbed. This type of cover is limited to the borders of agricultural fields and road edges. Agriculture and ruderal annual grassland cover types are used by wildlife species such as song birds, birds of prey, and small rodents. Landscape plantings consist of ornamental, usually non-native plants including trees, shrubs, and lawns. Wildlife in this cover type is usually restricted to songbirds and small rodents.

Based on the special-status plant survey conducted at the West Campus Enterprise Reserve, no special-status plant species occur at the project site that could be affected by project construction and operation (ESA 1994; UC Davis 1998). No special-status wildlife species are known to nest or breed

at the project site (UC Davis 1998). Although no burrowing owls were detected at the site (the nearest pair is 0.25 mile to the east of the site at the University Airport; the nest site is shielded from the project by intervening structures), due to the presence of burrows it is considered possible that the species may inhabit the edges of the site. In compliance with LRDP EIR Mitigation Measure 4.7-3(b), the campus shall conduct pre-construction surveys of the proposed project sites, and if burrowing owls are detected, LRDP EIR Mitigation Measure 4.7-3(c) will be implemented. These measures would reduce potential impacts to this species to a less-than-significant level.

There are no Swainson's hawk nesting sites at or in very close proximity of the project site. The nearest nest site is located 1,000 feet to the northeast of the project site and is shielded from the project site by intervening structures and trees. There are other nest sites in the Putah Creek corridor (about ½ mile from the site). These are also screened from the project site by intervening structures of the Avian Sciences Research facility and trees. The site provides foraging habitat for the Swainson's hawk and other avian species, and the implementation of the project would remove approximately ~~6.5~~ acres of this foraging habitat. The removal of this habitat was anticipated in the 1994 LRDP EIR (Impact 4.7-5, as amended). The 1994 LRDP EIR identified Mitigation Measures 4.7-5 and 4.7-9(a) to reduce impact on foraging habitat from the conversion of agricultural lands and annual/ruderal grasslands to other uses. No further mitigation is necessary.

- b) There is no riparian habitat or any other sensitive natural community present at the site that could be affected by the proposed project. There would be no impact.
- c) There are no wetlands present at the project site that could be affected by the proposed project; therefore, no impact would occur.
- d) As discussed in Items (a) and (b) above, migratory bird foraging habitat exists within and adjacent to the proposed project site. Although the proposed project would remove some foraging habitat, it would not in any manner impede movement of the species and there would be no impact. No habitat for migratory fish exists at the project site.
- e) The proposed project would not involve the removal of any mature trees and would not conflict with any local applicable policies protecting biological resources; therefore, no impact would occur.
- f) There are no Habitat Conservation Plans, Natural Community Conservation Plans or other applicable conservation plans that include the project site. As a result, the proposed project would not conflict with such plans and no impact would occur.
- g) The standards of significance for impacts to biological resources that were used in the preparation of the 1994 LRDP EIR are presented at the beginning of this section of the Initial Study. These standards are consistent with the questions in the checklist for biological resources. Based on the discussion presented above, the proposed project would not exceed the standards of significance in the 1994 LRDP EIR. They would not result in any new project-level or cumulative impacts related to biological resources that were not previously analyzed in the 1994 LRDP EIR.

9. HYDROLOGY AND WATER QUALITY

Impacts of campus growth through 2005-06 on hydrology and water quality are addressed in Sections 4.8 and 4.14 of the 1994 LRDP EIR; Section 4.1 of the WWTP Replacement Project EIR; and Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

Background

Putah Creek and South Fork of Putah Creek form the southern boundary of the campus (see Figure 4.8-1 on page 4.8-2 of the 1994 LRDP DEIR). The historical North Fork is cut off from its former channel by levees, Highway 113, the Union Pacific Railroad Tracks, and Interstate 80. East of Highway 113 on the Central Campus, the former stream channel is known as the Arboretum Waterway. The 100-year flood plain on the campus is generally located along the Putah Creek channels (including the North and South Forks). A portion of the West Campus (along CR 98) is subject to inundation during a 100-year storm event and is designated as a flood hazard zone by the Federal Emergency Management Agency.

The South Fork of Putah Creek receives storm water and treated effluent discharge from the Campus Wastewater Treatment Plant. The new plant is more reliable to operate than the outdated treatment system that was in use when the 1994 LRDP was prepared.

The existing storm water 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 storm water retention basin for the Central Campus). Rainfall overflow is pumped into the South Fork 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 (up to 1,500 feet below ground surface). Utility water is used primarily for landscape irrigation and is drawn from wells in the shallow to intermediate aquifers (200 to 600 feet below ground surface). Groundwater underlying the campus is considered of good quality for agricultural use and of adequate quality for municipal use with some exceptions. Generally, groundwater quality is characterized as being high in mineral content.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to hydrology and water quality to be 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
- 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 level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is also presented in the table. Hydrology and water quality impacts were reviewed in the WWTP Replacement Project EIR, and in the 1997-98 Major Capital Improvement Projects SEIR; no new impacts were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that cumulative

regional Impacts 4.8-8 and 4.8-9 included mitigation measures to reduce the impacts to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the University of California could not guarantee implementation of mitigation measures that fell within other jurisdictions to enforce and monitor.

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
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 which 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

SU = significant and unavoidable; 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 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 Mitigation Measure 4.8-2(b)** – *If it is determined that existing drainage capacity would be exceeded, as part of final project design the Campus shall design and implement necessary and feasible improvements to minimize the occurrence of localized flooding. Such improvements could include, but would not be limited to the following:*
 - (i) *The expansion or modification of the existing storm drainage system. Site runoff could be controlled by upgrading the existing facilities, such as the expansion, or installation of additional storm drain lines, or pumps.*
 - (ii) *Single-project detention or retention basins. Single-project peak surface runoff flows could be limited in several ways, including small onsite detention basins, rooftop ponding, temporary flooding of parking areas, streets and gutters, landscaping designed to temporarily retain water, and gravel beds designed to collect and retain runoff.*
 - (iii) *Multi-project storm water detention or retention basins.*
- **LRDP 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 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 Stormwater 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, 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).

- **LRDP Mitigation Measure 4.8-4(b)** – *For construction operations which would disturb less than five acres of land, the campus shall include in all construction contracts a requirement that campus contractors prepare and retain on the site an erosion control plan which would include a description of the construction site, erosion and sediment controls to be used, means of waste disposal, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non- storm water management controls.*

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

- (i) *reduction of the area and length of time the site is cleared and graded;*

- (ii) *revegetation/stabilization of cleared areas as soon as possible;*
 - (iii) *implementation of comprehensive erosion, dust and sediment controls;*
 - (iv) *implementation of a program to control potential construction activity pollutants such as cement mortar, paints and solvents, fuel and lubricating oils, pesticides and herbicides;*
 - (v) *implementation of a hazardous material spill prevention, control and cleanup program.*
- **LRDP Mitigation Measure 4.8-5(a)** – *The Campus shall ensure that project design includes a combination of the following Best Management Practice (BMPs), or equally effective measures:*
 - (i) *Oil and grease separators shall be used to control roadway and parking lot contaminants*
 - (ii) *Parking lots shall be cleaned and swept on a regular basis*
 - (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 on 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.*
 - **LRDP EIR Mitigation Measure 4.8-6(a)** – *The Campus shall continue to monitor effluent discharge, in compliance with WDR Order No. 92-040¹, from the wastewater treatment plant to identify any exceedances of established WDR effluent limits.*
 - **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.¹*
 - **LRDP 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 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 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 specified industrial and construction activities, in compliance with the State's*

General Permits. Such plans shall include Best Management Practices or equally effective measures.

- **LRDP Mitigation Measure 4.8-9(a)** – *Implement Mitigation Measure 4.8-3(a) and (b).*
- **LRDP 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.²*
- **LRDP 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 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 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 Mitigation Measure 4.14-11** – *Implement Mitigation Measures 4.14-1(a) and (b).*

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

	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:					

² In 1997, WDR Order No. 92-040 was superseded by WDR Order No. 970-236.

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) Violate any water quality standards or waste discharge requirements?			X		
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)?			X		
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?	X				
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?	X				
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?	X				
f) Otherwise substantially degrade water quality?			X		

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
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?					X
h) Place within a 100-year flood hazard area, structures which would impede or redirect flood flows?					X
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?					X
j) Inundation by seiche, tsunami, or mudflow?					X
k) Exceed an applicable LRDP or Program EIR Standard of Significance?			X		

Discussion

a) 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 storm water runoff. This could adversely affect receiving water quality. Additionally, pesticides would be used during construction to eliminate the potential for outside vermin contamination. Soils underlying the project construction site are characterized as having minimal erosion potential (see Figure 4.9-1 on page 4.9-6 of the 1994 LRDP DEIR and discussion under Item 10b).

The area to be graded for site preparation of the facilities would be up to 6.5-acres. Due to the low erosion potential for soils on the site, the potential for related water quality impacts is minimal. As the area under construction would be 6.5-acres, 1994 LRDP Mitigation Measure 4.8-4(a), which requires the contractor to file a Notice of Intent and comply with the State General Construction Activity Stormwater Permit, would be implemented as part of the proposed project. Implementation of this mitigation measure would reduce the potential impact to a less-than-significant level. The 1994 LRDP EIR concluded that no project within the scope of the 1994 LRDP would have a significant impact after mitigation, and based on that conclusion, this Tiered Initial Study concludes that this project will not have a significant impact.

Operation

The project site would include up to ~~6.5~~ acres, most of which would be covered with new impervious surfaces. This would increase the current volume of surface water runoff and water quality potentially could be affected. The project would be designed so that all site runoff would be directed to [stormwater detention basins on the perimeter of the site for eventual discharge](#) to an existing storm drain in Hopkins Road to discharge with the rest of the stormwater from this portion of the Campus into Putah Creek. The stormwater system would collect runoff from all impervious surfaces on the site including buildings, sidewalks, and asphalt. Lawns and other open areas would continue to percolate on site and flow off site only during larger storms or when the soil is saturated.

The proposed project has the potential to adversely affect water quality in Putah Creek if stormwater from the site contains pollutants. For example, new paved areas and parked vehicles could lead to the release of oil, grease, and sediments into stormwater runoff from the site. Similarly, landscape irrigation could release nutrients and sediments.

The proposed project would result in an increase in impervious surface and landscaped area over current conditions, including construction of a new paved parking lot, which would result in increased sediment, nutrient and contaminant loading in receiving waters over existing conditions. The proposed project would increase the amount of landscaped area at the project site. In general, herbicides, pesticides, and fertilizers are not applied to campus landscape areas; however, pesticides may be used on the outdoor areas around the facility. The 1994 LRDP identified that up to 130 acres of impervious surfaces could be sited in the West and South Campuses and Russell Ranch. The proposed project is within the anticipated development under the 1994 LRDP and therefore the increase in surface runoff and associated contaminants was adequately evaluated in the 1994 LRDP EIR (Impact 4.8-5). 1994 LRDP EIR Mitigation Measure 4.8-5(a) [in the form of stormwater detention basins](#) would be implemented as part of the project design to reduce impacts to receiving water quality to a less-than-significant level and no further mitigation would be required. The proposed project would not directly or indirectly result in any discharges that would violate water quality standards.

The 1994 LRDP EIR concluded that cumulative effects of urban and agricultural development in the region could reduce receiving water quality of Putah Creek (Impact 4.8-8). 1994 LRDP Mitigation Measures 4.8-8(a)-(c) were identified to reduce this impact to a less-than-significant level, but the impact was considered significant and unavoidable because the University of California could not guarantee implementation of mitigation measures that fell within other jurisdictions to enforce and monitor. The proposed project would contribute to, but not exceed the increase in urban development 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 EIR, as amended.

Wastewater from the proposed facility would be treated at the campus' new wastewater treatment plant and would then be discharged to the South Fork of Putah Creek. The 1994 LRDP EIR recognized that increased flows to the Campus Wastewater Treatment Plant due to development 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 (Impact 4.8-6). Implementation of 1994 LRDP Mitigation Measure 4.8-6 would reduce this impact to a less-than-significant level and no further mitigation would be required.

- 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 established at depths from 50 to 1,500 feet below the ground surface.

Groundwater Recharge

As described above, the proposed project would increase impervious surfaces by up to ~~6.5~~ acres. This small addition would not lead to a measurable reduction in aquifer recharge. Also, this amount does not take into account landscaped areas that would surround the proposed facility [and the stormwater detention basins that would facilitate percolation of stormwater](#). Thus, on its own, the proposed project would not have a significant impact. The project would not significantly reduce the potential for groundwater recharge (page 4.8-18 in the 1994 LRDP DEIR). However, the 1994 LRDP EIR did conclude that the increase in impervious surface under the 1994 LRDP could reduce the potential for groundwater recharge. 1994 LRDP Mitigation Measure 4.8-3 would be implemented as part of the proposed project and would reduce this impact to a less-than-significant level. No further mitigation would be required. Because this project does not exceed the amount of new impervious surface anticipated under the LRDP, the small increase in impervious surface cover attributed to the proposed project would not result in a significant loss of groundwater recharge capability over that evaluated in the 1994 LRDP EIR.

The 1994 LRDP EIR, as amended, concluded on page 4.8-26 that development 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. 1994 LRDP Mitigation Measure 4.8-9(a) and (b) would be implemented as part of this project to reduce the magnitude of this impact but this cumulative impact was considered significant and unavoidable because the University of California cannot guarantee implementation of mitigation that falls within the jurisdiction of others 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 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 amended.

Deep Aquifer

The campus obtains its domestic water from the domestic/fire water system on campus, which uses wells that draw from the deep aquifer. The proposed project would result in a small increase in campus building space and a subsequent increase in domestic water demand. As described on page 4.14-11 of the 1994 LRDP DEIR, increased development would result in an estimated increased demand for water from the deep aquifer of 223 million gallons per year (mgy), for a total demand of approximately 1,115 mgy. Of this total demand, the proposed project would require approximately 10 mgy. As noted in the project description, final calculations of domestic water demand have not yet been completed but will be completed before the publication of the Draft Focused Tiered EIR for this project.

As stated on page 4.14-11 of the 1994 LRDP DEIR:

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.

The 1994 LRDP EIR concluded that impacts on the supply of the deep aquifer could be reduced in magnitude through implementation of 1994 LRDP Mitigation Measure 4.14-1(a) and (b) but the impact would remain significant and unavoidable. Implementation of the proposed project would incrementally contribute to, but not exceed, the demand on the deep aquifer identified under the 1994 LRDP. This impact was adequately analyzed by 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.

The 1994 LRDP EIR, as amended, concluded that cumulative growth under the 1994 LRDP would result in increased demand for water from the deep aquifer. This cumulative impact was considered significant and unavoidable even with implementation of the above mentioned mitigation measures (4.14-(a) and (b)). The proposed project would contribute to, but not exceed domestic water demand from the deep aquifer identified under the 1994 LRDP. This significant and unavoidable impact was adequately analyzed in the 1994 LRDP EIR and the 1997-98 Major Capital Improvement Projects SEIR and fully addressed by the Findings and Overriding Considerations adopted by The Regents in connection with its approval of the 1997-98 Major Capital Improvement Projects SEIR.

Shallow/Intermediate Aquifer

~~The proposed project would include some limited landscaping which would require irrigation. Because the project would use domestic water and not the water from the shallow/intermediate aquifer, for irrigation, it would have no impact on the aquifer. The campus relies on the shallow/intermediate aquifer to provide irrigation water. It is not anticipated that the irrigation water needed for landscaping would result in a significant change in the quantity of groundwater due to direct withdrawals because project operations would include water conservation measures such as the installation of low water use landscape, drip irrigation, irrigation control devices, and application of mulch (1994 LRDP EIR Mitigation Measures 4.8-5(a), 4.14-1(a), and 4.14-3(a)). Furthermore, as described on page 4.14-13 of the 1994 LRDP DEIR (Impact 4.14-3), impacts to the shallow/intermediate aquifer associated with utility water use as a result of buildout of the 1994 LRDP were considered less than significant. Although not required, the 1994 LRDP EIR identified Mitigation Measure 4.14-3(a) and (b) to further reduce utility water demand impacts on the shallow/intermediate aquifer.~~

~~Facilities Services measures the static water levels in all utility wells in the fall and spring of each year. Data from the annual measurements is included in the Campus Water Management Plan for evaluation by the Water Management Task Force. In addition, the Agricultural Services Office continues to monitor spring and fall static water elevations in the shallow/intermediate aquifer. This activity has been ongoing for approximately 40 years. Annual precipitation and groundwater pumping and deliveries are also recorded (UC Davis 1999e). This information is used to help forecast annual water supplies and balance usage between groundwater and surface water supplies. By complying with 1994 LRDP EIR Mitigation Measures 4.14-3(a) and 4.14-3(b), impacts to the shallow/intermediate aquifer would remain less than significant.~~

- c) Stormwater that falls on the site percolates into the ground. Larger flows enter the ditches along the eastern pond northern site boundaries to drain to an existing stormdrains in Hopkins Road. The

proposed project will not alter the existing drainage pattern and would not result in significant erosion or siltation on or off-site (Please see item 9a). This impact is less than significant, and no mitigation is required.

- d.) As described in Item 9a, the proposed project would result in an increase in surface runoff associated with increased impervious surfaces and increased landscape irrigation. The increase in surface runoff due to the proposed project is not expected to result in a significant change in the total amount of surface runoff beyond the capacity of the existing storm drain system, so as to result in flooding on- or off-site.
- e) Consistent with 1994 LRDP EIR Mitigation Measure 4.8-2(a), the storm drainage system near the project site will be evaluated to confirm that the capacity of the existing outfall and stormdrains pumps is adequate to serve the proposed project and no modifications would be required. If local relocation and up-sizing of existing collection pipes is needed, it would occur under existing roads and parking lots. The analysis of this impact will be included the Utilities and Service Systems in the Draft Focused Tiered EIR for this project.
- f) Potential sources of water quality degradation as a result of the proposed project are discussed above in Item 9a.
- g, h) The proposed project site is not located in a 100-year flood plain as defined by the Federal Emergency Management Agency (please see Figure 4.8-2, 100-Year Flood Plain, on page 4.8-4 of the 1994 LRDP DEIR). Furthermore, the proposed project does not involve construction of housing. Consequently, the project would not expose people or property to water-related hazards associated with the 100-year flood plain.
- i) The proposed project site is not located near a levee or dam and would not be subject to a significant risk of flooding due to failure of one of these structures. The campus is located approximately 23 miles downstream of Monticello Dam (Lake Berryessa) and the Putah Diversion Dam. An inundation map prepared by the U.S. Bureau of Reclamation shows that flooding due to failure of Monticello Dam would not be significantly greater than the designated 100-year flood plain (City of Davis 1987 *in* UC Davis 1999c). Because the proposed project is not located within a designated 100-year floodplain and would not be exposed to inundation as a result of dam failure, no impact would occur.
- 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 that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for hydrology and water quality. Based on the discussion presented above, the proposed project would contribute to a significant and unavoidable impact on the deep aquifer. However, this impact was adequately addressed in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-related or cumulative impacts related to hydrology and water quality that were not previously analyzed in the 1994 LRDP EIR.

10. GEOLOGY AND SOILS

Cumulative impacts of campus growth through 2005-06 related to geotechnical factors and soils are addressed in Section 4.9 of the 1994 LRDP EIR.

Background

There are a number of fault zones located within 100 miles of the campus; however, neither the campus nor the City of Davis is located within an Alquist-Priolo Special Study Zone. The East Valley fault, approximately located 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.

Some 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 and 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 DEIR. Soil descriptions and constraints are described on pages 4.9-5 through 4.9-9 of the 1994 LRDP DEIR.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered a geotechnical impact to be 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

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is 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, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that cumulative regional Impact 4.9-3 included mitigation measures to reduce the impact to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the University of California could not guarantee implementation of mitigation measures that fell within other jurisdictions to enforce and monitor.

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	SU	SU

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
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 = significant and unavoidable; 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.*
- **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*

(vi) 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.

	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?					X
ii) Strong seismic ground shaking?			X		
iii) Seismic-related ground failure, including liquefaction?			X		
iv) Landslides?					X
b) Result in substantial soil erosion or the loss of topsoil?				X	
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?					X
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?				X	

	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:					
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?					X
f) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

a) i) While numerous faults occur within 100 miles of the campus, the project site is not located within an Alquist-Priolo Earthquake Fault Zone. Table 4.9-2 of the 1994 LRDP DEIR lists selected regional faults. As described on page 4.9-2 of the 1994 LRDP DEIR, 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 within the new JAX West to potential substantial adverse effects involving rupture of a known earthquake fault.

ii, iii) The issue of groundshaking is discussed on page 4.9-2 of the 1994 LRDP DEIR:

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.

The 1994 LRDP DEIR 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, localized soil assessments would be performed for the proposed project and would further identify liquefaction potential. A site-specific geotechnical study prepared for the Contained Research Facility adjacent to the project site found that the potential for seismic ground failure and liquefaction was low (UC Davis 1996b).

The proposed project involves the construction of a new research laboratory building. The proposed structure and associated employees could be exposed to groundshaking and secondary seismic effects from earthquakes. Implementation of 1994 LRDP EIR Mitigation Measures 4.9-1(a), (b) and (c), which would be required as part of the proposed project, would reduce this

impact to a less-than-significant level. Implementation of Mitigation Measure 4.9-1(a) would confirm that the new facility would be designed and installed in compliance with applicable California Uniform Building Code (CUBC) Zone 4 and Title 24 standards. Therefore, significant impacts to the proposed structure and associated persons due to groundshaking and secondary seismic effects including liquefaction and ground failure, would be mitigated to a less-than-significant level through incorporation of mitigation measures adopted as part of the 1994 LRDP EIR and no further mitigation is required.

The 1994 LRDP EIR concluded that development under the LRDP along with cumulative development in the region 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 (Impact 4.9-3). This impact was considered to be significant and unavoidable. 1994 LRDP EIR Mitigation Measures 4.9-3(a)-(c) were identified to reduce this impact to a less-than-significant level, but the impact would remain significant and unavoidable because the University of California could not guarantee implementation of mitigation measures that fell 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 recognized 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 EIR, as amended.

- iv) The proposed project site and surrounding area is characterized by flat topography and therefore would not be subject to landslides.
- b) The proposed project site is underlain by mostly Yolo series soils found on alluvial fans (see Figure 4.9-1 on page 4.9-6 of the 1994 LRDP DEIR). These soils exhibit moderately rapid permeability, very slow runoff, minimal hazard of erosion and moderate shrink-swell potential.

The proposed project would involve grading and excavation activities to construct building foundations and infrastructure. Such earthmoving activities could result in increased rates of erosion during construction. However as described above, the erosion hazard for the soils under the project site is minimal, therefore this effect would be negligible. The proposed project would be designed to ensure that potential adverse effects related to soil constraints would be minimized to the maximum extent feasible in accordance with applicable California Uniform Building Code (CUBC) requirements. Therefore, impacts would be less than significant.

- 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 under Item 10b). Subsidence due to groundwater withdrawal has been identified at a few locations in Yolo County; however, none of the locations are at or near the campus (Yolo County Community Development Department 1983 *in* UC Davis 1999c). 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 DEIR). 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 not anticipated to result in any new significant impacts that have not already been evaluated in the 1994 LRDP EIR. This impact is considered to be less than significant and no additional mitigation is required.

- d) As previously mentioned, soils underlying the project site exhibit moderate shrink-swell (expansion) potential. This is the potential for volume change in a soil with a loss or gain in moisture. A moderate shrink swell potential can cause damage to buildings and other structures (UC Davis 1994b). As stated on page 4.9-10 of the 1994 LRDP DEIR and above, UC Davis is required to comply with the CUBC for all building design and construction. The proposed project would also implement 1994 LRDP Mitigation Measure 4.9-1(a) (see above Item 10a(ii)), which would require review of facility design to ensure compliance with CUBC requirements. Compliance with these requirements would mitigate potential adverse effects associated with expansive soils or other site geotechnical characteristics to the extent feasible, thereby reducing the hazards to a less-than-significant level.
- e) Sewers would be available for the disposal of wastewater at the proposed project site. Therefore, septic tanks would not be needed.
- f) Standards of significance for geology and soils impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for geology and soils. Based on the discussion presented above, the proposed project does not exceed the standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to geology and soils that were not previously analyzed in the 1994 LRDP EIR.

11. MINERAL RESOURCES

Mineral resources are briefly discussed in Section 4.9 of the 1994 LRDP EIR. Natural gas has been found on the Main Campus and at the Russell Ranch. No natural gas has been found on the West Campus. 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.

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?					X
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?					X

	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:					
c) Exceed an applicable LRDP or Program EIR Standard of Significance?					X

Discussion

- a) As described on page 4.9-9 of the 1994 LRDP DEIR, there are no known or potential mineral resources identified on the campus. Natural gas has been identified under a portion of the campus, but development of the proposed facilities would not affect availability of any mineral resource (UC Davis 1999c).
- b) The proposed project would not 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.
- c) The 1994 LRDP EIR did not identify any standards of significance with respect to mineral resources.

12. CULTURAL RESOURCES

Cumulative impacts of campus growth through 2005-06 on cultural resources are addressed in Section 4.10 of the 1994 LRDP EIR; Section 4.5 of the WWTP Replacement Project EIR; and Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

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 prior to contact with people of European descent. Historical resources include structures, features, artifacts and sites that date from Euroamerican settlement of the region.

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. Less than 10 percent of West Campus, South Campus, and Russell Ranch have been surveyed for prehistoric resources. Prehistoric Native American sites, some including human remains, 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 Inventory of Historic Resources, and several are considered significant historical resources. There are over fifty structures on campus that are over 45 years old, including a number on the West Campus. Most of these have not been evaluated for historical significance. Future analysis would be required under CEQA and the National Historic Preservation Act for any projects involving buildings over 45 years old that could be damaged or destroyed.

The campus has extensive landscaping, some of it dating to early periods in the campus' history (early 1900s). Staff of the campus arboretum mapped the campus' historic landscape features in 1989, and identified twelve landscaping districts that correlate to specific periods in the campus' history. Criteria for placement on the inventory included the designer's fame, the period, and the design's rarity and quality. Some landscapes were selected because of the architectural period in which they were designed. Landscapes placed on the inventory included the Quad, the horseshoe configuration of the Memorial Union courtyard, the area around Lake Spafford, the Carolle Shields Garden, Shields Grove, and the Arboretum Headquarters area. None of these areas is located in the project vicinity.

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

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The level of significance before and after the application of mitigation measures identified in the 1994 LRDP EIR is also presented in the table. Impacts to cultural resources were reviewed in the WWTP Replacement Project EIR and in the 1997-98 Major Capital Improvement Projects SEIR; no new impacts were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR, as updated in these subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that LRDP EIR Cumulative 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 could not guarantee implementation of mitigation measures that fell 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
4.10-3 Development allowed under the 1994 LRDP could damage or destroy significant landscape features by excavation, grading and construction activities.	S	LS
4.10-4 Development allowed under the 1994 LRDP could contribute to a cumulative loss of prehistoric and historic	SU	SU

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
resources in Yolo and Solano Counties.		
SU = significant and unavoidable		

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 4.10-1(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.

The project site is within the area identified for moderate level archaeological investigation.

- **LRDP EIR Mitigation Measure 4.10-1(c)** - *For sites requiring moderate level of investigation, the following steps shall be taken.*
 - (i) *A surface survey shall be conducted by a qualified archaeologist prior to project approval.*
 - (ii) *If evidence of archeological resources is found, a qualified archaeologist shall prepare and implement a plan for subsurface investigation of the site. The archaeologist shall determine and advise the Campus on the potential for the project to affect a significant archaeological resource. If the project might affect a significant archaeological resource, the Campus shall adopt an appropriate mitigation plan at the time of project approval. If feasible, the Campus shall consider avoidance at significant archaeological sites as the preferred mitigation. At a minimum, data recovery at significant archaeological sites will be implemented.*
 - (iii) *If evidence of archaeological resources is not found during the surface survey, a qualified archaeologist shall be present during excavation and grading, as deemed necessary by the archaeologist.*
 - (iv) *Steps (i) through (iv) of item (b) shall be implemented.*

- ***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; and*
 - (iii) *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.*
 - (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;*
 - *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*
 - *Recordation 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 4.10-3(a)*** - The Campus shall develop a process for identifying significant landscape features. In addition to CEQA and other State guidelines, the process

shall consider the role of open spaces and heritage trees in the Campus and the region, and the current condition and potential lifespan of the feature.

- **LRDP EIR Mitigation Measure 4.10-3(b)** - The Campus shall determine whether landscaping would be damaged or destroyed. If landscaping would be damaged or destroyed, the Campus shall use the process developed under Mitigation Measure 4.10-3(a) to determine whether the landscaping is significant. If feasible, significant landscape features shall be preserved. If preservation cannot occur on the site, the landscape features shall, if possible, be moved.
- **LRDP EIR Mitigation Measure 4.10-3(c)** - Prior to moving and/or destroying significant landscaping the Campus shall produce a written and photographic record. A copy of the record shall be deposited with the University Archives, Shields Library Special Collections.
- **LRDP EIR Mitigation Measure 4.10-4(a)** - Implement Mitigation Measures 4.10-1(a) and (c), 4.10-23(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.

	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?					X
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?			X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?					X
d) Disturb any human remains, including those interred outside of formal cemeteries?			X		

	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:					
e) Cause a substantial adverse change in the significance of a historic landscape feature?					X
f) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- (a) The project site was subjected to a cultural resources survey including archaeological survey and subsurface archaeological investigation (Pacific Legacy 1998). No historic structures or historic resources were identified on the project site. Buildings dating ca. 1924 are present near the project site, but historic buildings are not present on the project site. No historic buildings or structures will be affected by the project.
- b) No archaeological resources were identified during the survey conducted at the site. The project includes LRDP mitigation measures which will ensure that should archaeological deposits or unique archaeological resource be encountered during construction, they will be approximately assessed and will be subject to appropriate protection or mitigative data recovery at that time, consistent with 1994 LRDP Mitigation Measures 4.10-1(c) (ii, iii and iv).

Even if cultural resources were adequately recorded the archaeological impact would remain significant and unavoidable, destruction and/or removal from their place of origin would reduce their value as a resource. 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.

The 1994 LRDP EIR, as amended, concluded that implementation of the 1994 LRDP could contribute to a cumulative loss of cultural resources in Yolo and Solano Counties (Impact 4.10-4). Although the 1994 LRDP EIR identified mitigation measures to reduce the magnitude of this cumulative impact it was considered significant and unavoidable because implementation of Mitigation Measure 4.10-4(b) falls within other jurisdictions to monitor and enforce. The proposed project could contribute to the loss of prehistoric and historic resources if archaeological or historic resources were identified on the project site during construction. 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 1997-98 Major Capital Improvement Projects SEIR.

- c) As described on page 4.9-1 of the 1994 LRDP DEIR, subsurface soils in the campus area encompassed by the 1994 LRDP are comprised of alluvial sediment deposited by Putah Creek to a depth of up to 3,000 feet below the surface 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 shallow soils at the site have already been highly disturbed by previous uses (such as agriculture), and no deep or contouring excavations are anticipated. Therefore, no impacts to paleontological resources are anticipated to occur.

- d) No formal cemeteries are present on the project site, nor are any archaeological sites known to be present. Although archaeological sites including human remains are present on campus, no human remains are anticipated on the project site. Should human remains be encountered during project construction, work in the vicinity will halt and the County Coroner will be notified as stipulated by Public Resources Code 5097. Native American consultation will be carried out should the remains be determined to be Native American. Further, should the coroner determine that the remains are of prehistoric origin, archaeological mitigations as described in (b), above, will apply.
- e) No significant historic landscape features are present on the project site. Therefore, no impact would occur.
- f) Standards of significance for cultural resource impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for cultural resources. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to cultural resources that were not previously analyzed in the 1994 LRDP EIR.

13. AESTHETICS

Cumulative impacts of campus growth through 2005-06 on aesthetics are addressed in Section 4.11 of the 1994 LRDP EIR; Section 4.7 of the WWTP Replacement Project EIR; and Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR.

Background

To the south and west, the campus is bordered by orchards, tilled fields and pastures, 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 composed primarily 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 West Campus, where the proposed project is to be located, is described below.

The West Campus is primarily open agricultural research fields interrupted by low-density agricultural research buildings. Many of the campus' field-based research functions are housed on the West Campus, including the beef and sheep barns, the CRPRC, and numerous plant and animal laboratories. The University Airport and campus landfill are also located on the West Campus.

The 1994 LRDP identifies features of the visual environment that are valued by the campus community and should be preserved. The "open character of the working agricultural landscape" and views of the English Hills and Vaca Mountains are identified as valued visual quality for West and South Campuses. The 1994 LRDP would preserve the open, agricultural character of the West and South Campuses and Russell Ranch by retaining agricultural uses and research in those areas, and allowing structures that are only one or two stories high.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to aesthetics to be 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

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. The level of significance before and after application of mitigation measures identified in the 1994 LRDP EIR is also presented in the table. Aesthetic impacts were reviewed in the WWTP Replacement Project EIR and in the 1997-98 Major Capital Improvement Projects SEIR; no new impacts were identified and no additional mitigation measures were adopted that apply to the proposed project. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. Please note that the 1994 LRDP EIR included mitigation measures to reduce cumulative Impact 4.11-5 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 a mitigation measure that fell within other jurisdictions to enforce and monitor.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance after/with Mitigation
4.11-2 Structures built under the 1994 LRDP could be incompatible with the rural agricultural character of the South and West Campuses and Russell Ranch.	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

SU = significant and unavoidable; PS = potentially 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 4.11-2** – *The Campus Design Review Board shall review proposed structures on the South and West Campuses and Russell Ranch to ensure that the design, setbacks, screening and landscaping will achieve compatibility with the surrounding landscape.*

- **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.

	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?				X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?					X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X		
e) Affect valued elements of the Central Campus visual landscape?					X

	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:					
f) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a) The UC Davis campus occupies fairly flat terrain and is 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 (UC Davis 1994b). The proposed project involves the construction of a new one-story facility near the University Airport. This building would be similar in scale and appearance to other development in the area, and would not impact scenic views in any direction. The 1994 LRDP EIR concluded that the effect of new construction on existing views is not considered significant (Impact 4.11-3). Therefore this impact is considered to be less than significant and no mitigation is required.
- b) The project site, which would include the proposed JAX West and associated parking, consists of agricultural fields adjacent to agricultural research and animal housing buildings similar in appearance to the proposed project. There are no identified scenic resources in the vicinity of the project. Once the Jackson Laboratory facility is constructed, parts of the site away from the building and not used for parking would be landscaped. As a result, the proposed project would have a no impact on scenic resources and no mitigation would be required.
- c) The project area is visually characterized by agricultural open space with scattered agricultural-related facilities, generally of one story. The project site is currently an open field, with agricultural research labs, barns, and related facilities nearby. As stated at the beginning of this item, the 1994 LRDP noted that these agricultural features of the West Campus’ visual environment are valued by the community and should be preserved.

The 1994 LRDP EIR determined that depending on the location, height, massing, design and landscaping, new structures could substantially alter the existing visual character and the agricultural atmosphere of the South Campus. Consistent with 1994 LRDP EIR Mitigation Measure 4.11-2, 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 to ensure that the design, setbacks, screening, and landscaping would make the project compatible with the surrounding environment. As a result, with the implementation of the mitigation measure outlined in the 1994 LRDP EIR, the impacts of the proposed project on the visual character of the site and its surroundings would be considered less than significant.

The 1994 LRDP EIR determined that development 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). This impact was considered significant and unavoidable because implementation of 1994 LRDP Mitigation Measure 4.11-5(b) falls outside of the University’s jurisdiction to enforce and monitor. The proposed project would replace part of an agricultural field with a laboratory animal breeding facility. However, the proposed project site is

adjacent to parcels devoted to similar uses, and is immediately adjacent to Interstate 80. The project would make a de minimis contribution to the conversion of the region's rural character identified as significant and unavoidable under the 1994 LRDP. Furthermore, this 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.

- 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 facility would have night security lighting. Although there would be an increase in light and glare in the vicinity of the project, other campus buildings in the immediate area also create light and glare.

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 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 these guidelines, potential light and glare impacts associated with the project would be reduced to less-than-significant levels.

- e) The proposed project is too distant from the Central Campus to affect valued elements of the visual landscape in that portion of the campus. There would be no impact.
- f) Standards of significance for visual quality/aesthetic impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for aesthetics. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to visual quality that were not previously analyzed in the 1994 LRDP EIR.

14. PUBLIC SERVICES

Cumulative impacts of campus growth through 2005-06 on fire protection, police protection, schools, and other public facilities are addressed in Sections 4.12 and 4.13 of the 1994 LRDP EIR.

Background

Fire protection – The UC Davis Fire Department provides fire protection, hazardous materials incident response, and emergency medical service to the campus. The campus Fire Department is currently staffed with 18 career firefighting personnel (six assigned to each of three shifts to maintain minimum staffing of five), 15 resident-student firefighters, five fire prevention staff, and five administrative and support personnel (UC Davis 1998b). 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 two 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. The Department has 29.5 sworn officers plus non-sworn personnel, including dispatchers and support staff (UC Davis 1998b). Police protection service demand is based on a ratio of personnel to increased population (0.72 officers per 1,000 population). In 1998-99, the ratio was 0.89 sworn officers per 1,000 students, staff and faculty on the UC Davis campus.

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 (libraries) – 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 the Health Sciences Library. The Davis Library, a branch of the Yolo County Library, is located in the City of Davis.

1994 LRDP EIR Standards of Significance

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

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

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 level of significance before and after application of mitigation measures identified in these documents is also presented in this table. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted 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 were identified as significant and unavoidable because the University of California could not guarantee implementation of mitigation measures that fell within other jurisdictions to enforce and monitor.

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

LRDP EIR IMPACT		Level of Significance Prior to Mitigation	Level of Significance After/With Mitigation
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

SU = significant and unavoidable; 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 4.12-1** - *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 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 police protection needs; 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 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.

	Potentially Significant Impact	Less-than-significant with Mitigation Incorporated	Impact for which LRDP/Program EIR is Sufficient	Less-than-significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
i)	Fire protection?		X		
ii)	Police protection?		X		
iii)	Schools?		X		

	Potentially Significant Impact	Less-than-significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less-than-significant Impact	No Impact
iv) Parks?			X		
v) Other public facilities?			X		
b) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

a) (i) The UC Davis Fire Department provides fire protection for the UC Davis campus. To maintain a ratio of 3.5 firefighters per 1,000,000 gsf of building area and to ensure adequate response times, the campus Fire Department entered into two automatic aid agreements in 1994 with the City of Davis. In addition, the proposed project includes fire safety features such as fire sprinkler systems and fire alarm systems. All design and construction of the proposed project would conform to all applicable building codes and fire/life safety codes. The proposed project includes construction of a new 96,064 ~~65,000~~ gsf facility on campus and would be considered additional space to be protected by the campus Fire Department. The campus Fire Department is located on the Central Campus, approximately 2.5 miles east of the project site in the Fire and Police Building on Kleiber Hall Drive.

The addition of 96,064 ~~65,000~~ gsf of indoor space would require an additional 0.34 ~~0.23~~ firefighters to maintain current level of service. Because implementation of the proposed project would increase the need for firefighters, it would be required to comply with the campus' level of service policy. However, as discussed in Section IV, Consistency with the 1994 LRDP EIR, the proposed total gsf is within the amount of development approved under the 1994 LRDP. Therefore, the proposed project would incrementally contribute to, but would not exceed, the need for increased fire protection service identified in the 1994 LRDP EIR (Impact 4.12-1). Continued compliance with 1994 LRDP EIR Mitigation Measure 4.12-1, which would be required as part of the proposed project, would reduce this impact to fire protection services to a less-than-significant level and no further mitigation is required.

As described on pages 4.3-3 and 4.3-4 of the 1997-98 Major Capital Improvement Projects DSEIR, development under the 1994 LRDP is projected to increase the daily maximum peak domestic/fire water demand to a total demand of approximately 7,500 gallons per minute (gpm) at buildout. Current capacity of the existing wells and reservoir is 6,670 gpm. In addition, 2,140 gpm of standby capacity exists provided by interconnections to Utility Wells 5 and 6A for a total capacity of 8,810 gpm available in the system. Peak demand for fire flows would be substantially higher than peak domestic water demand. Therefore, campus domestic/fire water system distribution lines are sized to meet peak fire flows. The demand associated with project development would not exceed the projected demand for the 1994 LRDP. Furthermore, implementation of 1994 LRDP EIR Mitigation Measure 4.12-2, which is included in the proposed project, would reduce any significant water pressure impacts which may arise to a less-than-significant level and no further mitigation is required.

The 1994 LRDP EIR, as amended, concluded that cumulative growth under the 1994 LRDP could result in decreased level of service from City of Davis fire protection services (Impact 4.12-4). This cumulative impact was considered significant and unavoidable because implementation of 1994 LRDP EIR Mitigation Measure 4.12-4(b) is not within the University's jurisdiction to enforce and monitor. As the proposed project is consistent with the 1994 LRDP scope of development, it would contribute to, but not exceed, the increase in development 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 EIR, as amended.

- (ii) The campus Police Department provides service to the project area. On the campus, the Department is currently staffed with 29.5 sworn officers plus other non-sworn personnel, including dispatchers and support staff. Police protection service demand is based on ratio of personnel to increased population (0.72 sworn officers per 1,000 population of students, faculty, and staff). The 1994 LRDP EIR (Impact 4.12-3 on pages 4.12-6 through 4.12-7 of the 1994 LRDP DEIR) concluded that development under the 1994 LRDP would result in a significant impact on police services. The campus is therefore required to implement 1994 LRDP EIR Mitigation Measure 4.12-3 to reduce increased demand on police protection services to a less-than-significant level.

In 1998-99, the campus population of students, faculty, and staff was 32,982 (Table 4). Thus, the ratio of officers was 0.89 per 1,000 students, faculty, and staff which exceeded the campus standard. In accordance with LRDP EIR Mitigation Measure 4.12-3, the campus Police Department has also updated their communications center with the addition of a state-of-the-art radio system. In addition, 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.

It is expected that the proposed project would add approximately ~~131-135~~ new employees to the campus. Other approved campus projects (1997-98 Major Capital Improvement Projects, Center for the Art Performance Hall, 1999 Chilled Water Expansion Project, USDA Western Human Nutrition Research Center, and the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities) and projects currently in environmental review (Genome and Biomedical Sciences Facility, the Hotel/Conference Center and University Relations Building, and the Activities and Recreation Center, the Sciences Laboratory Building, Primate Center Improvements and the Veterinary Medicine Facilities Improvement Project) if approved and constructed, would add another 1,801 persons to the campus. It is not anticipated that operation of the proposed facility and the addition of up to ~~131-135~~ people would result in a significant increase in demand over that which currently exists nor affect the ability of the campus Police Department to provide adequate service. Assuming a total increase of 1,932~~6~~ persons over the 1998-99 campus population for a total campus population of 34,914~~8~~, with 29.5 sworn officers, the ratio of officers would decrease only slightly to 0.84 officers per 1,000 students, faculty, and staff. This ratio would still exceed the campus standard. With continued compliance with 1994 LRDP EIR Mitigation Measure 4.12-3, the proposed project would not result in new impacts relating to police protection other than those previously identified in the 1994 LRDP EIR. Therefore, significant police service impacts would be mitigated to a less-than-significant level through incorporation of mitigation measures adopted as part of the 1994 LRDP EIR and no further mitigation is required.

The 1994 LRDP EIR, as amended, concluded that cumulative growth under the 1994 LRDP could result in decreased level of service from City of Davis police protection services (Impact 4.12-5). This cumulative impact was considered significant and unavoidable because implementation of 1994 LRDP EIR Mitigation Measure 4.12-5(b) is not within the University's jurisdiction to enforce and monitor. The proposed project would contribute to but not exceed growth 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 EIR, as amended.

- (iii, iv) The increase in permanent campus population of ~~131 435~~ people is within the population projections evaluated in the 1994 LRDP EIR for schools and parks (see Section IV, Consistency With The 1994 LRDP EIR). These impacts were determined to be less than significant in the 1994 LRDP EIR. Therefore, the addition of ~~131 435~~ new campus employees would be a less-than-significant impact and no mitigation is required.

The 1994 LRDP EIR, as amended, 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). This cumulative impact was considered significant and unavoidable because implementation of 1994 LRDP EIR Mitigation Measure 4.13-5 is not within the University's jurisdiction to enforce and monitor. The proposed project would contribute to, but not exceed population projections identified under the 1994 LRDP and for the City of Davis, which could contribute to over-enrollment in school district schools. 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.

In addition, the 1994 LRDP EIR, as amended, concluded that cumulative buildout in the Davis area would increase demand for parks and recreational facilities. 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 not exceed demand for parks and recreational facilities associated with buildout of the 1994 LRDP because it is consistent with approved development.

- (v) The proposed project would not result in a need for new or altered maintenance or public services over that identified in the 1994 LRDP EIR because both population and square footage of the proposed facilities are within the projections of the 1994 LRDP. The impact would be considered less than significant and no mitigation is required.
- b) Standards of significance for public services impacts that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for public services. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR. Furthermore, the proposed project would not result in any new project-level or cumulative impacts related to public services that were not previously analyzed in the 1994 LRDP EIR.

15. RECREATION

Cumulative impacts of campus growth through 2005-06 on recreational facilities are addressed in Section 4.13 of the 1994 LRDP EIR.

Background

The campus contains many park-like areas including: landscaped open space between buildings; the Quad and Arboretum Waterway on the Central Campus; and the Putah Creek Reserve on the West Campus. Recreational facilities on campus include structures and fields used for physical education, intercollegiate athletics, intramural sports, sports clubs, and general recreation.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR considered an impact to recreation to be 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

No significant recreation impacts were identified in the 1994 LRDP EIR, or subsequent documents.

	Potentially Significant Impact	Less-than-significant with Mitigation Incorporated	Impact for which LRDP/ Program EIR is Sufficient	Less-than-significant Impact	No Impact
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?			X		
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?					X
c) Exceed an applicable LRDP or Program EIR standard of significance?			X		

Discussion

- a) The proposed project would add approximately ~~131~~ ~~435~~ new employees to the campus. This increase in campus population would not result in a significant increase in 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. In addition, the proposed project is included in the growth projections of the 1994 LRDP. The population increase associated with the proposed project would incrementally contribute to but would not exceed the impact on recreational facilities previously identified in 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 project population growth under the 1994 LRDP. Since adoption of the 1994 LRDP, the campus has constructed the new Dairy Road Recreation Fields to meet increased demand for recreation uses. Therefore, the impact of the proposed project on recreational facilities would be less than significant, and no mitigation is required.

The 1994 LRDP EIR, as amended, 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 not exceed demand for parks and recreational facilities associated with buildout of the 1994 LRDP because it is consistent with approved development.

- b) The proposed project does not include recreational facilities, nor does it require the construction of new recreational facilities. Therefore, the proposed project would have no impact.
- c) Standards of significance for impacts to recreational facilities that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. These standards are consistent with the questions in the checklist for recreation. Based on the discussion presented above, the proposed project does not exceed standards of significance in the 1994 LRDP EIR and would not result in any new impacts related to recreational facilities that were not previously analyzed in the 1994 LRDP EIR.

16. UTILITIES AND SERVICE SYSTEMS

Cumulative impacts of campus growth through 2005-06 on utilities and service systems are addressed in Sections 4.14 and 4.15 of the 1994 LRDP EIR; Chapter 8 of the 1997-98 Major Capital Improvement Projects SEIR; Item 12 of the Center for the Arts Tiered Initial Study and Mitigated Negative Declaration; and Item 13 of the USDA WHNRC Tiered Initial Study and Negative Declaration; and Item 16 of the Genome and Biomedical Sciences Facility Draft Tiered Initial Study.

Background

Campus utilities and service systems, which will be used by the project include electricity, natural gas, telecommunications, wastewater, storm drainage, domestic and utility water, and solid waste which are summarized below.

Electricity – To accommodate anticipated demand for electricity from buildout of the 1994 LRDP, the campus is in the process of implementing the Electrical Improvements Phase 2B project, which includes improvements to the existing network to improve system reliability and provide sufficient capacity to meet the electrical needs of recently completed facilities and anticipated new campus development that is expected to occur. Phase 2B includes installation of a new power transformer, circuit switch, circuit breaker switchgear, duct bank, and feeder cables to increase capacity; recabling of overhead power distribution lines and installation of underground feeder cables to improve distribution; and removal of a substation that will be obsolete in 2000 (UC Davis 1998b; UC Davis Facility Services). Phase 2B improvements will be completed by 2002.

Natural gas – Natural gas is purchased from outside vendors and provided to the campus through PG&E pipelines. Natural gas is provided to four locations on campus: the Central Plant, the Primate Center Plant, the Co-generation Plant, and the Master Meter #1. PG&E is in the process of upgrading its system. Upgrades are expected to be completed by 2002.

Telecommunications – The campus installed its current telecommunications system in 1987. The main switching facility is located in the Telecommunications Building, east of the Central Heating and Cooling Plant. All voice and data switching equipment and network infrastructure facilities are owned and operated by the campus (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. The University has just approved a project that would upgrade telecommunications throughout the campus including the communication cable under Hopkins Road.

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 campus has recently finished building a new WWTP to replace the older plant. The new WWTP is more reliable to operate than the outdated treatment system and has a permitted capacity of 2.7 ~~or 2.8~~ mgd.

Storm drainage – Please see the discussion under Item 9 of this checklist titled Hydrology and Water Quality.

Domestic and utility water – Domestic water is supplied by the campus domestic/fire water system for which the deep aquifer is the source. Utility water, which is used for landscape irrigation, is supplied by the shallow/intermediate aquifer. See the discussion under Item 9 of this checklist titled Hydrology and Water Quality for a description of the deep and shallow/intermediate aquifers. The current capacity of the campus domestic water supply reservoir and wells is 8,810 gallons per minute (gpm). Total demand at buildout of the 1994 LRDP is estimated to be 8,000 gpm. The current capacity of the campus utility water distribution system is approximately 5,045 gpm. Total demand at buildout of the 1994 LRDP is estimated to be 5,700 gpm.

Chilled water and steam – The Central Heating and Cooling Plant produces steam to provide heat and chilled water to buildings in the Central Campus. Chilled water and steam are not provided to the West Campus. If chilled water is needed by the project it will be produced on site. A natural gas-fired generator included in the project will produce steam for the project on site.

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 per day of solid waste. Solid waste is disposed of at the Campus Landfill Waste Management Unit 1, which will close in 2001. The daily permitted capacity of the landfill is 500 tons. Permits are in place for an expansion to operate Waste Management Unit 2 which would be operational in 2001, when Waste Management Unit 1 is expected to close, and has an anticipated life to 2030.

1994 LRDP EIR Standards of Significance

The environmental analysis in the 1994 LRDP EIR, as amended by the 1997-98 Major Capital Improvement Projects SEIR, considered an impact to utilities and service systems to be 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;
- 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

Significant impacts identified in the 1994 LRDP EIR that are relevant to the proposed project are presented in the following table. Potential impacts to the deep and shallow/intermediate aquifer are addressed under Item 9 of this checklist titled Hydrology and Water Quality. The level of significance before and after application of mitigation measures identified in these documents is also presented in this table. The proposed project is within the scope of the analysis in the 1994 LRDP EIR as updated in subsequent documents, and there are no changed circumstances since the preparation of these documents that require reanalysis of the cumulative impacts. It should be noted that cumulative regional Impact 4.14-11 included mitigation measures to reduce the impact to a less-than-significant level. However, these impacts were identified as significant and unavoidable because the capacity of the deep aquifer could not be established.

LRDP EIR IMPACT	Level of Significance Prior to Mitigation	Level of Significance After/With Mitigation
4.14-1 Development allowed under the 1994 LRDP would directly increase the demand for water supplied from the deep aquifer.	SU	SU
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
4.14-11 Cumulative development allowed under the 1994 LRDP would result in increased demand for water from the deep aquifer.	SU	SU

S = significant; LS = less-than-significant; SU = significant unavoidable

Mitigation measures in the 1994 LRDP EIR and the 1997-98 Major Capital Improvement Projects SEIR that are applicable to the proposed project and that will be required as part of project implementation include the following:

- **LRDP EIR Mitigation Measure 4.14-1(a)** – *The campus shall ensure that each project is designed to include the following domestic water conservation measures:*
 - (i) *low-flow shower heads (2 gpm or less) shall be installed in all new showers*

(ii) *Toilets with low-water-use flush devices (with average savings of one gallon per flush) shall be installed in all new facilities and all existing facilities should be retrofitted at a pace at least equal to new development.*

- **LRDP EIR Mitigation Measure 4.14-1(b)** – *The campus shall review the feasibility of replacing single-pass cooling systems with the use of treated wastewater for cooling purposes.*
- **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 under Item 9.

- **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.

	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?					X

	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?	X				
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?	X				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X				
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	X				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X		
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?					X
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?	X				
i) Require or result in the construction of new telecommunication facilities, the construction of which would cause significant environmental effects?	X				

	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?	X				

Discussion

a) JAX West would discharge wastewater into the campus sanitary sewer system. Pursuant to 1994 LRDP Mitigation Measure 4.6-24, the campus has established a pre-treatment program that places limits on discharges to the sanitary sewer system. JAX West would be required to pre-treat the discharge from its laboratories. This would ensure that inappropriate materials are not discharged to the sanitary sewer system and the campus wastewater plant's treatment requirements will not be exceeded.

b, e) Wastewater

Wastewater collection and treatment is provided by the campus wastewater treatment plant. The existing campus wastewater system is described at the beginning of this Utilities and Service Systems section. The proposed project would result in a maximum addition of approximately ~~57,000~~ ~~45,206~~ gallons per day (gpd) of flow. The new WWTP has been constructed and is operational and would have sufficient capacity to meet the demands of the proposed project. The proposed facility would be connected to the existing system via a connection under Hopkins Road.

The campus has not evaluated the capacity of the wastewater collection system. Present information is insufficient to determine whether the collection system can handle project flows. Further analysis will be presented in the Draft Focused Tiered EIR for this project. For a discussion on impacts to water service, see Item (d) below.

c) As described under Item 9e in Hydrology and Water Quality, the capacity of the existing storm drainage system will be evaluated consistent with 1994 LRDP EIR Mitigation Measure 4.8-2(a). That analysis will be presented in the Draft Focused Tiered EIR for this project.

d) Domestic Water

As described above, the current capacity of the campus domestic water supply reservoir and wells is 8,810 gpm. Total demand at buildout of the 1994 LRDP is estimated to be 8,000 gpm (including the demand generated by the proposed project).

~~Peak flow demands for the project have not been determined. Points of connection to the system are under design.~~ Further information and analysis of this issue ~~is will be~~ provided in the Draft Focused Tiered EIR for this project.

Utility Water

There is no utility water service to the West Campus. Domestic water would be used to irrigate landscaping on site. There would be no impact to the utility water system.

Chilled Water and Steam

As described at the beginning of this checklist item, the Central Heating and Cooling Plant produces steam to provide heat and chilled water for heating and cooling to buildings in the Central Campus (including the project area) but does not serve the West Campus. Project autoclaves would use steam, but this would be produced with a natural gas-fired generator on site. Chilled water would be produced at the project site using an electric chiller. There will be no impact to campus distribution systems or capacities for chilled water and steam.

- f, g) Operation of the proposed JAX West would generate non-hazardous solid waste for disposal at the campus landfill, which would result in an increase in solid waste over existing conditions.

As described above, UC Davis operates a Class III sanitary landfill and provides solid waste collection and disposal services for the campus. Currently, campus waste generation is substantially below the landfill's daily permitted capacity. As discussed on page 4-2 of the 1994 LRDP FEIR, the campus landfill has sufficient capacity to accommodate the increased quantity of solid waste generated by implementation of the 1994 LRDP, regardless of the closure date for Waste Management Unit 1. This assumes an annual growth rate of 1.8 percent, which represents approximately 60 tons per day of solid waste. The proposed project would generate a little over 3 tons of solid waste per month. This would not exceed the permitted capacity nor would it exceed 1994 LRDP solid waste projections, because the proposed project falls within the assumptions contained in the 1994 LRDP and LRDP EIR. Therefore, the campus landfill has the capacity to accommodate solid waste generated by the proposed project, and impacts would be less-than-significant. No additional mitigation is required.

The 1994 LRDP EIR, as amended, 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 the buildout of the 1994 LRDP because it is consistent with approved development. The project would comply with applicable regulations related to solid waste.

- h) **Electricity**

As described at the beginning of this checklist item, the campus is in the process of implementing the Electrical Improvements Phase 2B project. Phase 2B improvements would be completed by Fall 2002 (UC Davis 1999c). The proposed project would comply with the standards of Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards of the California Code of Regulations. As stated on page 4.15-2 of the 1994 LRDP DEIR, all new buildings constructed in California must comply with Titles 20 and 24, and it is a policy of the University of California to comply with these regulations.

~~The electrical demands of the project are currently under design, therefore, precise electrical demand has not been determined at this time.~~ The proposed project would be operational no sooner than February 2002, possibly before the planned completion of the Phase 2B improvements. ~~Present information is insufficient to determine whether the proposed project will result in demands in excess of current capacity.~~ Further analysis is ~~will be~~ included in the Draft Focused Tiered EIR for this project.

Natural Gas

Natural gas would be supplied to the proposed project site via a campus low-pressure system. ~~Present information is insufficient to determine whether the proposed project will result in demands for natural gas in excess of current capacity.~~ Further analysis ~~is will be~~ included in the Draft Focused Tiered EIR for this project.

The 1994 LRDP EIR, as amended, concluded that buildout under the 1994 LRDP and in the PG&E and WAPA service areas would increase the demand for the use of electricity, natural gas and related infrastructure. These cumulative impacts were considered less-than-significant because the City and the campus have established policies to comply with state standards for energy conservation. In addition, PG&E and WAPA will continue to provide service. Although it is consistent with approved development associated with buildout of the 1994 LRDP, the proposed project would contribute to, and could exceed demand for electricity and natural gas on the South Campus if the project becomes operational before anticipated upgrades in the electrical and natural gas supply systems. This issue ~~is will be~~ addressed in ~~a-the Draft #F~~ocused ~~€T~~iered EIR for this project.

- i) The main telecommunications switching facility on the Davis campus is located in the Telecommunications Building, east of the Central Heating and Cooling Plant. The 1997-98 Major Capital Improvement Projects SEIR identified a mitigation measure to determine if existing points of connection have adequate capacity to accommodate the proposed project.

Consistent with 1997-98 Major Capital Improvement Projects SEIR Mitigation Measure 4.3-12, the campus will evaluate the nearest point of connection and determine whether improvements to the Network Operations Center (NOC) as well as relocation and upgrade of distribution systems would be required for the proposed project. Local connections to the campus-wide distribution system could require some off-site trenching. The environmental impacts associated with improvements to the campus telecommunications system to serve the facility ~~are will be~~ evaluated in the ~~Draft~~ Focused Tiered EIR for this project.

- j) Standards of significance for impacts to utilities and infrastructure that were used in preparation of the 1994 LRDP EIR are presented at the beginning of this checklist item of the Tiered Initial Study. Based on the discussion presented above (Items a, b, c, d, e, h, I), adequate information ~~was is currently~~ not available ~~initially~~ to fully evaluate project impacts on utilities and service systems. As a result, the standards of significance in the 1994 LRDP EIR could be exceeded and the project could result in project-specific impacts not previously identified in the 1994 LRDP EIR. These impacts ~~are will be~~ further evaluated in the Focused Tiered EIR for this project.

17. 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
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	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?			X		
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)?			X		
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X		

Discussion

- a) The proposed project would not eliminate examples of California prehistory or history, nor would it result in significant impacts on wildlife.
- b) The proposed project could contribute to, but would not exceed, significant cumulative regional impacts identified under the 1994 LRDP EIR. Some of these cumulative impacts are significant and unavoidable because there is no feasible mitigation measure or because the mitigation measures to reduce these potential significant impacts to a less-than-significant level are not within the jurisdiction of the University of California to enforce and monitor and, the potential impacts would therefore remain significant and unavoidable. These cumulative 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 approval of the 1994 LRDP EIR, as amended.

- c) The proposed project would not result in environmental impacts that could directly or indirectly adversely affect human beings.

18. FISH AND GAME DETERMINATION

Based on the information above, the project has a potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends. Therefore, a filing fee will be paid.

Certificate of Fee Exemption

Pay fee

VIII. REFERENCES

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