

**CUMULATIVE IMPACTS ANALYSIS**  
**FOCUS ON POTENTIAL ENVIRONMENTAL EFFECTS ASSOCIATED WITH**  
**PROJECTED STUDENT ENROLLMENT INCREASES THROUGH 2014-15**

**Introduction**

Background

The University of California (the University) currently anticipates that enrollment throughout the University system will increase by approximately 60,000 to 70,000 students within the next 10 to 15 years. This growth in enrollment is related to projected demographic changes that are expected to increase the demand for a college education in California. UC Davis is currently considering how it should plan to accommodate the enrollment growth that the University President has identified as UC Davis' share of the University's projected growth. This growth is anticipated to bring the three-quarter average on-campus student population to approximately 29,500 by 2014-15. The UC Davis 1994 Long Range Development Plan (1994 LRDP) already assumed 26,000 of these students. This anticipated enrollment growth and associated increase in employees and facility construction for 2014-15 would extend beyond the assumptions identified in the 1994 LRDP for 2005-06 and evaluated in the 1994 LRDP Environmental Impact Report (EIR). The UC Davis campus (the campus) will prepare a revised LRDP to identify the changes required to accommodate anticipated growth, and the campus will prepare an EIR to assess the environmental impacts of such changes. It is anticipated that The Board of Regents of the University of California (The Regents) will review and consider approval of the LRDP and its EIR in the fall of 2003.

The 1994 LRDP, as amended<sup>1</sup>, proposed general types of physical development and designated land use categories to support campus growth projected through 2005-06. The 1994 LRDP EIR, as updated and revised<sup>2</sup>, analyzed the environmental effects associated with full implementation of uses and physical development proposed under the 1994 LRDP, and it identified measures to mitigate associated environmental impacts (1994 LRDP EIR impacts and mitigation measures are presented in Table 1 in Appendix C - Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR). The campus expects to adopt a new LRDP before population and facility growth projections assumed in the 1994 LRDP are exceeded. In addition, the campus concludes that because development and the effects associated with campus population growth

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1 The 1994 LRDP has been amended upon approval of subsequent projects (and associated certification of EIRs and adoption of Mitigated Negative Declarations) that required land use designation changes, objective revisions, or changes in the campus land inventory to maintain conformity with the 1994 LRDP. Amendments to the 1994 LRDP were identified in the 1997 Wastewater Treatment Plant (WWTP) Replacement Project EIR (State Clearinghouse Nos. 95123027 and 96072024), the 1997-98 Major Capital Improvement Projects Supplemental EIR (SEIR) (State Clearinghouse No. 97122016), the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 98092016), the USDA Western Human Nutrition Research Complex Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 99092060), the Segundo Housing Improvement Projects Tiered Initial Study and Mitigated Negative Declaration (State Clearinghouse No. 2001092063), and the Conference Center, Hotel, and Graduate School of Management Building Focused Tiered EIR (State Clearinghouse No. 2001082067). Hereafter, reference to the 1994 LRDP includes the 1994 LRDP as amended. The UC Davis Environmental Planning and Review website offers further information about subsequent amendments to the 1994 LRDP at <http://www.ormp.ucdavis.edu/environreview/>.

2 The 1994 LRDP EIR has been updated and revised upon approval of subsequent projects (and certification of associated EIRs and adoption of associated Mitigated Negative Declarations) that required changes to impacts and/or mitigation measures, and when new analyses presented in certified EIRs or adopted Mitigated Negative Declarations changed analyses presented in the 1994 LRDP EIR. Updates and revisions to the 1994 LRDP EIR were identified in the documents listed above in footnote #1, as well as in the Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR (State Clearinghouse No. 2000022057). Hereafter, reference to the 1994 LRDP EIR includes the 1994 LRDP as updated and revised. The UC Davis Environmental Planning and Review website offers further information about subsequent updates and revisions to the 1994 LRDP EIR at <http://www.ormp.ucdavis.edu/environreview/>.

through 2005-06 will be within the parameters assumed in the 1994 LRDP, the cumulative impacts of growth through 2005-06 have been adequately addressed in the 1994 LRDP EIR.

To the extent that growth and physical development anticipated for 2014-15 were not considered in the 1994 LRDP EIR, additional environmental effects that were not previously identified may occur. However, it would be very speculative to determine these effects now because most components of the next LRDP are not currently known. Nevertheless, this analysis serves to inform the public concerning all that is currently known about the campus' potential growth through 2014-15. For purposes of the analysis, the campus anticipates that through 2014-15, the student population would exceed projections in the 1994 LRDP for 2005-06 by 3,500. Based on this enrollment growth, the campus estimates that the faculty and staff population in 2014-15 would exceed 1994 LRDP projections for 2005-06 by 1,510, and construction of academic and administrative assignable square feet (asf) would exceed 1994 LRDP projections by 1,269,600 asf.

#### Adequacy of 1994 LRDP EIR through 2005-06

The University of California's General Campus Budgeted Full Time Equivalent (FTE) Enrollment Growth through 2010-11 projects that the Davis campus' FTE student enrollment, including growth in summer enrollment, will increase by 2,300 from 2001-02 through 2005-06. The campus, assuming enrollment will continue to be considerably higher during the fall, winter and spring quarters than during summer sessions, translated this to a growth in the on-campus three-quarter average student headcount of approximately 2,640. The most recent verified average annual student headcount was approximately 22,890 for the three regular academic quarters of 1999-00. The campus estimates that the student population has increased at a rate of approximately 1,000 students per year from 1999-00 through 2001-02. Therefore, as shown in Table 1, the campus' student population could increase by 4,640 from 1999-00 through 2005-06 to a total of 27,530 students, which would exceed projections in the 1994 LRDP by 1,530 students.

Given the growth in the three-quarter average student headcount estimated from 1999-00 through 2005-06 (4,640), and based on projected ratios of 1 faculty member to 18.7 students and 6 staff employees to each 1 faculty member, the total campus faculty and staff population would increase by approximately 1,740 employees from 2001-02 through 2005-06. As shown in Table 1, the faculty and staff population in 2005-06 would be approximately 11,630, which is 1,000 people less than the faculty and staff population projected for 2005-06 in the 1994 LRDP.

Based on the student and staff projections summarized in Table 1, the campus estimates that the total campus population (including students, faculty, and staff) could grow to approximately 39,160 through 2005-06. This would be 530 more than the total campus population projected for 2005-06 in the 1994 LRDP.

**Table 1. On-Campus Population Growth through 2005-06  
(Based on University of California's General Campus Budgeted  
Full Time Equivalent Enrollment Growth) <sup>1</sup>**

<b>Program</b>	<b>Student Population</b>	<b>Faculty &amp; Staff Population<sup>2</sup></b>	<b>Total Population</b>
1999-00 (Actual)	22,890	9,890	32,780
Anticipated Growth from 1999-00 to 2005-06	4,640	1,740	6,380
2005-06 (Estimate)	27,530	11,630	39,160
2005-06 (Projected in 1994 LRDP)	26,000	12,630	38,630
Growth Anticipated for 2005-06 Compared to 1994 LRDP Projections	+ 1,530	(1,000)	+ 530

<sup>1</sup> Population identified as three-quarter average headcount.

<sup>2</sup> Excluding student staff.

The future faculty and staff population can also be estimated based on employee growth associated with proposed campus projects. Table 2 presents the reasonably foreseeable projects that the campus currently anticipates will be constructed before the end of the 2005-06 academic year. As indicated in the table, the campus anticipates that the faculty and staff population may increase to approximately 11,700 through 2005-06, which is 930 under the faculty and staff population anticipated in the 1994 LRDP. However, the projection of 11,700 faculty and staff is likely high because projects constructed after 2004 would probably not be fully occupied by the end of the 2005-06 academic year, and/or space vacated to occupy the proposed projects would probably not be fully backfilled. The faculty and staff population estimated based on employee growth associated with proposed campus projects (less than 11,700 due to less than full occupancy by 2005-06) is comparable to that estimated based on the University of California's General Campus Budgeted Enrollment Growth (11,630, presented in Table 1).

Assuming the proposed projects identified in Table 2 adequately reflect growth through 2005-06, the academic and administrative assignable square feet (asf) on campus would increase to 6,084,175 asf, which is 411,575 asf under the academic and administrative space projected in the 1994 LRDP for 2005-06.

**Table 2. Estimated Campus Growth through 2005-06 Based on Proposed Projects**

<b>Program</b>	<b>Academic and Administrative asf</b>	<b>Faculty/Staff Growth</b>	<b>Anticipated Dates of Approval/Occupation</b>
Built and Approved Projects (December, 2001)	5,772,350	10,860	As of Dec. 2001/ By June 2003
Conference Center, Hotel, and Graduate School of Management	110,000	375	March 2001/ March 2004
Veterinary Medicine Instructional Facility	37,690	5	July 2002/ January 2005
Mathematical Sciences Building	38,000	80	July 2002/ January 2005
Watershed Sciences Research Center	11,135	40	September 2002/ March 2005
Robert Mondavi Institute	115,000	190	January 2003/ July 2005
Campus Childcare Center	N/A	20	July 2002/ January 2005
Tercero Student Housing Infill	N/A	65	May 2002/ November 2004
Greenhouse Student Housing	N/A	65	September 2002/ March 2005
Total Estimated through 2005-06 <sup>1</sup>	6,084,175	11,700 <sup>2</sup>	2005-06
1994 LRDP	6,495,750	12,630	2005-06
Growth Anticipated for 2005-06 Compared to 1994 LRDP Projections	(411,575)	(930)	2005-06

<sup>1</sup> The total growth estimated through 2005-06 does not include growth associated with the UC Davis South Campus Research Park project. The campus has completed a Request for Qualifications process for this project and is currently evaluating proposals from developers. The campus has the right to not to go forward with the project, to not select a developer from those who have submitted proposals, or to change developers for a nominal fee. The project selected, if one is, may be within the envelope of growth analyzed for the Research Park in the 1997-98 Major Capital Improvement Projects Supplemental EIR. In any event, the project would not be foreseeable until a Master Plan for the project has been approved by the campus.

<sup>2</sup> This number is likely high because projects constructed after 2004 would probably not be fully occupied by the end of the 2005-06 academic year, and/or space vacated to occupy the proposed projects would probably not be fully backfilled.

The 1994 LRDP EIR would remain a valid basis for the analysis of cumulative effects associated with campus growth through 2005-06. The campus is not expected to exceed physical development analyzed in the 1994 LRDP EIR (as shown by the academic and administrative asf projections identified in Table 2). Many environmental impacts associated with campus growth are related more to physical development than to population growth, and the campus estimates that it will construct approximately 6 percent less building space by 2005-06 than previously assumed in the 1994 LRDP. Environmental impacts that are evaluated on the basis of physical development rather than population growth include: loss of prime agricultural land, temporary noise and air quality effects of construction, increased hazardous materials use, exposure to contaminated sites during construction, loss of habitat, reduction of receiving water quality, reduction of groundwater recharge, demand for water, loss of cultural resources, alteration of rural character, and demand for fire protection.

Estimated growth through 2005-06 could result in a total on-campus population that could exceed projections in the 1994 LRDP EIR by approximately 530 to 600 people, a difference that is approximately 1.5 percent of the total population projected for 2005-06 in the 1994 LRDP (38,630). Although the campus student population is anticipated to exceed 1994 LRDP projections by approximately 1,530 people, the faculty/staff population would be under 1994 LRDP projections by approximately 930 to 1,000. This future campus population composition is not expected to exceed population-related impacts identified in the 1994 LRDP EIR because individual faculty and staff generate more environmental impacts than do students. For instance, faculty and staff are approximately 40 percent more likely to arrive on campus by private automobile than students are (students are much more likely to bike, walk, or take public transit), and therefore faculty and staff create more traffic and more associated air quality and noise impacts<sup>3</sup>. Because students tend to reside in denser housing situations than staff (more individuals per housing unit), they create less demand for housing even though a higher percentage of students than faculty and staff live in the City of Davis. Faculty and staff are more likely than students to bring spouses and dependents to the Davis area, thereby increasing demand for local public services and utilities, and increasing exposure of individuals in the region to poor air quality and ground motion. Therefore, the campus population anticipated for 2005-06 would not have more (and would perhaps even have fewer) associated impacts than the campus population addressed in the 1994 LRDP EIR.

The campus concludes that because development and the environmental effects associated with campus population growth will be within the parameters assumed in the 1994 LRDP for 2005-06, the cumulative impacts of campus growth through 2005-06 have been adequately addressed in the 1994 LRDP EIR.

#### Anticipated Campus Growth through 2014-15

As presented in Table 3, the campus anticipates that through 2014-15, the student population would exceed projections in the 1994 LRDP for 2005-06 by 3,500. Based on this enrollment growth, the campus estimates that the faculty and staff population in 2014-15 would exceed 1994 LRDP projections for 2005-06 by 1,510, and new academic and administrative space would exceed 1994 LRDP projections by 1,269,600 asf.

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<sup>3</sup> UC Davis Transportation and Parking Services. 1997. Mode Split.

**Table 3. On-Campus Population Growth through 2014-15<sup>1</sup>**

Program	Student Population	Faculty & Staff Population <sup>2</sup>	Total Population	Academic and Administrative asf <sup>3</sup>
1999-00 (Actual)	22,890	9,890	32,780	5,250,510
Anticipated Growth from 1999-00 to 2014-15	6,610	4,250 <sup>4</sup>	10,860	2,514,840
2014-15 (Estimate)	29,500	14,140	43,640	7,765,350
2005-06 (Projected in 1994 LRDP)	26,000	12,630	38,630	6,495,750
Growth Anticipated for 2014-15 Beyond 1994 LRDP Projections	3,500	1,510	5,010	1,269,600

<sup>1</sup> Population identified as three-quarter average headcount.

<sup>2</sup> Excluding student staff.

<sup>3</sup> Built and Approved as of 1999-00.

<sup>4</sup> Includes approximately 2,500 general faculty and staff and approximately 1,700 employees associated with enterprise and other research growth.

As shown in Table 3, the campus has initially projected growth in the campus population and in academic/administrative space through 2014-15. In addition, as identified in the list below, the campus has anticipated general types and approximate quantities of development that could accommodate this projected growth through 2014-15. The list below identifies on-campus growth assumptions through 2014-15 in comparison to assumptions through 2005-06 that were provided in the 1994 LRDP and analyzed in the 1994 LRDP EIR.

- The campus population through 2014-15 is anticipated to exceed 1994 LRDP projections for 2005-06 by 5,010 people.
- The campus anticipates that it would construct approximately 1,269,600 asf of academic/administrative space by 2014-15 over the development assumed in the 1994 LRDP for 2005-06. The majority of this development is expected to be infill within existing developed areas.
- To continue to meet the campus objective to provide housing for approximately 25 percent of the student enrollment, new on-campus student housing constructed through 2014-15 would exceed the housing assumed in the 1994 LRDP for 2005-06 by approximately 1,000 beds. This new housing is anticipated to infill existing housing areas.

- The 66 acres of enterprise areas that were previously assumed in the 1994 LRDP and analyzed in the 1997-98 Major Capital Improvements Project Supplemental EIR would be developed.
- Approximately 50 acres would be developed to support the dairy complex, which the campus expects to relocate outside the core campus.
- General expansions of campus facility support services and a new corporation yard and facilities services area would be required to accommodate expected growth. The campus anticipates that development through 2014-15 for support services would exceed support services development assumed in the 1994 LRDP by 15 acres.
- The campus anticipates that through 2014-15, it will exceed the development of new and replacement recreation fields assumed in the 1994 LRDP by approximately 15 acres.
- Consistent with current 1994 LRDP EIR mitigation measures, the campus would retain land as habitat to replace habitat loss associated with campus development through 2014-15.
- New parking and roadway improvements would be required to accommodate campus growth through 2014-15.

Although the location of the anticipated development listed above is not currently known, for the purposes of this analysis, development of approximately 220 acres is estimated at areas not previously identified for development in the 1994 LRDP.

#### Unknown Planning Variables

Because an extensive long range planning process (currently underway) will be required to identify specific strategies for accommodating anticipated campus growth, many variables related to the future physical development of the campus are unknown at this time. Because the analysis of associated environmental effects would be speculative, unknown variables are not included in this analysis of cumulative environmental effects. Primary unknown variables for accommodating campus growth through 2014-15 are described below.

- The locations of the anticipated land uses listed above are currently unknown. In addition, the extent of the assumed development discussed above is provisional and is subject to change.
- Due to City of Davis growth constraints, the campus is evaluating the concept of a University neighborhood located on or adjacent to the campus to maintain the current percentages of the campus population that live in the Davis/campus area. Such a neighborhood might house approximately 4,100 students and 1,100 faculty and staff.
- The campus is evaluating the possibility of expanding the enterprise areas previously assumed in the 1994 LRDP by approximately 50 acres. If this were to occur, additional building space and population growth would result.
- If a University neighborhood were constructed or enterprise areas were expanded, the campus would most likely be required to replace teaching/research fields and habitat areas lost by development and expand recreation and support service areas to serve new development.

- If a University neighborhood were constructed, members of the campus population who could not be housed in the City of Davis could be accommodated on or adjacent to the campus (as opposed to within other communities in the region). This would reduce commuter trips, requiring less parking and roadway improvements.

### Approach

It is currently impossible to know how the next LRDP will plan to accommodate the new student enrollment identified by the University for the Davis campus. There are many variables that will affect this decision, and a planning process is currently underway that will address all of these factors. The concepts and specifics of the next LRDP may vary significantly from the projections provided in this analysis. Nevertheless, the campus has prepared this analysis to disclose, as best it can at this time, the potential cumulative environmental impacts of potential campus expansion beyond the parameters of the 1994 LRDP.

The campus has closely examined each of the significant and unavoidable impacts identified in the 1994 LRDP EIR that would continue through 2014-15 and concludes that there are currently no new feasible mitigation measures different from those identified in the 1994 LRDP EIR to reduce these impacts to less-than-significant levels. Based on current preliminary knowledge regarding anticipated growth, the campus does not anticipate that growth through 2014-15 would create any new significant cumulative impacts other than those previously identified in the 1994 LRDP EIR, and the 1994 LRDP EIR is considered a valid basis for analysis of the cumulative environmental impacts of individual campus projects.

Cumulative environmental impacts occur when two or more individual effects together create a considerable impact or compound or increase impacts. The 1994 LRDP EIR considered a "cumulative impact" an impact that could result from campus growth under the 1994 LRDP in conjunction with other growth in the region. The 1994 LRDP EIR also identified impacts that result from the combined effects of on-campus growth allowed under the 1994 LRDP. Both regional-plus-campus and campus-level cumulative environmental impacts are evaluated in this analysis and are viewed in the context of past, present, and reasonably foreseeable future growth. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

In the following sections, the campus has evaluated the cumulative environmental impacts associated with growth anticipated from 2005-06 through 2014-15 assuming the anticipated development discussed above. Cumulative environmental effects associated with the unknown planning variables identified above are too speculative to address at this time and are not considered in this analysis. The next campus LRDP will present a strategy for campus development through 2014-15. A new LRDP EIR will fully evaluate the potential environmental impacts associated with the components of the next LRDP, and new standards of significance, new impacts, and additional alternatives and mitigation measures may be identified at that time. The next LRDP and LRDP EIR will supersede any assumptions, impacts analysis, conclusions, and mitigation measures provided in this analysis.

### Organization

This analysis evaluates the possible cumulative environmental effects of identifiable anticipated development through 2014-15 for the following resource areas: 1) land use and planning, 2) agricultural resources, 3) population and housing, 4) transportation/circulation, 5) noise, 6) air

quality, 7) hazards and hazardous materials, 8) biological resources, 9) hydrology and water quality, 10) geology and soils, 11) mineral resources, 12) cultural resources, 13) aesthetics, 14) public services, 15) recreation, and 16) utilities, energy, and service systems.

These resource discussions include the following:

- background discussion of the context of the 1994 LRDP and the current environmental setting;
- summary of the standards of significance identified in the 1994 LRDP EIR; and
- comparison of the analysis provided in the 1994 LRDP EIR and the regional-plus-campus and campus-level cumulative environmental effects associated with anticipated campus development through 2014-15.

Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

## **Land Use and Planning**

### Background

The 1994 LRDP, as amended,<sup>4</sup> designated land uses on the 5,300 acre UC Davis campus including: Academic and Administrative (High and Low Density); Support; Housing; Physical Education, Intercollegiate Athletics, and Recreation (PE/ICA/Recreation); Teaching and Research Fields; Open Space (Formal, Reserve, and Teaching/Research); Parking; Community Gardens; Commercial; and Enterprise Reserve.

UC Davis is currently in compliance with the 1994 LRDP, as amended, which is the applicable land use plan for the campus. In addition, the campus does not conflict with the General Plans for local jurisdictions, including the City of Davis and the Counties of Solano and Yolo.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on land use and planning were evaluated in Section 4.1 (Land Use) of the 1994 LRDP Draft EIR<sup>4</sup>. Agricultural impacts are currently addressed in the resource section titled "Agricultural Resources." Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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

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

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<sup>4</sup> The 1994 LRDP was amended, and the 1994 LRDP EIR land use and planning analysis was updated, to reflect land use designation changes identified in the WWTP Replacement Project EIR (Chapter 4.6 of the Draft EIR), the 1997-98 Major Capital Improvement Projects SEIR (Sections 5.3, 6.3, and 7.3 of the Draft SEIR), the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration (page 29 of the Initial Study), the USDA Western Human Nutrition Research Complex Tiered Initial Study and Mitigated Negative Declaration (pages 24-25 of the Initial Study), and the Segundo Housing Improvement Projects Tiered Initial Study and Mitigated Negative Declaration (pages 33 to 35). No new significant land use and planning impacts were identified as a result of these changes.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR did not identify any regional-plus-campus cumulative impacts associated with land use and planning. Anticipated growth through 2014-15 is not expected to introduce any new regional-plus-campus cumulative land use and planning impacts or require any new mitigation measures. Although the CEQA Guidelines do not require the campus to consider its consistency with land use plans or policies for other jurisdictions, it is campus policy to comply with the General Plans for the City of Davis and the Counties of Yolo and Solano. The campus assumes it will continue to comply with these General Plans through 2014-15. However, the campus will reexamine potential land use and planning impacts and any new mitigation measures that may be required during the LRDP update process.

### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The campus expects to adopt a new LRDP before projections assumed in the 1994 LRDP are exceeded. The new LRDP will propose general types of physical development and designate land use categories to support campus growth projected through 2014-15. The new LRDP will be the applicable land use plan for the campus.

The 1994 LRDP EIR identified two less-than-significant campus-level cumulative land use and planning impacts: conflict with adjacent uses (Impact 4.1-3), and conflict with local land use plans or policies (Impact 4.1-4). Impact 4.1-3 was considered less-than-significant because future uses bordering other jurisdictions would be similar to existing development, and incompatible on-campus land uses would be separated under the 1994 LRDP. Impact 4.1-4 was considered less-than-significant because, although the University is exempt from land use plans or policies for other jurisdictions, growth under the 1994 LRDP was determined to comply with the General Plans for the City of Davis and the Counties of Yolo and Solano. No mitigation was required. On-campus growth through 2014-15 is not anticipated to introduce incompatible adjacent land uses or any conflicts with plans or policies for other jurisdictions. However, the campus will reexamine potential campus-level cumulative land use and planning impacts and any new mitigation measures that may be required during the LRDP update process.

## **Agricultural Resources**

### Background

The campus includes land designated by the State Department of Conservation as Prime Farmland primarily in the west campus, south campus, Russell Ranch, and a small portion of the central campus. The 1994 LRDP proposed concentration of development in the central campus to preserve the surrounding agricultural lands and to conserve the land resources of the campus.

The 1994 LRDP EIR, as revised<sup>5</sup>, identified that campus growth under the 1994 LRDP could contribute approximately 180 acres to the cumulative urban conversion of approximately 1,207 acres of prime farmland in the region. Of the 180 acres of prime farmland that the 1994 LRDP anticipated would be developed by 2005-06, the campus has converted approximately 39 acres to urban uses through 2000-01. The 2001 City of Davis General Plan Update did not provide for an increase in the conversion of prime farmland in the region over that previously identified in the 1994 LRDP EIR for 2005-06.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on agricultural resources were addressed in Section 4.1 (Land Use) of the 1994 LRDP Draft EIR<sup>6</sup>. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised. The environmental analysis in the 1994 LRDP EIR considered an impact to agricultural resources significant if campus or regional growth would:

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

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR, as revised, concluded that regional-plus-campus cumulative development could convert approximately 1,207 acres of prime agricultural land to urban uses, a significant and unavoidable impact (Impact 4.1-5). The campus anticipates that growth from 2005-06 through 2014-15 could develop a total of approximately 220 acres that were not previously considered for development in the 1994 LRDP. Although the precise location of this future development is currently unknown, the campus conservatively assumes for the purposes of this analysis that all of this development could occur on prime farmland.

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<sup>5</sup> The 1994 LRDP identified the loss of 160 acres of prime farmland, and the Wastewater Treatment Plant Replacement Project EIR identified the loss of an additional 20 acres.

<sup>6</sup> Cumulative impacts on agricultural resources were reevaluated in the WWTP Replacement Project EIR, and agricultural resource impacts were revised to account for a loss of additional prime farmland not previously assessed in the 1994 LRDP EIR (Appendix G of the Final EIR). Both the 1997-98 Major Capital Improvement Projects SEIR and the Center for the Arts Performance Hall and South Entry Roadway and Parking Improvements Tiered Initial Study and Mitigated Negative Declaration identified losses of prime farmland over the amount assessed in the 1994 LRDP. However, these projects included measures to mitigate the impacts on agricultural resources to less-than-significant levels.

Campus growth anticipated through 2014-15 could develop approximately 220 acres of prime farmland that was not previously assumed in the 1994 LRDP. As a result, the cumulative loss of prime farmland identified in 1994 LRDP EIR Impact 4.1-5 would increase, and this impact would remain significant and unavoidable. While the campus has not been able to identify feasible measures to mitigate the permanent conversion of prime farmland to a less-than-significant level, this impact and any related feasible mitigation will be studied as part of the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR, as revised, identified that on-campus development under the 1994 LRDP could result in the permanent loss of 180 acres of prime farmland through 2005-06 (Impact 4.1-1). This impact was considered significant and unavoidable because no feasible mitigation could be identified. As discussed above, for the purposes of this analysis, the campus anticipates that it could develop 220 acres of prime farmland through 2014-15 over that identified in the 1994 LRDP EIR. As a result, this impact would increase and would remain significant and unavoidable. This impact and any related feasible mitigation will be studied as part of the LRDP update process.

## **Population and Housing**

### Background

The population of the campus is the average number of students, faculty, and staff that may be on campus at any given time. For campus planning purposes, the annual on-campus population is approximated based on an average campus population over three academic quarters (fall, winter, and spring). The 1999-00 three-quarter average total campus population was approximately 32,780 (including 22,890 students and 9,890 faculty and staff). The 1994 LRDP assumed the campus population would grow to 38,630 by 2005-06 (including 26,000 students and 12,630 faculty and staff).

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

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on population and housing issues were addressed in Section 4.2 (Population, Employment and Housing) of the 1994 LRDP Draft EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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 City of Davis General Plan.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The campus estimates that the total campus population through 2014-15 could exceed projections in the 1994 LRDP for 2005-06 by approximately 5,010 (including 3,500 students and 2,000 faculty and staff).

According to the 1994 LRDP EIR, buildout of the 1994 LRDP could add approximately 8,000 residents, including students, faculty and staff, and their dependents to the City of Davis by 2005-06. The 1994 LRDP EIR considered campus growth a component of buildout under the 1987 City of Davis General Plan, which projected population in the City of Davis planning area under the City of Davis General Plan would reach 75,000 by 2010. In May 2001, the City updated the 1987 City of Davis General Plan. This General Plan update also anticipates that the population in the City of Davis planning area will reach 75,000 by 2010, and increased enrollment at UC Davis is still assumed to be included in the City's projection. However, due to the limited growth of housing in the City (relative to the region), if the campus did not establish local housing, increases in the campus population would likely need to reside within other communities. Any

people (including those attributed to the campus population) whose housing needs were not met in the City would reside elsewhere. Secondary effects associated with additional commute trips (traffic, noise, and air quality) are evaluated in the other respective resource sections of this analysis.

The 1994 LRDP EIR did not identify any regional-plus-campus cumulative impacts associated with population and housing. While an increase in the campus population through 2014-15 would contribute to the population in the City of Davis, it is not anticipated to result in any new cumulative population and housing impacts or require any new mitigation measures that were not previously identified in the 1994 LRDP EIR. However, the campus will reexamine potential population and housing impacts and any new mitigation measures that may be required during the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified that campus development under the 1994 LRDP could conflict with the population projections or housing policies set forth in the City of Davis General Plan (Impact 4.2-1). This campus-level cumulative impact was considered less-than-significant because, as discussed above, the 1994 LRDP EIR considered campus growth a component of buildout under the 1987 City of Davis General Plan. While on-campus growth through 2014-15 would contribute to the population in the City of Davis, as discussed above, increased enrollment at UC Davis is assumed to be included in the City's population projections, and members of the campus population whose housing needs are not met in the City through 2014-15 would reside elsewhere. Therefore, this impact would likely remain less-than-significant and no mitigation would be required. However, the campus will reexamine potential campus-level cumulative population and housing impacts and any new mitigation measures that may be required during the LRDP update process.

## Transportation and Circulation

### Background

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

Currently, the majority of person trips associated with the campus are made by non-motorized vehicle modes. The central campus area is relatively compact for a major university, and the transportation system encourages pedestrian and bicycle travel while discouraging automobile travel. The central campus transportation system interfaces with the general grid network of the adjacent City of Davis, providing easy pedestrian, bicycle, and transit linkages with the City. In particular, the bicycle system and “culture” of the campus and City contribute significantly to the reduction in motorized vehicle trips. Many students, faculty, and staff that reside in the City do not use automobiles to access the campus.

Under the growth assumptions in the 1994 LRDP, as updated and revised<sup>7</sup>, the total daily traffic volume of motorized vehicle trips entering and exiting the campus was anticipated to increase from approximately 50,500 in 1994 to 65,620 in 2005-06.<sup>8</sup> In 2001, this volume was counted at 62,590.<sup>9</sup>

Four intersections within the campus planning area currently exceed Level of Service (LOS) standards identified in the 1994 LRDP EIR<sup>10</sup>: Richards Boulevard/First Street/E Street, Richards Boulevard/Olive Drive, Richards Boulevard/I-80 Eastbound Ramps, and Richards Boulevard/Research Park Drive. These intersections are within the City of Davis and are affected by the limited capacity available at the Richards Boulevard underpass. The City of Davis has recently installed a northbound right turn lane on Richards Boulevard at its intersection with First/E Streets. This improvement provides additional capacity in the corridor, but does not eliminate the extensive queuing.

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<sup>7</sup> The 1997-98 Major Capital Improvements Projects SEIR updated the 1994 LRDP EIR traffic analysis and revised 1994 LRDP EIR Mitigation Measure 4.3-1. The Veterinary Medicine Laboratory and Equine Athletic Performance Laboratory Facilities Focused Tiered EIR further updated the 1994 LRDP EIR transportation and circulation analysis and included a project-specific mitigation measure to reduce an identified impact (currently identified as 1994 LRDP EIR Mitigation Measure 4.3-1 (b)[f]). The Conference Center, Hotel, and Graduate School of Management Building Project Draft EIR further updated the 1994 LRDP EIR traffic analysis (this project has not yet been approved).

<sup>8</sup> UC Davis Conference Center, Hotel, and Graduate School of Management Building Draft EIR, December 2001, Section 4.3.

<sup>9</sup> Based on daily traffic counts of central campus conducted by Fehr & Peers Associates, March 2001. Adjusted by DKS Associates to include other campus areas.

<sup>10</sup> Based on daily traffic counts conducted by Fehr & Peers Associates, March 2001. Analyzed by DKS Associates, 2001.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on transportation and circulation were evaluated in Section 4.3 (Traffic, Circulation, and Parking) of the 1994 LRDP Draft EIR, as updated and revised. Campus population projections used in subsequent cumulative transportation analyses (most recently updated for the Conference Center, Hotel, and Graduate School of Management Project Draft EIR) were higher than the campus-wide totals evaluated in the 1994 LRDP EIR transportation analysis.<sup>11</sup> Therefore, the updated cumulative transportation analyses are conservative as they over-estimate the traffic volumes associated with campus growth approved under the 1994 LRDP. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered an impact to transportation/circulation for AM and PM peak hour intersection Levels of Service (LOS) 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 SR 113 of LOS “D”;
- result in disruption to existing patterns of pedestrian and bicycle circulation, including the effects of congestion and unsafe conditions, and/or result in new uses which would create demand for bicycle and pedestrian travel without appropriate facilities;
- result in disruption to the provision of transit services, including making transit safe, and/or result in demands for transit services which are not satisfied as part of the project or a known plan;
- result in an increase in winter parking utilization over 90 percent on the central campus, Medical Sciences Complex, and/or major facilities of the west and south campuses;
- 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.

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<sup>11</sup> Campus-wide totals were higher in the cumulative transportation update due to increases in the population modeled for the Health Sciences District on campus with no compensation by reducing the modeled population on other areas of campus.

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

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

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

The 1994 LRDP EIR did not include standards of significance to address traffic generated by events held at major campus venues such as the Recreation Hall, Toomey Field, and Freeborn Hall. A transportation/circulation impact is considered significant if an event at a major campus venue would:

- Result in LOS "F" on campus roads for more than one hour with mandatory manual traffic control;
- Exceed LOS "E" for roadways in the City of Davis outside the downtown core, or result in LOS "F" in the downtown core for more than one hour before or after an event;
- Exceed LOS “E” for County roadways;
- Exceed LOS "E" for 1-80; or
- Exceed LOS "E" for SR 113.

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR concluded that growth under the 1994 LRDP, in combination with growth in the City of Davis, would result of increases in traffic volumes relative to the capacity of the future transportation network, which would result in LOS exceedances (Impact 4.3-1). The following six intersections were anticipated in the 1994 LRDP EIR, as revised, to exceed 1994 LRDP EIR LOS standards through 2005-06:

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

Mitigation proposed in the 1994 LRDP EIR, as revised, would reduce cumulative on-campus impacts (at California Avenue/Realigned Old Davis Road and at Health Sciences Drive/Hutchison Drive) to less-than-significant levels. However, 1994 LRDP EIR Impact 4.3-1 was considered significant and unavoidable because the University could not guarantee the feasibility and/or implementation of intersection improvements (identified in Mitigation Measure 4.3-1) that fall within other jurisdictions to implement.

The potential increase in campus development through 2014-15, combined with growth in the region, could result in increased traffic volumes on the local and regional roadway system, which could result in operating conditions worse than the LOS standards identified under the 1994 LRDP EIR. Potential LOS exceedances would be dependent on specific factors associated with increased development under the next LRDP, including:

- Increase in the number of person trips,
- Modes of travel of the additional person trips,
- Resultant increase in motorized vehicle trips,
- Locations of the increase in motorized vehicle trips, and
- Adequacy of, and campus improvements to, campus transportation/circulation facilities to accommodate vehicle trip.
- Locations and intensities of regional growth and growth in the Davis area.

The campus anticipates that the total campus population will exceed projections in the 1994 LRDP for 2005-06 by approximately 5,010 people through 2014-15. The trip generation associated with this anticipated increase in students, faculty, and staff would be based on the modes that these individuals choose for each of their trips. Future mode choice would be highly influenced by design of the next LRDP, including growth beyond the central campus and location of housing, described below.

- Growth beyond the central campus: Beyond the central campus, transportation facilities are primarily oriented to the automobile (pedestrian facilities, bicycle facilities, and transit services are limited). In addition, the longer distances between trip origins and destinations discourage people-powered transportation. Therefore, increased development beyond the central campus would likely influence student, faculty, and staff mode choice for trips to campus. The next LRDP will establish the locations of new campus development.
- Housing locations: The transportation mode choice that the campus experiences today is primarily a function of housing that is located on campus or in nearby areas of the City. Due to the limited growth of housing in the City (relative to the region), if the campus did not establish new housing, the increased campus population would likely need to reside within other communities. If new students, faculty, and staff cannot be housed in proximity to the central campus, they would primarily rely on automobiles for transportation. The campus will evaluate development of a University neighborhood on or near the campus during the LRDP update process.

As presented in Table 4, assuming that the current transportation mode choice is maintained, campus motorized vehicle trips in 2014-15 are expected to increase by about 15 percent over conditions previously projected for 2005-06. However, as discussed above, the range of transportation mode choice is highly uncertain and would be highly dependent on variables related to the future physical development of the campus.

**Table 4. Campus Motorized Vehicle Trip Generation**

Year	Daily Traffic Volume
2001	62,590 <sup>1</sup>
2005-06 (projected in 1994 LRDP)	65,620 <sup>2</sup>
Preliminary Estimate 2014-15	74,600 <sup>3</sup>

<sup>1</sup> Based upon daily traffic counts of central campus conducted by Fehr & Peers Associates, March 2001. Adjusted by DKS Associates to include other campus areas.

<sup>2</sup> UC Davis Conference Center, Hotel, and Graduate School of Management Building Draft EIR, December 2001, Section 4.3.

<sup>3</sup> Preliminary estimate assuming current campus mode choice and 25 percent on-campus student housing.

The distribution of motorized trips would also be affected by the locations of future campus development identified in the next LRDP. Locating facilities on the central campus (compared to more distant areas on campus) would reduce the overall number of motorized trips by maintaining favorable mode choices, but would result in more trips in the adjacent areas of the City of Davis (particularly the downtown area). Locating facilities in more distant campus areas (compared to on the central campus) would increase overall motorized vehicle traffic, while reducing the traffic increases in the City, as more traffic would utilize the I-80 and SR-113 interchange entrances to the campus. Development locations within the campus—particularly the locations of parking lots and parking structures, will greatly affect the future peak hour operations of intersections. Due to the uncertainty of future growth decisions for areas within the central campus and/or areas beyond the central campus, the future impacts to intersection operations in the campus study area are highly uncertain even though the overall increase in traffic volumes on campus can be estimated through 2014-15. The following discussion provides a compilation of available traffic projections and a qualitative analysis of potential future impacts to transportation and circulation in the campus planning area.

The 2001 City of Davis General Plan EIR identified the following roadway facilities in proximity to the campus that would not meet the 1994 LRDP EIR LOS in the year 2010:

- B Street – Russell Boulevard to First Street
- Richards Boulevard – E Street to Research Park Drive
- First Street – A Street to E Street
- Old Davis Road – West of A Street

No improvements are currently planned for these roadway segments that would substantially increase their capacity and resultant operating conditions. The City of Davis 2010 roadway segment analysis did not anticipate UC Davis growth beyond the 2005-06 implementation period of the 1994 LRDP EIR<sup>12</sup>. Future campus growth through the year 2014-15 would be expected to further exacerbate the LOS exceedances of previously identified roadways. Qualitative analysis of the magnitude of the expected impact is not possible at this time due to the uncertainty of the

<sup>12</sup> City of Davis General Plan EIR. 2001. Appendix B, page 4.

future locations of growth for UC Davis. The identified roadway segments are mostly east of campus, while future campus growth, particularly the provision of future parking facilities, could occur mostly on the west side of the central campus.

Potential mitigation measures for future identified LOS exceedances could include, but are not limited to, roadway widening, alteration of lane configurations, or the provision of new roadways in specific areas. Future consideration of potential mitigation measures will take place as part of the LRDP update process. The adoption and implementation of specific mitigation measures can only take place after the completion of detailed development the new LRDP growth objectives, roadway analysis, consultation with affected public and agency representatives, and evaluation of the effectiveness of the mitigation measures.

The Sacramento Area Council of Governments (SACOG) maintains a regional travel model for the Sacramento region, which forecasts traffic volumes in the vicinity of the campus for various years, including 2015. As shown in Table 5, daily traffic volume increases of up to 41 percent are projected for selected roadway segments in the vicinity of the campus.

**Table 5. Year 2015 Daily Traffic Volume Forecasts**

Roadway	Segment	Existing Count <sup>1</sup>	2015 Forecast <sup>2</sup>	Percentage Change
B Street	Russell Street to First Street	12,300	15,000	22%
Richards Boulevard	E Street to East Olive Drive	24,000	29,200	22%
	I-80 Overcrossing	22,700	29,900	32%
	I-80 to Research Park Drive	18,600	26,300	41%
SR 113	I-80 to Hutchison Drive	35,500	47,800	35%
	Hutchison Drive to Russell Boulevard	35,000	46,500	33%
First Street	A Street to F Street	14,700	17,400	18%
Hutchison Drive	SR 113 to La Rue Road	9,000	10,800	20%
I-80	Richards Boulevard to SR 113	104,000	131,300	26%
Russell Boulevard	SR 113 to Anderson Road	18,900	21,400	13%
	Anderson Road to Oak Avenue	25,700	28,400	11%
	Oak Avenue to B Street	27,000	27,000	0%

<sup>1</sup> Existing counts from City of Davis (General Plan Update EIR) and Caltrans.

<sup>2</sup> 2015 forecast based upon traffic growth projected by SACOG regional travel model (SACMET 99) between the years 2000 and 2015.

Source: Analysis by DKS Associates, 2001.

The SACOG roadway projections provide useful indications of future traffic levels in the campus planning area. The projected increases in total daily volumes on area roadways indicate that future peak hour volumes in campus intersections would be expected to increase. However,

utilizing the SACOG data to complete a detailed quantitative analysis of the projected impacts is not possible at this time due to the uncertainty of the locations of future campus development and associated parking facilities. Although detailed analysis of transportation and circulation impacts at all intersections can not be analyzed at this time, the potential impacts to major campus entry/exit points can be estimated by acknowledging the expected growth trend identified by the City of Davis, SACOG, and UC Davis.

The preliminary UC Davis projection of increases in daily motorized vehicle trips on campus through 2014-15 (approximately 15 percent over projections through 2005-06) was used to qualitatively analyze future effects on major campus entry/exit points because these intersections are predominantly served by campus land uses. The major entry/exit points for campus include: Howard Way/Russell Boulevard, Highway 113/Hutchison Road, Interstate 80/Old Davis Road, First Street/A Street, and Anderson/La Rue. To evaluate impacts of campus growth on the identified intersections, each intersection was qualitatively assessed based on geographic location, proximity to vacant land, and potential growth objectives in the upcoming LRDP to identify an approximate amount of peak hour increases to intersection operations. The evaluation results and rationale for intersection evaluations are presented in Table 6.

**Table 6. Evaluation of Campus' Main Entry/Exit Points through 2014-15**

Intersection	Description of Growth Factors	Expected Growth <sup>1</sup>
Howard Way/Russell Boulevard	Parking facilities affecting the intersection are currently at or above 100 percent utilization. No new parking facilities that would directly affect the intersection are expected in the upcoming LRDP	Low
Highway 113/Hutchison Road	Nearby vacant land and underutilized roadway segments. Growth is expected in this area of campus under the upcoming LRDP.	High
Interstate 80/Old Davis Road	Nearby vacant land and underutilized roadway segments. Growth is expected in this area of campus under the upcoming LRDP.	High
First Street/A Street	Uncertain. Freeway access and convenience of other routes may influence driver behavior to avoid this intersection. Downtown Davis and access through Richards Boulevard expected to remain a major destination for campus drivers.	Medium
Anderson/La Rue	Uncertain. No new housing expected north of the intersection. Hutchison and Highway 113 are expected to become the more convenient alternative for freeway access and entry to and from campus destinations.	Medium

<sup>1</sup> Expected growth coded as follows: Low (expectation of 0 to 10 percent growth in peak hour traffic); Medium (expectation of 10 to 20 percent growth in peak hour traffic); High (expectation of 20 to 30 percent growth in peak hour traffic)

Based on the evaluation presented in Table 6, the following discussion evaluates the potentially foreseeable significant impacts and mitigation measures to transportation and circulation facilities that could result from campus growth through the year 2014-15.

For the Howard Way/Russell Boulevard intersection, the potential increase in intersection volumes of zero to 10 percent during the peak hour is consistent with the SACOG projection of a zero percent increase for Russell Boulevard (Oak Avenue to B Street segment shown in Table 5). Given the small increase in expected traffic volumes, impacts may be less-than-significant to this intersection through the year 2014-15. New mitigation measures would potentially be required. A detailed analysis using updated assumptions and computer traffic modeling would reevaluate this preliminary analysis. This detailed analysis will occur as part of the LRDP update process.

For the Highway 113/Hutchison Road intersection, the peak hour traffic volumes are expected to increase substantially through the year 2014-15. The expected impact would exceed the LOS standard and could be significant, but this impact could be mitigated to a less-than-significant level through the adoption of mitigation measures. The existing off-ramps and on-ramps at Highway 113/Hutchison Road do not have signals. Signalization may be required as a mitigation measure to accommodate the future growth that could occur as part of the LRDP update process. Timing of the signal installation and details of the need to install a signal or consider other potential alternatives can only be evaluated once the exact impact of the 2014-15 growth is thoroughly analyzed. Additionally, consultation with Caltrans will be required to properly identify and implement a mitigation measure at this location. Detailed analysis using updated assumptions and computer traffic modeling would reevaluate this preliminary analysis. The detailed analysis will occur as part of the LRDP update process.

For the Interstate 80/Old Davis Road intersection, the peak hour traffic volumes are expected to increase substantially through the year 2014-15. The expected impact would exceed the LOS standard and could be significant, but this impact could be mitigated to a less-than-significant level through the adoption of mitigation measures. The existing off-ramps and on-ramps do not have intersection signals. Signalization may be required as a mitigation measure to accommodate the future growth that could occur as part of the LRDP update process. Timing of the signal installation and details of the need to install a signal or consider other potential alternatives can only be evaluated once the exact impact of the 2014-15 growth is thoroughly analyzed. Additionally, consultation with Caltrans will be required to properly identify and implement a mitigation measure at this location. Detailed analysis using updated assumptions and computer traffic modeling would reevaluate this preliminary analysis. The detailed analysis will occur as part of the LRDP update process.

For the First Street/A Street intersection, the amount of future peak hour intersection growth is expected to be medium (10 to 20 percent). This increase is considered uncertain given the range of development locations for future campus growth and the unknown changes of driver behavior that may occur. Determining the LOS for the intersection through the year 2014-15 is not feasible at this time. Potential impacts could be less-than-significant and require no mitigation measures, or potential impacts could be significant and require roadway improvements such as modification to lane configurations and potentially, intersection signalization. Detailed analysis using updated assumptions and computer traffic modeling will be implemented to reevaluate this preliminary analysis. The detailed analysis will occur as part of the LRDP update process.

For the Anderson/La Rue intersection, the impacts of campus growth through 2014-15 are expected to be significant due to the probability that the peak hour intersection operations will fall below the identified LOS standard. Due to the uncertainty of the locations of campus growth, the determination of a significant impact or less-than-significant impact at this location can not be made at this time. Detailed analysis using updated assumptions and computer traffic modeling will be implemented to reevaluate this preliminary analysis. The detailed analysis will occur as part of the LRDP update process.

Given the increase in the campus population through 2014-15, it is likely that additional elements of the roadway system that were not previously addressed in the 1994 LRDP EIR, as revised, would operate at levels that would exceed the campus' standards of significance. However, detailed intersection impacts and mitigation measures cannot be identified at this time because the configuration of revised LRDP land uses has not yet been identified, and consideration of related impacts would be speculative. During preparation of the next LRDP EIR, the campus will develop a traffic model that incorporates this specific information, and intersections that would exceed standards of significance through 2014-15 will be identified. Mitigation Measure 4.3-1 (b) would be updated in the next LRDP to reflect these changes. In addition, 1994 LRDP EIR Impact 4.3-1 would remain significant and unavoidable because the University would not be able to guarantee intersection upgrades that are within other jurisdictions to implement. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified five campus-level cumulative transportation and circulation impacts that could be mitigated to less-than-significant levels: conflict between bicyclists, pedestrians, and transit vehicles in the core area of the central campus (Impact 4.3-2); inadequate pedestrian and bicycle traffic in areas other than the core area of the central campus (Impact 4.3-3); substantial pedestrian and bicycle activity across Old Davis Road from the core area of the central campus (Impact 4.3-4); increased demand for transit services (Impact 4.3-5); and increased parking demand (Impact 4.3-6). Campus growth through 2014-15 is anticipated to increase pedestrian, bicycle, and transit use and would contribute to these campus-level cumulative impacts. Continued implementation of associated 1994 LRDP EIR mitigation measures would: ensure adequate pedestrian and bicycle facilities are developed and transit conflicts are reduced (Mitigation Measure 4.3-2); ensure pedestrian and bicycle facilities are planned to anticipate growth and applicable access standards are implemented (Mitigation Measure 4.3-3); ensure transit services can accommodate increased ridership (Mitigation Measure 4.3-4); and provide transportation strategies to reduce automobile travel and parking demand, and establish additional parking facilities when required (Mitigation Measure 4.3-6). In compliance with Mitigation Measure 4.3-4, Old Davis Road is currently under realignment, which will reduce pedestrian and bicycle conflicts; the next LRDP EIR would be updated to reflect this. The campus anticipates that, with continued compliance with associated mitigation measures, campus-level cumulative transportation and circulation impacts would be reduced to less-than-significant levels through 2014-15. However, the campus will reexamine potential transportation and circulation impacts and any new mitigation measures that may be required during the LRDP update process.

## Noise

### Background

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

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

The 1994 LRDP EIR identified that development projected under the 1994 LRDP would result in the exposure of uses along roadways to increased cumulative noise levels associated with increased traffic volumes. Daily motorized vehicle trips on campus roadways were approximately 62,590 in 2001<sup>13</sup>. Cumulative growth anticipated through 2005-06 is anticipated to increase daily motorized vehicle trips on campus roadways to approximately 65,620 trips per day<sup>14</sup>.

### 1994 LRDP EIR Analysis

Impacts of campus growth through year 2005-06 on noise were addressed in Section 4.4 of the 1994 LRDP EIR<sup>15</sup>. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

In the absence of other numerical guidance for determining significance, the 1994 LRDP EIR relies on the State of California published general plan guidelines for the preparation of county and city Noise Elements as the standards of significance for noise impacts on the campus. The 1994 LRDP EIR uses the Solano County, Yolo County, and the City of Davis general plan guidelines and ordinances as the standards of significance for project impacts within those respective jurisdictions. 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-

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<sup>13</sup> Based upon daily traffic counts of central campus conducted by Fehr & Peers Associates, March 2001. Adjusted by DKS Associates to include other campus areas.

<sup>14</sup> UC Davis Conference Center, Hotel, and Graduate School of Management Building Draft EIR, December 2001, Section 4.3.

<sup>15</sup> Cumulative noise impacts were reevaluated in the 1997-98 Major Capital Improvement Projects SEIR, but no changes were made to the 1994 LRDP EIR impacts or mitigation measures (Section 8 of the Draft Supplemental 1997-98 Major Capital Improvement Projects SEIR).

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, short-term construction-related noise 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.

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR anticipated that regional-plus-campus cumulative development would result in increased noise levels associated with increased traffic and other noise sources, a significant and unavoidable impact (Impact 4.4-4). As identified in Table 4, cumulative growth under the 1994 LRDP through 2005-06 is anticipated to increase daily motorized vehicle trips on campus roadways to approximately 65,620 trips per day. The campus anticipates that increases in the campus population through 2014-15 would increase vehicle trips on campus roadways to approximately 74,600 in 2014-15 (8,980 trips beyond projections for 2005-06). A doubling of traffic volumes is assumed to result in a 3 dBA increase in noise levels. Because vehicle trips would increase by 15 percent over levels projected for 2005-06 (rather than double), a 3 dBA increase in noise levels would not occur. However, growth through 2014-15 would contribute additional traffic, which would increase noise levels. In addition to traffic-generated noise, new campus facilities (including athletic facilities, building mechanical systems, and other stationary sources) that would be required to accommodate growth anticipated through 2014-15 and would also increase noise levels.

Continued implementation of 1994 LRDP EIR Mitigation Measures 4.4-4(a) through (c) would reduce the significance of increased cumulative noise levels attributed to the increase in vehicle trips and other noise sources associated with a reasonably foreseeable increase in campus and regional growth through 2014-15. However, 1994 LRDP EIR Impact 4.4-4 would remain significant and unavoidable because the University could not guarantee implementation of 1994 LRDP EIR Mitigation Measure 4.4-4(c), which is not within the jurisdiction of the University to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one less-than-significant campus-level cumulative noise impact (increases in operational noise due to stationary and area noise sources, Impact 4.4-2), and one campus-level cumulative noise impact that, with mitigation, would be reduced to a less-than-significant level (exposure of occupants to significant noise levels from traffic, railroad, or other sources, Impact 4.4-3).

Impact 4.4-2 was considered less-than-significant because noise level increases associated with stationary and area noise sources were not anticipated to exceed significance levels and because equipment and activities generating noise would be designed to meet standards for sensitive

receptors. No mitigation was required. Campus growth through 2014-15 is anticipated to increase stationary and area operational noise sources, but noise level increases associated with stationary and area sources are still not expected to exceed significance levels.

Although campus growth through 2014-15 would construct buildings that could potentially expose occupants to significant noise levels, continued implementation of appropriate project siting and noise attenuation features (identified in Mitigation Measure 4.4-3) is expected to reduce Impact 4.4-3 to a less-than-significant level. The campus will reexamine potential noise impacts and any new mitigation measures that may be required during the LRDP update process.

## **Air Quality**

### Background

#### *Criteria Pollutants*

Criteria air pollutants are primarily associated with vehicular, electrical, and natural gas emissions. 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. Air quality within the YSAQMD is in nonattainment for the state and federal standards for ozone (O<sub>3</sub>) and for particulate matter (PM<sub>10</sub>), and is classified as nonattainment. The YSAQMD is in attainment of the state and federal standards for carbon monoxide (CO), except for the City of West Sacramento (CO emissions locally generated in Sacramento are carried southward to the nearby City of West Sacramento).

Recently, the Environmental Protection Agency (EPA) added standards in recognition of increased concern over particulate matter 2.5 microns or less in diameter (PM<sub>2.5</sub>). According to information provided by EPA, designations for the new PM<sub>2.5</sub> standards by the EPA will begin in the year 2002 with attainment plans due by 2005 for regions that violate the standards. PM<sub>2.5</sub> 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<sub>2.5</sub> standards. The California Air Resources Board (CARB) and local air districts in California have developed a PM<sub>2.5</sub> monitoring network plan, but to date, no data has been collected.

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

The 1994 LRDP EIR identified that development under the 1994 LRDP would result in cumulative increases in criteria air pollutant emissions associated with increased traffic volumes and other uses that would exceed established thresholds. Daily cumulative motorized vehicle traffic volumes in 2001 were counted at approximately 62,590 trips.

#### *Toxic Air Contaminants*

There are many typical community sources of toxic air contaminants (TACs) in the Davis area, including dry cleaners, automobiles, and industrial emissions. It is likely that automobiles are the major source of air toxics emissions and related health risk in Davis. However, 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 (HRA) 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. The results of the 1999 health risk assessment are presented in Table 7.

**Table 7. Summary of Cumulative Health Risks through 2005-06 under the 1994 LRDP**

Description	1994 LRDP Health Risks <sup>1</sup>	1994 LRDP Standards of Significance
Acute Hazard Index	9.29 x 10 <sup>-3</sup>	≥ 1.0
Chronic Hazard Index	3.37 x 10 <sup>-3</sup>	≥ 1.0
Cancer Risks	0.4755 per 10 <sup>6</sup>	≥ 10 per 10 <sup>6</sup>

<sup>1</sup> Cumulative risk values were updated in 1999 including anticipated development in the Health Sciences District.

### 1994 LRDP EIR Analysis

Air quality impacts associated with campus growth through 2005-06 were addressed in Section 4.5 of the 1994 LRDP EIR.<sup>16</sup> Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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

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

For the purposes of the 1994 LRDP EIR, a "substantial contribution" to the regional pollutant load was defined as the new production of 550 pounds per day (lbs/day) of CO, and/or 82 lbs/day of ROC, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR anticipated that cumulative regional development through 2005-06 would increase criteria air pollutant emissions, a significant and unavoidable impact (Impact 4.5-6). The campus anticipates that the campus population in 2014-15 could grow to approximately 43,640 (including 29,500 students and 14,140 faculty and staff) (see Table 3). This increased population would increase daily on-campus vehicle trips anticipated under the 1994 LRDP by approximately 15 percent over levels projected for 2005-06 to 74,600 in 2014-15, which would increase associated vehicular emissions. In addition, electrical and natural gas emissions would also likely increase. However, new electrical generation and natural gas combustion equipment (operated to replace existing older equipment and/or meet increased demand) would implement the current best available control technology to reduce emissions. Regardless, anticipated campus growth through 2014-15 would further contribute to significant and unavoidable cumulative criteria air pollutant emissions that exceed established thresholds. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.5-6(a) and (b) (including updates to measures in 4.5-6[a] discussed in the

<sup>16</sup> Cumulative air quality impacts were reevaluated in Section 4.2 of the WWTP Replacement Project Draft EIR and in Section 8 of the 1997-98 Major Capital Improvement Projects Draft SEIR; however, no changes were made to the 1994 LRDP EIR impacts or mitigation measures.

Transportation and Circulation section of this analysis) would reduce the magnitude of increased cumulative criteria air pollutants, but the impact would remain significant and unavoidable. There are no new feasible mitigation measures that would reduce this impact to a less-than-significant level. However, the availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region could result in increased CO concentrations at intersections (Impact 4.5-7). Future CO emissions would be expected to continue to be lower as a result of new regulations requiring the use of cleaner burning fuels and improved engine efficiencies. Therefore, this impact would continue to be less-than-significant through 2014-15.

The 1994 LRDP EIR identified that cumulative development in the region could result in increased toxic air contaminant health risks, a significant and unavoidable impact (Impact 4.5-8). As discussed above, campus daily vehicle trips through 2014-15 are anticipated to increase by approximately 15 percent over levels projected under the 1994 LRDP for 2005-06, which would contribute to cumulative increases in TAC emissions. The anticipated increase in campus enrollment through 2014-15 could also result in the construction of approximately 1,269,600 sq ft of academic and administrative space over that anticipated for 2005-06 (Table 3). This would include the construction and operation of new laboratory space and other uses that would contribute to cumulative increases in toxic air contaminant emissions. However, the location and amount of this future development is not currently known. Cumulative toxic air emissions associated with anticipated campus growth through 2014-15 would increase, but this impact cannot be assessed at this time. The 1994 LRDP EIR determined this impact to be speculative, and therefore significant and unavoidable, because methodologies for evaluating the impact did not exist. The validity of this conclusion and the availability of additional feasible mitigation measures will be evaluated as part of the LRDP update process. At the present time, this analysis would be speculative because the location and amount of new laboratory space is unknown.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one significant and unavoidable campus-level cumulative air quality impact: increased levels of CO, O<sub>3</sub> precursors (ROC and NO<sub>x</sub>), visibility reducing particles, and PM<sub>10</sub> emissions (Impact 4.5-3). The 1994 LRDP EIR also identified two less-than-significant campus-level cumulative air quality impacts: relocation of existing odor sources from the central campus (Impact 4.5-4), and exposure to TACs emitted from uses on the campus (Impact 4.5-5).

The 1994 LRDP EIR considered Impact 4.5-3 significant and unavoidable because, although measures could be implemented to reduce automobile use and associated emissions (Mitigation Measure 4.5-3), emissions under the 1994 LRDP could exceed established thresholds. As discussed above, campus growth through 2014-15 is anticipated to increase criteria air pollutant emissions. Therefore, anticipated campus growth through 2014-15 would further contribute to this significant and unavoidable impact. The validity of the 1994 LRDP EIRs conclusion regarding this impact and the availability of additional feasible mitigation measures will be evaluated as part of the LRDP update process. At the present time, this analysis would be speculative because the location of new emission sources and amount of emissions is unknown.

Impact 4.5-4 was considered less-than-significant because relocation of odor sources away from the central campus would reduce the potential for odor impacts on central campus operations and nearby residences. No mitigation was required. This impact would be updated to reflect that the

campus Wastewater Treatment Plant has been relocated outside the central campus. The campus anticipates animal facilities (i.e., the dairy facility) will continue to be relocated to locations outside the core campus through 2014-15. This impact would remain less than significant and no mitigation would likely be required. Potential impacts associated with odor emissions and the availability of feasible mitigation measures will be evaluated as part of the LRDP update process.

The 1994 LRDP EIR considered Impact 4.5-5 less-than-significant because the health risk assessment performed for growth under the 1994 LRDP indicated that campus development would not pose a potential human health hazard and would not cause a significant adverse non-carcinogenic health impact (results of an update to the 1994 analysis are presented in Table 7). No mitigation was required. As discussed above, growth through 2014-15 is anticipated to increase TAC sources on campus, including laboratories and motorized vehicle trips. However, the location and amount of future TAC sources is not currently known. Therefore, a detailed health risk assessment can not be performed at this time. However, based on the very low health risks identified through 2005-06 (presented in Table 7), the campus anticipates future TAC health risks will not exceed 1994 LRDP standards of significance. A detailed health risk assessment will be performed during the LRDP update process, and the validity of this conclusion and the availability of feasible mitigation measures will be evaluated at that time.

## Hazards and Hazardous Materials

### Background

UC Davis uses many materials, some of which are considered hazardous, during the course of daily operations. Such hazardous materials include many chemical reagents, solvents, radioisotopes, fuels, paints, cleansers, pesticides, herbicides, and biohazards that are used in activities such as laboratory research, building and grounds maintenance, vehicle maintenance, agricultural applications, fine arts, and clinical veterinary medicine. The use of hazardous materials on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous wastes. Hazardous wastes are generated at campus locations where hazardous materials are used, including research and teaching laboratories, maintenance facilities, agricultural operations, art studios, and the health sciences and veterinary medicine complexes. Research and teaching activities produce most of the hazardous waste generated annually by the campus.

Since campus hazardous materials use is primarily associated with teaching and research laboratory activities, the 1994 LRDP EIR assumed that activities involving the use of hazardous materials would increase in proportion to the increase in instruction and research space, an increase of about 41 percent from 1993 to 2005-06. This estimate is believed to be conservative (on the high side) because the campus population was anticipated to increase by a smaller percentage (26 percent from 1993 to 2005-06). As shown in Table 8, instruction and research space increased by approximately 12 percent from 1993 through 1999-00.

**Table 8. Instruction and Research Space (asf)**

<b>1993 Identified in 1994 LRDP</b>	<b>1999-00 Built and Approved</b>	<b>2005-06 Projected in the 1994 LRDP</b>	<b>2014-15 Assumed Given Projected Enrollment Increases<sup>1</sup></b>
2,941,559	3,308,588	4,146,559	4,969,825

<sup>1</sup> Assumes increase in instruction and research space based on ratio of instruction and research space to academic and administrative space anticipated for 2005-06 in the 1994 LRDP EIR (64% of the total Academic and Administrative would be Instruction and Research space).

As a consequence of various historic campus activities, certain locations on campus have been contaminated by various hazardous substances. Contaminated soils or building materials have the potential to pose hazards to future campus occupants if not managed and remediated safely.

### 1994 LRDP EIR Analysis

Hazards and hazardous materials impacts through 2005-06 were addressed in Section 4.6 (Hazardous Materials and Public Safety) of the 1994 LRDP Draft EIR<sup>17</sup>. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

<sup>17</sup> Cumulative hazards and hazardous materials impacts were reevaluated in Chapter 4.3 the WWTP Replacement Project Draft EIR, but no changes were made to the 1994 LRDP EIR impacts, mitigation measures, or levels of significance.

The environmental analysis in the 1994 LRDP EIR considered hazards and hazardous materials impact significant if campus or regional growth would:

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

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

To maintain the ratio of instruction and research space to total academic and administrative space identified for 2005-06 in the 1994 LRDP, campus instruction and research space through 2014-15 is anticipated to increase by approximately 20 percent over projections provided in the 1994 LRDP EIR for 2005-06 (see Table 8). As assumed in the 1994 LRDP EIR, activities involving the use of hazardous materials are assumed to increase in proportion to the increase in new instruction and research space. This estimate is believed to be conservative (on the high side) because the campus population increase would be substantially smaller (through 2014-15, the on-campus population is anticipated to increase by approximately 13 percent over the population projected for 2005-06).

The 1994 LRDP EIR identified that cumulative development in the region would increase hazardous materials use and associated health hazards exposure (Impact 4.6-3). The campus anticipates that growth through 2014-15 may increase hazardous materials use by approximately 20 percent over levels projected for 2005-06 in the 1994 LRDP EIR. In compliance with 1994 LRDP EIR Mitigation Measure 4.6-1 (a), the campus has strengthened programs aimed at improving health and safety conditions since 1994. Specific guidelines included in this measure would be updated in the next LRDP EIR to reflect the current status of hazardous materials waste management on campus.<sup>18</sup> In addition, 1994 LRDP EIR Impact 4.6-3 would remain significant and unavoidable because the University would still not be able to guarantee that hazardous materials used at locations outside the jurisdiction of the University would be managed safely. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region could place additional loads on hazardous waste management facilities (Impact 4.6-4). Growth anticipated through 2014-15 would contribute to cumulative hazardous waste loads. Specific guidelines included in Mitigation Measure 4.6-4 would be updated in the next LRDP EIR to reflect the current status of

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<sup>18</sup> Since 1994, Injury and Illness Prevention, Chemical Hygiene, and Emergency Action Plans have been developed for the campus. Mitigation Measure 4.6-1(a)(ii) would be updated to reflect this. Due to recent regulatory changes and the nature of waste generated on campus, the campus has been exempt from the state's waste minimization plan requirements since July 2000. Therefore, Mitigation Measure 4.6-1(a)(iii) would be updated to reflect new requirements for the campus' waste minimization program. The campus established a Chemical Inventory System in 1998 and a Certified Unified Program Agency Self-Audit Program in 1995. Mitigation Measure 4.6-1(b) would be updated to reflect this.

hazardous waste management on campus.<sup>19</sup> In addition, 1994 LRDP EIR Impact 4.6-4 would remain significant and unavoidable because the University would still not be able to guarantee that other jurisdictions would adopt, monitor, and enforce programs to minimize the generation of hazardous waste. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region would increase the number of people exposed to health hazards associated with the use of radioisotopes (Impact 4.6-7). The campus anticipates that growth through 2014-15 may increase activities involving hazardous materials by approximately 20 percent over levels projected for 2005-06 and 40 over 1999-00 levels. However, although instruction and research space on campus has increased since 1994, the total number of Radioactive Use Authorizations (to allow radioactive materials use) issued to faculty on campus in 1999-00 is slightly below the number issued in 1994<sup>20</sup>. Therefore, a 20 percent increase in radioactive materials use through 2014-15 over levels projected for 2005-06 overestimates the actual increase that is likely to occur. In compliance with 1994 LRDP EIR Mitigation Measure 4.6-7, the campus has improved health and safety conditions associated with radioactive materials. Portions of this mitigation measure would be updated in the next LRDP EIR to reflect the current status of hazardous materials use, management, and regulation on campus.<sup>21</sup> However, 1994 LRDP EIR Impact 4.6-7 would remain significant and unavoidable because the University would still not be able to guarantee that radioactive materials used at locations outside the jurisdiction of the University would be managed safely. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region could place additional loads on radioactive waste management facilities (Impact 4.6-8). Growth anticipated through 2014-15 would contribute to cumulative radioactive waste loads. Specific guidelines included in this measure would be updated in the next LRDP EIR to reflect the current status of hazardous materials use, management, and regulation on campus.<sup>22</sup> In addition, 1994 LRDP EIR Impact 4.6-8 would remain significant and unavoidable because the University would still not be able to guarantee that other jurisdictions would adopt, monitor, and enforce programs to minimize the generation of radioactive waste. The availability of additional feasible mitigation measures will be investigated as part of the 1994 LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region would increase the number of people exposed to health hazards associated with the use of biohazardous materials and research animals (Impact 4.6-12). The campus anticipates that growth through 2014-15 may increase activities involving hazardous materials (including biohazards) by approximately 20

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<sup>19</sup> Due to recent regulatory changes and the nature of waste generated on campus, the campus has been exempt from the state's waste minimization plan requirements since July 2000. Therefore, Mitigation Measure 4.6-4(a) would be updated to reflect new requirements for the campus' waste minimization program. In conformance with 1994 LRDP EIR Mitigation Measures 4.6-2(b), 4.6-4(b), and 4.6-6(a), the Environmental Services Facility, a new handling facility for campus hazardous wastes, was constructed and became fully operational in early 2000. Mitigation Measure 4.6-2 would be updated to reflect this.

<sup>20</sup> Gerry Westcott. 2000. UC Davis Environmental Health and Safety. Personal communication.

<sup>21</sup> The first project approved under the 1994 LRDP that involves radioactive materials has been occupied. Mitigation Measure 4.6-7 would be updated to reflect this.

<sup>22</sup> In conformance with 1994 LRDP EIR Mitigation Measures 4.6-2(b), 4.6-4(b), and 4.6-6(a), the Environmental Services Facility, a new handling facility for campus hazardous wastes, was constructed and became fully operational in early 2000. Mitigation Measure 4.6-6(a) and (b) would be updated to reflect this. Due to recent regulatory changes and the nature of waste generated on campus, the campus has been exempt from the state's waste minimization plan requirements since July 2000. Therefore, Mitigation Measure 4.6-6(c) would be updated to reflect new requirements for the campus' waste minimization program. Due to the current nature of radioactive materials use on campus (less materials are used than were in 1994), a formal Radiation Waste Minimization Plan has not been required. Mitigation Measure 4.6-6(d) would be updated to address this change.

percent over levels projected for 2005-06 (see Table 8). In compliance with 1994 LRDP EIR Mitigation Measure 4.6-12, the campus has improved health and safety conditions associated with biohazardous materials. However, 1994 LRDP EIR Impact 4.6-12 would remain significant and unavoidable because the University would still not be able to guarantee that biohazardous materials and research animals used at locations outside the jurisdiction of the University would be managed safely. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region could place additional loads on medical waste facilities (Impact 4.6-13). Growth anticipated through 2014-15 would contribute to cumulative medical waste loads. Due to the existing waste management policies and practices that ensure sterilization of most biohazardous waste at the point of generation, and the fact that the campus anticipates adequate treatment capacity would likely exist in the region to support cumulative increases in medical waste generation, this impact would likely remain less-than-significant<sup>23</sup>. This impact will be reexamined during the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region would increase the number of individuals exposed to physical safety hazards (Impact 4.6-15). Although cumulative growth through 2014-15 would increase the number of people on campus and in the region who would be exposed to physical safety hazards, this impact would most likely remain less-than-significant because future physical safety hazards are not anticipated to be greater than the physical hazards people are currently exposed to. In addition, campus occupational health and safety programs are intended to minimize the campus' contribution to common hazards, and workers who engage in activities that present specific hazards are covered by OSHA regulations. Although not required, Mitigation Measure 4.6-15 would further reduce the magnitude of this impact. This impact will be reexamined during the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region on potentially contaminated sites could pose cumulative health and safety threats (Impact 4.6-17). Projected campus growth through 2014-15 is anticipated to develop approximately 220 acres of land beyond the development previously evaluated in the 1994 LRDP EIR. Continued implementation of Mitigation Measure 4.6-17 would reduce the campus' contribution to this impact to a less-than-significant level. However, the impact would remain significant and unavoidable because the University cannot guarantee that other jurisdictions would enforce and monitor similar mitigation measures geared to reducing risks associated with development of contaminated sites. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that demolition or renovation on campus and in the region could pose cumulative health and safety risks (Impact 4.6-19). Growth through 2014-15 would require the demolition or renovation of existing campus buildings. Due to the stringent regulation of materials that could pose health and safety risks during demolition or renovation of buildings, the impact would likely remain less-than-significant. This impact will be reexamined during the LRDP update process.

The 1994 LRDP EIR identified that cumulative transportation of hazardous materials could increase cumulative health risks (Impact 4.6-21). The campus anticipates that growth through 2014-15 may increase activities involving hazardous materials by approximately 20 percent over levels projected for 2005-06, which would increase the associated cumulative transportation of

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<sup>23</sup> Majewski, Andrew. 2001. Personal communication. December 2001.

hazardous materials. Due to the stringent regulatory requirements that apply to common carriers who would handle the delivery and transport of hazardous materials on campus and in the region, this impact would likely remain less-than-significant. This impact will be reexamined during the LRDP update process.

The 1994 LRDP EIR identified that growth on campus and in the region would increase the cumulative demand for emergency response capabilities (Impact 4.6-23). In compliance with 1994 LRDP EIR Mitigation Measure 4.6-23, the campus emergency response team was adequately prepared to respond to hazardous materials emergencies prior to occupancy of the first 1994 LRDP project, and the campus has entered into an Agreement for Hazardous Materials Automatic Aid to provide sufficient resources to respond to a Level A hazardous materials incident. Specific guidelines included in this measure would be updated in the next LRDP EIR to reflect current conditions.<sup>24</sup> Because an Agreement for Hazardous Materials Automatic Aid has been implemented, and with it, the campus has sufficient resources to respond to a Level A hazardous materials incident, the next LRDP EIR would likely identify this impact as less-than-significant without mitigation required. This impact will be reexamined during the LRDP update process.

As discussed above, mitigation measures identified in the 1994 LRDP EIR would be updated in the next LRDP EIR to reflect current conditions. In addition, growth anticipated through 2014-15 is not currently expected to introduce any new cumulative impacts related to hazards and hazardous materials. However, the next LRDP EIR will fully evaluate the potential hazards and hazardous materials effects associated with development identified in the next LRDP.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified eight campus-level cumulative hazards and hazardous materials impacts that, with mitigation, could be reduced to less-than-significant levels. These impacts include: increase in the use of hazardous materials (Impact 4.6-1), radioactive materials (Impact 4.6-5), biohazardous materials (Impact 4.6-9), and laboratory animals (Impact 4.6-10); increase in the generation of hazardous waste (Impact 4.6-2) and radioactive waste (Impact 4.6-6); increase in operations using hazardous materials that could exceed emergency response capabilities at UC Davis (Impact 4.6-22); and inadvertent disposal of hazardous materials into the sewer or with non-hazardous solid waste (Impact 4.6-24). The 1994 LRDP EIR also identified three less-than-significant campus-level hazards and hazardous materials impacts: increased generation of medical waste (Impact 4.6-11), increased exposure to physical safety hazards on campus (Impact 4.6-14), and increase in hazardous materials transport that could expose people to risks in the event of an accidental release (Impact 4.6-20).

As discussed earlier, campus growth through 2014-15 is anticipated to increase the use of hazardous and radioactive materials, biohazards, and laboratory animals, and increase the generation of associated wastes. As a result, the potential for exposure of campus occupants to health and safety risks could increase. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.6-1, 4.6-5, 4.6-9, and 4.6-10 through 2014-15 would improve compliance with regulations and policies applicable to the use of hazardous and radioactive materials, biohazards,

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<sup>24</sup> Effective January 1, 1994, the campus completed a three-year project designed to provide UC Davis Fire Department personnel with the training and equipment required to implement emergency hazardous materials intervention and control techniques. To further enhance the campus and Yolo County's hazardous materials response capabilities, UC Davis, Yolo County, and the cities of Davis, West Sacramento, and Woodland entered into an Agreement for Hazardous Materials Automatic Aid on June 27, 1995. Currently, the Yolo County Agreement for Hazardous Materials Automatic Aid is fully implemented. The Automatic Aid agreement provides UC Davis and all participating agencies with adequate hazardous materials emergency response capabilities to respond to a Level A hazardous materials incident.

and laboratory animals (as discussed above, portions of these measures would be updated to reflect the current status of hazardous materials use, management, and regulation on campus). Implementation of Mitigation Measures 4.6-2 and 4.6-6 (updated to reflect the current status of hazardous waste management on campus) would ensure that hazardous and radioactive wastes are disposed of appropriately. Therefore, the campus anticipates that with continued implementation of these updated measures, campus-level cumulative Impacts 4.6-1, 4.6-2, 4.6-5, 4.6-6, 4.6-9, and 4.6-10 would be reduced to less-than-significant levels. However, the campus will reexamine these impacts during the LRDP update process.

Increased hazardous materials use on campus through 2014-15 could exceed the campus' emergency response capabilities (Impact 4.6-22), but continued implementation of 1994 LRDP EIR Mitigation Measure 4.6-22 would ensure the campus (in cooperation with other emergency response teams in the region) has adequate resources to respond to the most hazardous potential emergency, and it would ensure that appropriate safety plans are in place on campus. Increased hazardous materials use on campus could also increase inadvertent disposal of hazardous materials into the sewer or with non-hazardous solid waste (Impact 4.6-24), but continued implementation of 1994 LRDP EIR Mitigation Measure 4.6-24 would ensure implementation of a pretreatment program (for disposal to the sewer) and a waste exclusion program (for disposal of solid waste). Therefore, the campus anticipates that with continued implementation of 1994 LRDP EIR mitigation measures, campus-level cumulative Impacts 4.6-22 and 4.6-24 would likely be reduced to less-than-significant levels. However, the campus will reexamine these impacts during the LRDP update process.

Although campus growth through 2014-15 would increase the generation of biohazardous waste on campus, Impact 4.6-11 would still most likely be considered less-than-significant because existing practices ensure sterilization of most biohazardous waste at the point of generation, and adequate treatment capacity would likely exist to support the campus' future biohazardous waste generation<sup>25</sup>. Although not required, continued implementation of 1994 LRDP EIR Mitigation Measure 4.6-11 would further reduce the magnitude of this impact. This impact will be reexamined during the LRDP update process.

Although campus growth through 2014-15 would increase the number of people on campus who would be exposed to physical safety hazards, Impact 4.6-14 would most likely remain less-than-significant because future physical safety hazards are not anticipated to be greater than the physical hazards people are currently exposed to. In addition, campus occupational health and safety programs would reduce the potential for common hazards, and workers who engage in activities that present specific hazards would be covered by OSHA regulations. Although not required, Mitigation Measure 4.6-15 would further reduce the magnitude of this impact. This impact will be reexamined during the LRDP update process.

Campus growth through 2014-15 would increase hazardous materials transport to, from, and on campus. However, because of the good record of hazardous materials transport and continued compliance with applicable stringent transport regulations, the increased transport of hazardous materials is expected to remain a less-than-significant impact. Although not required, implementation of 1994 LRDP EIR Mitigation Measure 4.6-20 (updated to reflect current hazardous materials management on campus) would further reduce the magnitude of this impact. This impact will be reexamined during the LRDP update process.

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<sup>25</sup> Majewski, Andrew. 2001. Personal communication. December 2001.

## **Biological Resources**

### Background

The campus is located in a region composed primarily of agricultural lands that include remnant riparian (streamside) and urban areas. Habitat types found on the campus include Agricultural Lands, Ruderal/Annual Grassland, Valley-Foothill Riparian Woodland, Riverine Habitat, Open Water Ponds, Urban Habitat, and Wetlands.

The campus considers species 'special-status' if they are listed as threatened or endangered under either the California or the Federal Endangered Species Acts, are candidates for either the state or federal listings, are afforded protection under the Fish and Game Code of California, or are identified as California Department of Fish and Game (CDFG) "Species of Special Concern". The 1994 LRDP EIR identified that 10 special-status plant species and 37 special-status wildlife species have even the remote potential to occur on or in the vicinity of the campus. The special-status species with potential habitat still available on campus, or that are known to occur on campus, include: burrowing owl, Swainson's hawk, other raptors, and the Valley Elderberry Longhorn Beetle.

The 1994 LRDP EIR identified that growth under the 1994 LRDP could cause adverse effects on biological resources occurring on campus by converting or disturbing fallow land or land currently under active cultivation. Specifically, the 1994 LRDP EIR, as revised<sup>26</sup>, indicated that development under the 1994 LRDP would contribute 231 acres to the cumulative loss in the region of 1,258 acres of Agricultural Land and Ruderal/Annual Grassland habitat for resident and migratory wildlife species. Of the 231 acres of Agricultural Land and Ruderal/Annual Grassland that were anticipated for development on campus, the campus has converted approximately 85 acres to urban uses through 2000-01. The 2001 City of Davis General Plan Update did not provide for an increase in the conversion of Agricultural Land and Ruderal/Annual Grassland habitat in the region over that previously identified in the 1994 LRDP EIR for 2005-06.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on biological resources were addressed in Section 4.7 (Biological Resources) of the 1994 LRDP Draft EIR, as updated and revised<sup>27</sup>. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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

- result in substantial, or potentially substantial, adverse change in the native flora or fauna, including candidate species and CDFG "Species of Special Concern" from conversion of existing habitat to urban uses or disturbance of areas currently supporting such species;

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<sup>26</sup> The WWTP Replacement Project EIR and the 1997-98 Major Capital Improvement Projects SEIR identified the loss of 31 acres of additional ruderal/annual grassland habitat over the amount assessed in the 1994 LRDP EIR and revised the magnitude of associated impacts.

<sup>27</sup> The WWTP Replacement Project EIR and the 1997-98 Major Capital Improvement Projects SEIR identified the loss of additional ruderal/annual grassland habitat over the amount assessed in the 1994 LRDP EIR and revised the magnitude of associated impacts (Appendix G of the WWTP Replacement Project Final EIR and Section 8 of the 1997-98 Draft SEIR). The 1997-98 Major Capital Improvement Projects SEIR, as revised by the Western Human Nutrition Center Tiered Initial Study and Mitigated Negative Declaration, presented a measure (identified as 1994 LRDP EIR Mitigation Measure 4.7-3(d)) to mitigate the cumulative impact on burrowing owl nesting habitat (Section 2 of the 1997-98 Draft SEIR, page 65 of the Initial Study).

- 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.

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified that development under the 1994 LRDP would contribute to the cumulative loss in the region of Agricultural Land and Ruderal/Annual Grassland habitat for resident and migratory wildlife species (Impact 4.7-9). The campus anticipates that a total of approximately 220 acres that were not previously considered in the 1994 LRDP could be developed through 2014-15. Although the precise location of this future development is currently unknown, the campus conservatively assumes, for the purposes of this analysis, that this development could occur on Agricultural Land and Ruderal/Annual Grassland habitat. As a result, the cumulative loss of habitat identified in 1994 LRDP EIR Impact 4.7-9 would increase to address development through 2014-15. In addition, 1994 LRDP EIR Mitigation Measure 4.7-5 would be updated in the next LRDP EIR to reflect new mitigation areas that would be used to compensate for the loss of Agricultural Land and Ruderal/Annual Grassland habitat. Because locations of land uses (including mitigation areas) will be decided during the LRDP update process, it would be too speculative to assume future mitigation areas at this time. Implementation of this updated measure, as well as continued implementation of the other portions of mitigation measures 4.7-9 (a) and (b), would reduce the cumulative impact associated with conversion of Agricultural Land and Ruderal/Annual Grassland habitat through 2014-15. However, 1994 LRDP EIR Impact 4.7-9 would remain significant and unavoidable because the University could not guarantee the feasibility and/or implementation of Mitigation Measure 4.7-9(b), which falls within other jurisdictions to enforce and monitor. The availability of additional feasible mitigation measures will be investigated during the LRDP update process.

The 1994 LRDP EIR identified that development under the 1994 LRDP could contribute to the cumulative loss of valley elderberry longhorn beetle habitat in the region (Impact 4.7-10). Campus development through 2014-15 could contribute to the additional cumulative loss of valley elderberry longhorn beetle habitat. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.7-10 would reduce the magnitude of this impact. However, the impact would remain significant and unavoidable because mitigation falls within the jurisdiction of the USFWS to enforce and monitor, not the University. The availability of additional feasible mitigation measures will be investigated during the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified seven campus-level cumulative biological resources impacts that, with mitigation, could be reduced to less-than-significant levels: conversion of habitat on campus

that could result in the loss of special-status plant species (Impact 4.7-1), loss of burrowing owl nesting habitat (Impact 4.7-3), loss of nesting habitat for raptors (Impact 4.7-4), loss of foraging habitat for Swainson's hawk (Impact 4.7-5), potential failure of Swainson's hawk nesting efforts (Impact 4.7-6), loss of potential habitat for the valley elderberry longhorn beetle (Impact 4.7-7), and loss or adverse modification of wetlands or other waters of the United States (Impact 4.7-8). The 1994 LRDP EIR also identified one less-than-significant campus-level cumulative impact on biological resources: loss of general wildlife habitat on campus for resident and migratory species (Impact 4.7-2).

The campus anticipates that a total of approximately 220 acres that were not previously considered in the 1994 LRDP could be developed through 2014-15. Although the precise location of this future development is currently unknown, the campus conservatively assumes for the purposes of this analysis that this development could occur on Agricultural Land and Ruderal/Annual Grassland habitat. Therefore, the magnitude of Impacts 4.7-1, 4.7-3, 4.7-4, and 4.7-5 would increase. In addition, increased development would increase the potential for Impacts 4.7-6, 4.7-7, and 4.7-8. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.7-1, 4.7-3, 4.7-4, 4.7-5, 4.7-6, 4.7-7, and 4.7-8 would ensure that special status species surveys are performed for potential construction sites, that required consultation and compliance with appropriate agencies occurs, and that lost acreage is compensated for by creating habitat areas. The campus anticipates that with continued implementation of associated mitigation measures through 2014-15, these campus-level cumulative impacts on biological resources would likely be reduced to less-than-significant levels. However, the campus will reexamine these impacts and any new mitigation measures that may be required during the LRDP update process.

Although campus growth through 2014-15 would result in an increase in the loss of general wildlife habitat for resident and migratory species on-campus, this loss would still be small relative to the abundance of remaining habitat on campus (approximately 6 percent of the total habitat) and would not be anticipated to result in a substantial adverse change in the abundance of resident and migratory species. Therefore, the campus anticipates that 1994 LRDP EIR Impact 4.7-2 would remain less-than-significant and no mitigation would be required. The campus will reevaluate this impact and any required mitigation during the LRDP update process.

## Hydrology and Water Quality

### Background

The principal stream course in the Davis region is Putah Creek, which flows along the southern boundary of the Russell Ranch property and the west campus and is diverted to the South Fork of Putah Creek west of the Interstate 80/State Route 113 intersection.

The 100-year flood plain in the campus is generally located along the Putah Creek, South Fork of Putah Creek, and historical North Fork of Putah Creek channels. A portion of the west campus along County Road 98 is also subject to inundation during a 100-year storm event.

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

Storm drainage from the central campus is discharged to the Arboretum Waterway, which serves a storm water retention basin for the central campus. Rainfall overflow is pumped into the South Fork of Putah Creek during large storm events.

The campus is underlain by the Lower Cache-Putah Basin, which is divided by relatively impervious soil layers into shallow/intermediate and deep aquifers. Groundwater underlying the campus is generally high in mineral content and is considered good quality for agricultural use and adequate quality for municipal use. Domestic and fire water for the campus is drawn from wells in the deep aquifer (located up to 1,500 feet below the ground surface). Utility water is used primarily for landscape irrigation on the central campus and is drawn from wells in the shallow/intermediate aquifer (200 to 600 feet below the ground surface). Recent estimates indicate that the campus used approximately 818 million gallons per year (mgy) of domestic water and approximately 237 mgy of utility water in 1999<sup>28</sup>. In addition, water to irrigate most of the campus' teaching and research fields is obtained primarily from water stored above Lake Berryessa's Monticello Dam.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on hydrology and water quality were addressed in Sections 4.8 (Hydrology and Water Quality) and 4.14 (Utilities and Infrastructure) of the 1994 LRDP Draft EIR<sup>29</sup>. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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

- expose faculty, staff, students or visitors to flood hazards by being located within the 100-year flood plain as defined by the Federal Emergency Management Agency;

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<sup>28</sup> West Yost Associates. 2000. UC Davis Domestic Water and Utility Water Master Plans.

<sup>29</sup> Cumulative hydrology and water quality impacts were reevaluated in the WWTP Replacement Project EIR, but no changes were made to 1994 LRDP EIR impacts, mitigation measures, or levels of significance.

- 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.

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified that new development proposed under the 1994 LRDP would increase the amount of impervious surface on the campus west of County Road 98 and Russell Ranch, and would increase surface runoff that could exceed the drainage capacity in the Covell Drain (Impact 4.8-7). The campus anticipates that growth through 2014-15 may develop approximately 220 acres of land that was not previously considered in the 1994 LRDP EIR. Although the precise location of this development is not currently known, some of this development could occur west of County Road 98 and on the Russell Ranch. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.8-7 would require new development located west of County Road 98 to incorporate retention basins to eliminate drainage flows to the Covell Drain, reducing 1994 LRDP EIR Impact 4.8-7 to a less-than-significant level.

The 1994 LRDP EIR identified that agricultural and urban development within the Putah Creek watershed, including development allowed under the 1994 LRDP, would involve soil disturbances that could reduce receiving water quality (Impact 4.8-8). Projected campus growth through 2014-15 is anticipated to develop approximately 220 acres of land beyond the development previously evaluated in the 1994 LRDP EIR. New construction storm water permitting procedures would be included in an update of Mitigation Measure 4.8-4 in the next LRDP.<sup>30</sup> Updated Mitigation Measures 4.8-8 (a) to (c) would reduce the cumulative impact on receiving water quality associated with campus growth anticipated through 2014-15. However, 1994 LRDP EIR Impact 4.8-8 likely remain significant and unavoidable because the University cannot guarantee implementation of 1994 LRDP EIR Mitigation Measures 4.8-8(b) and (c), which fall within other jurisdictions to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that development allowed under the 1994 LRDP would contribute to the impervious surface coverage in the region, thereby reducing groundwater recharge potential (Impact 4.8-9). The campus anticipates that growth through 2014-15 would develop approximately 220 acres of land beyond that evaluated in the 1994 LRDP EIR (the portion of this development that would consist of impervious surfaces is not currently known). Continued implementation of 1994 LRDP EIR Mitigation Measures 4.8-9(a) and (b) would reduce the impact on groundwater recharge associated with campus growth through 2014-15. However, cumulative impact 4.8-8 would remain significant and unavoidable because the University cannot

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<sup>30</sup> Due to a recent agreement with the Central Valley Regional Water Quality Control Board, the campus has filed for coverage under the National Pollutant Discharge Elimination System state-wide General Permit for Discharge of Storm Water Associated with Construction Activity. As opposed to the storm water permitting procedures for construction activities included in 1994 LRDP EIR Mitigation Measures 4.8-4(a) and (b), the campus must now by law submit New Construction Project Information Forms and prepare and implement project-specific storm water pollution prevention plan for all construction projects on campus. This new construction storm water permitting procedure complies with the intent of those outlined in 1994 LRDP EIR Mitigation Measure 4.8-8(a).

guarantee implementation of 1994 LRDP EIR Mitigation Measure 4.8-9(b), which falls within other jurisdictions to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative demand for water from the deep aquifer would increase (Impact 4.14-11). Under the 1994 LRDP, estimated total on-campus demand for water from the deep aquifer in 2005-06 would be approximately 951 mgd. Campus growth through 2014-15 is estimated to increase this demand to approximately 1,426 mgd, which would exceed projections identified in the 1994 LRDP EIR for 2005-06 by approximately 475 mgd. This new demand would contribute to the cumulative demand for water from the deep aquifer. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.14-11 would reduce this impact by ensuring water conservation measures. However, due to the limited data available regarding the capacity of the deep aquifer, the impact would still be significant and unavoidable. This impact and related potential mitigation measures will be studied as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative demand for water from the shallow/intermediate aquifer would increase (Impact 4.14-12). The 1994 LRDP EIR determined that this impact would be less-than-significant because groundwater levels in the shallow/intermediate aquifer have been constant over the long-term, and developed uses in the region would draw a small amount of water from the aquifer compared to agricultural uses. The 1994 LRDP EIR estimated total campus demand for water from the shallow/intermediate aquifer in 2005-06 would be 500 mgd. Recent estimates indicate that the campus used approximately 237 mgd of utility water in 1999. Campus growth through 2014-15 is estimated to increase this demand to approximately 292 mgd<sup>31</sup>. Campus growth through 2014-15 would contribute demand for groundwater from the shallow/intermediate aquifer, but it would not exceed water use projections identified in the 1994 LRDP EIR. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.14-12 (a) and (b) is expected to continue to reduce this impact to a less-than-significant level. This conclusion will be reevaluated during the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one significant and unavoidable campus-level hydrology and water quality impact, Impact 4.14-1, which identified that development under the 1994 LRDP would directly increase demand for water supplied from the deep aquifer. The 1994 LRDP EIR also identified two less-than-significant campus-level cumulative impacts on hydrology and water quality: direct increase in the demand for water from the shallow/intermediate aquifer (Impact 4.14-3), and campus development in the west campus could expose people to flood hazards (Impact 4.8-1). In addition, the 1994 LRDP EIR identified five campus-level cumulative impacts on hydrology and water quality that, with mitigation, could be reduced to less-than-significant levels: increased surface runoff due to new impervious surfaces could exceed drainage capacity and result in localized flooding (Impact 4.8-2), new impervious surfaces could reduce groundwater recharge (Impact 4.8-3), reduction of receiving water quality associated with construction on campus (Impact 4.8-4), reduction of receiving water quality associated with additional impervious surfaces (Impact 4.8-5), and reduction of receiving water quality associated with increased discharge of treated effluent from the campus Wastewater Treatment Plant (Impact 4.8-6).

The 1994 LRDP EIR considered Impact 4.14-1 significant and unavoidable due to the limited data available regarding the capacity of the deep aquifer. As discussed above, campus growth

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<sup>31</sup> West Yost Associates. 2000. UC Davis Utility Water Master Plan.

through 2014-15 is estimated to increase demand for domestic water to approximately 1,426 mgy, which would exceed projections identified in the 1994 LRDP EIR for 2005-06 by approximately 475 mgy. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.14-1 would reduce this impact, but the impact would still be significant and unavoidable. This impact and related potential mitigation measures will be studied as part of the LRDP update process.

The 1994 LRDP EIR considered Impact 4.14-3 less-than-significant because groundwater levels in the shallow/intermediate aquifer have been constant over the long-term, and developed uses would draw a small amount of water from the aquifer compared to agricultural uses. As discussed above, campus growth through 2014-15 is estimated to increase demand for utility water to approximately 292 mgy, which would not exceed campus demand for water from the shallow/intermediate aquifer projected in the 1994 LRDP EIR. Therefore, this impact is anticipated to remain less-than-significant. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.14-3 is expected to further reduce Impact 4.14-3. This conclusion will be reevaluated during the LRDP update process.

Although campus development through 2014-15 could establish campus operations in the 100-year flood plain in the west campus, the campus would continue to review plans for all structures constructed in the flood plain for compliance with Federal Emergency Management Agency requirements. Therefore, Impact 4.8-1 is expected to remain less-than-significant, and no mitigation would be required. This impact will be reevaluated during the LRDP update process.

Campus growth through 2014-15 is anticipated to develop approximately 220 acres of land not previously identified for development under the 1994 LRDP. This would add impervious surfaces on campus, which could contribute to an exceedance of drainage capacity and localized flooding, reduction of groundwater recharge potential, and reduction of receiving water quality. Construction of campus facilities through 2014-15 could generate siltation and sedimentation, which could adversely affect receiving water quality. In addition, campus growth through 2014-15 would increase flows to the campus Wastewater Treatment Plant and associated discharge of treated effluent to the South Fork of Putah Creek. Continued implementation of mitigation measures identified in the 1994 LRDP EIR would: require evaluation and modification of proposed developments to ensure adequate storm drainage capacity exists (Mitigation Measure 4.8-2); incorporate into project design measures to maximize percolation and infiltration (Mitigation Measure 4.8-3); limit erosion during construction (Mitigation Measure 4.8-4- as discussed above, portions of this measures would be updated to reflect current requirements); include appropriate storm water management in project design (Mitigation Measure 4.8-5); and ensure compliance with wastewater discharge requirements (Mitigation Measure 4.8-6). The campus anticipates that with continued implementation of these measures, campus-level cumulative hydrology and water quality impacts would continue to be reduced to less-than-significant levels through 2014-15. However, the campus will reexamine potential hydrology and water quality impacts and any new mitigation measures that may be required during the LRDP update process.

## **Geology and Soils**

### 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 has adopted a Seismic Safety Policy that requires the identification and correction of potential earthquake hazards in existing structures and requires designs for new building structures that avoid seismic hazards.

Some soils 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.

The 1994 LRDP EIR identified that development projected under the 1994 LRDP, in conjunction with cumulative development in the region, would increase the number of people living and working in the Davis area who would be exposed to strong ground motion and other potential seismic effects from earthquakes in local or regional faults.

### 1994 LRDP EIR Analysis

Impacts of campus growth through year 2005-06 on geologic resources were addressed in Section 4.9 of the 1994 LRDP EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered a geotechnical impact to be significant if planned 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.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified that cumulative development would increase the number of people living and working in the Davis area who would be exposed to potential seismic effects (Impact 4.9-3). The campus population anticipated through 2014-15 would exceed population projections under the 1994 LRDP through 2005-06 by a total of approximately 5,010 people. This growth would increase the number of people living and working in the Davis area who would be exposed to strong ground motion and other potential seismic effects from earthquakes in local or regional faults through 2014-15. Continued implementation of 1994 LRDP EIR Mitigation Measures 4.9-3(a) through (c) would reduce the magnitude of this impact, but Impact 4.9-3 would remain significant and unavoidable because the University could not guarantee

implementation of 1994 LRDP EIR Mitigation Measures 4.9-3 (b) and (c), which are not within the jurisdiction of the University to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one campus-level cumulative geology and soils impact that, with mitigation, could be reduced to a less-than-significant level (exposure of people and structures on campus to seismic effects, Impact 4.9-1) and one less-than-significant campus-level cumulative impact (exposure of people on campus to potential hazards caused by expansive soil, Impact 4.9-2). Campus growth through 2014-15 would increase the number of people and the amount of structures that could be exposed to the effects of earthquakes and expansive soil. Continued implementation of 1994 LRDP EIR Mitigation Measure 4.9-1 through 2014-15 (requiring compliance with building safety standards for new and old structures and execution of a safety preparedness program) would likely reduce Impact 4.9-1 to a less-than-significant level. Because the campus complies with the California Building Code, which requires site-specific geotechnical studies and associated design, the campus anticipates that risks associated with expansive soils on campus (Impact 4.9-2) would continue to be less-than-significant through 2014-15 and no mitigation would be required. However, the campus will reexamine potential geology and soils impacts and any new mitigation measures that may be required during the LRDP update process.

## **Mineral Resources**

### Background

Natural gas has been found on the main campus and at the Russell Ranch. Natural gas extraction techniques allow wells to be placed at considerable distances from the deposits. No other known or potential mineral resources have been identified on the campus.

### 1994 LRDP EIR Analysis

Mineral resources are briefly addressed in Section 4.9 (Geotechnical Factors) of the 1994 LRDP Draft EIR. The 1994 LRDP EIR did not identify impacts of campus development through 2005-06 on mineral resources.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

Although the location of development is not currently known, it is not anticipated that development through 2014-15 would result in the loss of known mineral resources on campus. The natural gas deposits on the main campus and Russell Ranch are the only known mineral resources on campus. These resources would continue to be extracted through the techniques that allow wells to be placed at a considerable distance from the deposits, and new development would not be expected to interfere with this extraction.

The 1994 LRDP EIR did not identify any impacts associated with mineral resources. Anticipated growth through 2014-15 is not expected to introduce any new cumulative mineral resource impacts or require new mitigation measures. However, the next LRDP EIR will reevaluate potential effects on mineral resources associated with development identified in the next LRDP.

### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR did not identify any impacts associated with mineral resources. Anticipated growth through 2014-15 is not expected to introduce any new mineral resource impacts or require new mitigation measures. However, effects on mineral resources will be reevaluated during the LRDP update process.

## **Cultural Resources**

### Background

Known prehistoric and historic cultural resources that occur on the campus are discussed below.

*Prehistoric Resources:* Prehistoric resources are those sites and artifacts associated with the indigenous, non-Euroamerican population, generally prior to contact with people of European descent. 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 have been conducted for the central campus, west campus, south campus, Russell Ranch, and the South Davis Research Park. Surface and subsurface cultural resource surveys have been performed for extensive areas of the campus as part of the site work for campus construction projects. Prehistoric Native American sites, including burials, have been identified at several locations on the central campus.

*Historic Resources:* Historical resources include structures, features, artifacts and sites that date from Euroamerican settlement of the region. 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 50 structures on campus that are over 45 years old. Most of these have not been evaluated for historical significance. Future analysis will be required under CEQA and the National Historic Preservation Act for any project that involves buildings over 45 years old that could be damaged or destroyed. The campus also has extensive landscaping, some of which dates 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. 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.

### 1994 LRDP EIR Analysis

Impacts of campus growth through year 2005-06 on cultural resources were addressed in Section 4.10 of the 1994 LRDP EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered an impact on cultural resources to be significant if planned 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.

### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR concluded that implementation of the 1994 LRDP could contribute to a cumulative loss of cultural resources on the campus and in Yolo and Solano counties (Impact 4.10-4). The campus anticipates that, through 2014-15, it could construct approximately 1,269,600 square feet of academic and administrative space over that assumed in the 1994 LRDP for 2005-06 (see Table 3). In addition, student housing and support buildings would also be constructed. This development on campus and development in Yolo and Solano Counties would contribute to a cumulative loss of cultural resources through 2014-15.

Continued implementation of 1994 LRDP EIR Mitigation Measures 4.10-4 (a) and (b) would reduce the magnitude of this impact, but cumulative impact 4.10-4 would remain significant and unavoidable because even if cultural resources are adequately recorded, destruction and/or removal from their place of origin would reduce their value as a resource. In addition, implementation of Mitigation Measure 4.10-4(b) is not within the jurisdiction of the University to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one significant and unavoidable campus-level cumulative cultural resources impact: damage or destruction to buried cultural resources on campus (Impact 4.10-1). The 1994 LRDP EIR also identified two campus-level cumulative cultural resources impacts that, with mitigation, could be reduced to less-than-significant levels: damage or destruction to the campus' historical structures (Impact 4.10-2) and landscape features (Impact 4.10-3). Development on campus through 2014-15 could damage or destroy buried cultural resources, historical resources, and landscape resources.

The 1994 LRDP EIR considered Impact 4.10-1 significant and unavoidable because, although implementation of Mitigation Measure 4.10-1 would ensure that cultural resources were adequately recorded, destruction and/or removal from their place of origin would reduce their value as resources. Although the campus would continue to implement Mitigation Measure 4.10-1, campus development through 2014-15 would continue to contribute to this impact. Therefore, the impact would likely remain significant and unavoidable. The validity of this conclusion and the availability of any additional feasible mitigation measures will be reevaluated during the LRDP update process.

Although development through 2014-15 could damage or destroy historical resources (Impact 4.10-2) and landscape features (Impact 4.10-3), continued implementation of 1994 LRDP EIR Mitigation Measures 4.10-2 and 4.10-3 (ensuring policies to identify, protect, and record significant historical structures and landscape features) would continue to reduce these impacts to less-than-significant levels. Impacts on historical resources and landscape features through 2014-15 will be reevaluated during the LRDP update process.

## **Aesthetics**

### **Background**

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

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

The campus has important natural features, including Putah Creek and the South Fork of Putah Creek, which flow west-to-east in the southern portion of the south campus; and the Arboretum Waterway, which transects the central campus. For most of its length, the Arboretum Waterway is edged in concrete or riprap. The University Arboretum is located on both banks of the Waterway. East of Mrak Hall, the Arboretum Waterway has been widened to form Lake Spafford. A large, landscaped lawn area is adjacent to the lake. At the west end of the Arboretum Waterway, Arboretum Lake provides the backdrop for formal gardens, Putah Creek Lodge and a park-like lawn area with barbecues.

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

### **1994 LRDP EIR Analysis**

Impacts of campus growth through year 2005-06 on aesthetic resources were addressed in Section 4.11 of the 1994 LRDP EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered an impact to aesthetics to be significant if planned 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.

#### Potential Regional-Plus-Campus Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR concluded 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 associated with the conversion of undeveloped land to developed uses (Impact 4.11-5). The campus anticipates that, through 2014-15, the campus could develop approximately 1,269,600 square feet of academic and administrative space over that assumed in the 1994 LRDP for 2005-06 (see Table 3). In addition, housing and support buildings would also be constructed. The location of this future development is not currently known. However, campus growth, in conjunction with other development in the region, would contribute to a cumulative alteration of the rural characters of Yolo and Solano Counties through 2014-15.

Continued implementation of 1994 LRDP EIR Mitigation Measure 4.11-5(a) and (b) would reduce the magnitude of cumulative aesthetic resource impacts through 2014-15. However, cumulative impact 4.11-5 would remain significant and unavoidable because the University could not guarantee implementation of 1994 LRDP EIR Mitigation Measure 4.11-5(b), which is not within the jurisdiction of the University to enforce and monitor. The availability of additional feasible mitigation measures will be investigated as part of the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified three campus-level cumulative aesthetics impacts that, with mitigation, could be reduced to less-than-significant levels: affect on valued elements of the central campus' visual landscape (Impact 4.11-1); incompatibility with the agricultural character of rural areas on campus (Impact 4.11-2); and creation of glare, artificial light, heat and shade, which could make areas uncomfortable (Impact 4.11-3). The 1994 LRDP EIR also identified one less-than-significant campus-level cumulative aesthetics impact, Impact 4.11-3, which identified that development on campus could disrupt long-distance views from campus and surrounding areas.

Although campus development through 2014-15 would construct approximately 1,269,600 asf of academic and administrative space over that considered in the 1994 LRDP EIR, with continued implementation of 1994 LRDP EIR mitigation measures, the campus expects that Impacts 4.11-1, 4.11-2, and 4.11-3 would be reduced to less-than-significant levels. Implementation of appropriate mitigation would ensure new structures in the central campus are compatible with valued visual elements (Mitigation Measure 4.11-1), ensure structures in rural areas on campus are compatible with the surrounding environment (Mitigation Measure 4.11-2), and ensure implementation of guidelines to minimize discomfort from light, heat, and glare (Mitigation Measure 4.11-3). These impacts and any additional mitigation will be reevaluated during the LRDP update process.

The 1994 LRDP EIR considered Impact 4.11-2 less-than-significant because most intensive development was anticipated to occur on the central campus and adjacent to I-80, where views are already substantially blocked or altered. No mitigation was required. Campus growth through 2014-15 would develop approximately 220 acres of land at areas not previously identified in the 1994 LRDP. Although some of this development could occur in undeveloped areas of campus, structures in these locations would likely be single story in height, and views would not be significantly blocked or altered. Therefore, the campus expects this impact will remain less-than-significant and no mitigation will be required. This conclusion will be reevaluated during the LRDP update process.

## **Public Services**

### Background

The existing public services and facilities available in the Davis area include fire and police protection services, public schools, and other public facilities (including libraries). These public services are discussed below.

#### *Fire Protection*

The UC Davis Fire Department provides fire protection, hazardous materials incident response, and emergency medical service to the campus. Recent figures show the campus Fire Department employs 18 line firefighters, in addition to fire prevention, supervisor, and support personnel. In addition, nine student firefighters are also employed<sup>32</sup>. The 1994 LRDP EIR indicated that adequate fire protection service demand should be based on a ratio of personnel to increased gross square footage (gsf), specifically 3.5 fire fighters per 1,000,000 gsf. In 2000-01, the total outside building gsf on campus was approximately 12,280,480,<sup>33</sup> therefore there were 1.5 fire fighters per 1,000,000 gsf. The campus Fire Department has entered into two automatic aid agreements in 1994 with the City of Davis to maintain the fire protection ratio and to ensure adequate response times.

#### *Police Protection*

The campus Police Department provides police protection service for all on-campus buildings and facilities. Recent figures show the campus Police Department employs 31.5 sworn officers, in addition to other non-sworn personnel, including dispatchers and support staff.<sup>34</sup> The 1994 LRDP EIR indicated that adequate police protection service demand should be based on a ratio of personnel to increased population (specifically 0.72 officers per 1,000 population). In 1999-00, the campus population of students, faculty, and staff was 32,775. Thus, the ratio of officers was approximately 0.96 per 1,000 students, faculty, and staff, which exceeded the campus standard.

#### *Schools*

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

#### *Other Public Facilities*

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

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<sup>32</sup> Ebner, John. 2001. Personal communication. February 6, 2001.

<sup>33</sup> UC Davis, ORMP. 2001. 2000-01 Space Inventory, Outside Gross Square Feet.

<sup>34</sup> Chang, Cecilia. 2001. Personal communication. February 6, 2001.

### 1994 LRDP EIR Analysis

Impacts of campus growth through year 2005-06 on public services were addressed in Section 4.12 of the 1994 LRDP EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered an impact to fire protection, police protection, schools, and other public facilities (libraries) to be significant if planned 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.

### Potential Cumulative Environmental Effects of Proposed Enrollment

The 1994 LRDP EIR concluded that cumulative growth under the 1994 LRDP could result in a decreased level of service from City of Davis fire protection and City of Davis police protection services (Impacts 4.12-4 and 4.12-5, respectively), and could contribute to the demand for public education (Impact 4.13-5). The campus anticipates that campus growth through 2014-15 could exceed campus population projections in the 1994 LRDP for 2005-06 by 5,010 people. This anticipated increase in student enrollment would also increase the number of people living and working in the Davis area and associated development, which could contribute to decreased levels of fire and police protection services and an increased demand for public education in the City of Davis through 2014-15. 1994 LRDP EIR Mitigation Measures 4.12-4 (a) and (b), 4.12-5 (a) and (b), and 4.13-5 would reduce the magnitude of the impact on fire protection services, police protection services, and the Davis Joint Unified School District. However, implementation of 1994 LRDP EIR Mitigation Measures 4.12-4(b), 4.12-5(b), and 4.13-5 are not within the jurisdiction of the University of enforce and monitor, so these impacts would continue to be significant and unavoidable. The availability of additional mitigation measures will be investigated as part of the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the Davis area could increase the demand for library facilities (Impact 4.13-7). The 2001 City of Davis General Plan update indicated that the library system would require expansion to meet growth projected through 2010. Campus growth through 2014-15 is anticipated to increase the number of people living in the Davis area, contributing additional demand for libraries. However, this impact would likely still be considered less-than-significant through 2014-15 because the campus' libraries would continue to be available to the general public, as well as the campus population. Therefore, no mitigation would be required. This impact will be reevaluated as part of the LRDP update process.

### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified three campus-level cumulative impacts on public services that, with mitigation, could be reduced to less-than-significant levels: reduction in the level of fire protection provided by the UC Davis Fire Department (Impact 4.12-1), development in areas where fire water pressure may be low (Impact 4.12-2), and reduction in the level of police protection service provided by the UC Davis Police Department (Impact 4.12-3). The 1994 LRDP EIR also identified three less-than-significant campus-level cumulative public services impacts: direct and indirect increase in the number of school age students in the Davis Joint Unified School District (Impacts 4.13-1 and 4.13-2), and increase in the demand for public library services (Impact 4.13-4).

As discussed above, campus growth through 2014-15 would increase the building space and population on campus, which would increase the demand for campus fire and police services, as well as the need for adequate fire water supply. The campus anticipates that continued implementation of mitigation measures identified in the 1994 LRDP EIR through 2014-15 would continue to reduce these impacts to less-than-significant levels. Mitigation would include measures to maintain adequate fire protection services (Mitigation Measure 4.12-1) and police protection services (Mitigation Measure 4.12-3), and would require evaluation of the domestic/fire water system and associated upgrades to adequately serve new development (Mitigation Measure 4.12-2). Campus-level cumulative impacts on these public services and any additional feasible mitigation will be reexamined during the LRDP update process.

The 1994 LRDP EIR considered Impacts 4.13-1 and 4.13-2 less-than-significant because direct (resulting from housing established by the campus within the City) and indirect (resulting from jobs provided by the campus) increases in the number of school-age students in the Davis Joint Unified School District were not anticipated to exceed capacity of the District. Campus growth through 2014-15 would increase the campus population, and would therefore indirectly contribute to the number of school-age students in the Davis Joint Unified School District. The 2001 City of Davis General Plan EIR identified that adequate levels of school services would be provided to accommodate buildout of the General Plan. As discussed in the Population and Housing section of this analysis, increases in the campus population who cannot find housing in the City of Davis under the City's General Plan would reside in other communities in the region. Therefore, campus growth through 2014-15 is not expected to directly or indirectly exceed the capacity of the Davis Joint Unified School District, and these impacts would likely remain less-than-significant. This conclusion will be reevaluated during the LRDP update process.

Although growth through 2014-15 would contribute to the demand for public library services in the City of Davis (Impact 4.13-4), as discussed above, the campus' libraries would continue to serve the area. Therefore, the campus anticipates that this impact would still be considered less-than-significant through 2014-15. This conclusion will be reevaluated during the LRDP update process.

## **Recreation**

### Background

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

The 1994 LRDP anticipated that growth through 2005-06 would develop 12 acres for new recreation facilities and 20 acres for new recreation fields. As of 2001, approximately 7.8 acres of new recreation facilities and approximately 5 acres of new recreation fields have been approved for development.

### 1994 LRDP EIR Analysis

Impacts of campus growth through year 2005-06 on recreation and park facilities were addressed in Section 4.13 of the 1994 LRDP EIR. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

The environmental analysis in the 1994 LRDP EIR considered an impact to recreation to be significant if planned growth would:

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

### Potential Cumulative Environmental Effects of Proposed Enrollment

The 1994 LRDP EIR concluded that cumulative buildout in the Davis area would increase demand for parks and recreational facilities (Impact 4.13-6). The campus anticipates that, through 2014-15, approximately 40 acres of recreation fields may be developed on campus over the amount anticipated through 2005-06 in the 1994 LRDP EIR. The anticipated campus population growth would also increase the number of people living and working in the Davis area, which could contribute to an increased demand for recreation and park facilities in the City of Davis through 2014-15. The City maintains adequate park and recreation uses to accommodate buildout of the City. The campus also provides parks and open space available to the general public. It can be expected that the campus and the City of Davis would provide the necessary recreational facilities to accommodate the cumulative impacts of campus growth through 2014-15. Therefore, the campus anticipates that this impact would remain less-than-significant. However, this impact will be fully reevaluated during the LRDP update process.

### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified one less-than-significant campus-level cumulative impact on recreation resources: development under the 1994 LRDP would increase demand for parks and recreational facilities (Impact 4.13-3). The 1994 LRDP EIR considered this impact less-than-significant because the campus and the City of Davis maintain adequate park and recreation

spaces to accommodate anticipated growth on campus and in the City. Although campus growth through 2014-15 will increase the demand for parks and recreational facilities, the campus anticipates that existing and future park and recreation spaces maintained on campus and in the City are adequate to accommodate anticipated growth. This conclusion will be reevaluated during the LRDP update process.

## Utilities and Service Systems

### Background

UC Davis maintains and operates its own utility and service systems to provide for campus facilities. The campus provides utilities and service systems including solid waste, domestic water, utility water, agricultural water, sanitary sewer, storm drainage, steam, chilled water, electricity, natural gas, and telecommunications. Campus growth also results in secondary growth in the City of Davis, which contributes demand for the City's utility and service systems. Campus and City utilities and services systems are discussed below.

### *Solid Waste*

UC Davis operates a Class III sanitary landfill and provides solid waste collection and disposal services for the campus. Currently, the campus generates approximately 40 to 50 tons of solid waste per day. The permitted capacity of the landfill is 500 tons per day, and the landfill unit currently being used has an anticipated life to 2030. The 2001 City of Davis General Plan update found that the Yolo County Landfill has adequate capacity to accommodate buildout of the city. The landfill is permitted through 2021<sup>35</sup>.

### *Domestic, Utility, and Agricultural Water*

Domestic water is supplied from the deep aquifer by the campus domestic/fire water system. Utility water is supplied from the shallow/intermediate aquifer by the campus utility water system. Water to irrigate the campus' teaching and research fields is obtained primarily from water stored above Lake Berryessa's Monticello Dam and from the shallow/intermediate aquifer. Cumulative effects on the deep and shallow/intermediate aquifers are discussed further in the Hydrology and Water Quality section of this analysis.

### *Wastewater*

The existing campus wastewater system is operated by the campus and is not connected to any regional facility. Major system elements include collectors, sanitary sewer mains, eight lift stations, a treatment plant, and an effluent outfall to the South Fork of Putah Creek near Old Davis Road. The new campus Wastewater Treatment Plant, which began operation in March 2000, is more reliable to operate than the outdated treatment system that was in use when the 1994 LRDP was prepared. The current peak month capacity of the UC Davis Wastewater Treatment Plant, as regulated under the existing NPDES permit, is 2.7 mgd. The WWTP was designed to accommodate the growth anticipated in the 1994 LRDP through 2005-06. The 2001 City of Davis General Plan determined that the City's wastewater infrastructure has been planned and sized to meet development in the City assumed through 2010.

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<sup>35</sup> Yolo County Central Landfill. 2001. Personal Communication. December 14, 2001.

### *Storm Drainage*

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

### *Chilled Water and Steam*

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

### *Electricity*

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

### *Natural Gas*

The campus purchases natural gas from outside vendors and provides it to the campus through PG&E pipelines. Natural gas is provided to four locations on campus for use and distribution: the Central Heating and Cooling Plant, the Primate Plant, the Cogeneration Plant, and the Master Meter #1.

### *Telecommunications*

The campus installed its telecommunications system in 1987. The main switching facility is located in the Telecommunications Building, east of the Central Heating and Cooling Plant. The majority of all voice and data switching equipment and network infrastructure facilities are owned by the campus and operated by UC Davis Communications Resources Service. As new buildings are constructed, Communications Resources coordinates with the UC Davis Office of Architects and Engineers to design and direct the installation of intra- and inter-building telecommunications facilities in accordance with established standards.

### 1994 LRDP EIR Analysis

Impacts of campus growth through 2005-06 on utilities and service systems were addressed in Sections 4.14 (Utilities and Infrastructure) and 4.15 (Energy) of the 1994 LRDP Draft EIR. Cumulative effects associated with groundwater demand are addressed in the Hydrology and Water Quality section of this analysis. Table 1 in Appendix C (Amendments to the 1994 LRDP and Revisions and Updates to the 1994 LRDP EIR) presents 1994 LRDP EIR impacts and mitigation measures, as revised.

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

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

### Potential Cumulative Environmental Effects of Proposed Enrollment

The 1994 LRDP EIR identified that cumulative development could increase the generation of wastewater in the Davis area (Impact 4.14-13). The 1994 LRDP EIR concluded that this cumulative impact was less-than-significant because the planned capacity of wastewater infrastructure in the Davis area was determined adequate to accommodate growth projected for 2010. Campus growth anticipated through 2014-15 would contribute to the population in the Davis area. The 2001 City of Davis General Plan update did not revise the City's growth projections, which assume 75,000 people will be accommodated in the Davis planning area by 2010. The 2001 City of Davis General Plan update determined that the City's wastewater infrastructure has been planned and sized to meet development assumed through 2010. Due to the limited growth of housing in the City (determined by the City's General Plan), increases in the campus population would likely need to reside within other communities in the region. Therefore, increases in the campus population through 2014-15 would not exceed the capacity of the City's wastewater infrastructure, and this impact would likely remain less-than-significant and no mitigation would be required. However, this impact will be fully reevaluated during the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the Davis area could increase the generation of solid waste in the Davis area (Impact 4.14-14). The 1994 LRDP EIR concluded that this cumulative impact was less-than-significant because the planned capacity of the existing Yolo County Landfill was determined adequate to accommodate growth projected through 2025. Although campus growth anticipated through 2014-15 would contribute to the population in the

area and an associated increase in the generation of solid waste, this growth is not anticipated to exceed the capacity of the Yolo County Landfill (which is currently permitted through 2021), and the impact would likely remain less-than-significant and no mitigation would be required. However, this impact will be fully reevaluated during the LRDP update process.

The 1994 LRDP EIR identified that cumulative development in the region would increase the demand for and use of electricity, natural gas and related infrastructure (Impact 4.15-2). Campus growth through 2014-15 would contribute to increased demand for and use of electricity, natural gas and related infrastructure in the region. There is current uncertainty with respect to the cost and supply of electricity throughout California. Because it is too early to determine future sources of energy, it would be speculative to evaluate environmental impacts from the construction and operation of new generating facilities that may be triggered by cumulative development in the region through 2014-15. In addition, the California Energy Commission conducts environmental review for all large generating facilities that are proposed in California. The Commission prepares a CEQA-equivalent document that analyzes and discloses environmental impacts from the construction and operation of new power plants and imposes mitigation measures as conditions of project approval to address significant impacts. In addition, the campus has policies to exceed state standards for energy conservation, and the City of Davis General Plan includes energy conservation policies. As such, this cumulative impact would likely remain less-than-significant and no mitigation would be required. However, this impact will be fully reevaluated during the LRDP update process.

#### Potential Campus-Level Cumulative Environmental Effects through 2014-15

The 1994 LRDP EIR identified three campus-level cumulative utilities and service systems impacts that, with mitigation, could be reduced to less-than-significant levels: direct increase in the demand on campus for water from the domestic/fire water system (Impact 4.14-2) and the utility water system (Impact 4.14-4), and direct increase in the wastewater generated on campus (Impact 4.14-6). The 1994 LRDP EIR also identified six less-than-significant campus-level cumulative impacts on utilities and service systems: indirect increase in demand for water from the City of Davis Domestic Water System (Impact 4.14-5); indirect increase in wastewater generated in the City of Davis (Impact 4.14-7); direct increase in solid waste generated by the campus (Impact 4.14-8); indirect increase in solid waste generated in the City of Davis (Impact 4.14-9); direct increase in demand for telecommunication services on campus (Impact 4.14-10); and increased demand for and use of electricity, natural gas, and related infrastructure (Impact 4.15-1).

Campus growth anticipated through 2014-15 would directly increase demand on campus for water from the domestic/fire water system (Impact 4.14-2) and the utility water system (Impact 4.14-4), and it would increase the wastewater generated on campus (Impact 4.14-6). Continued implementation of 1994 LRDP EIR Mitigation Measures 4.14-2 and 4.14-4 would ensure that water supplies are evaluated before construction of proposed projects and that upgrades are implemented as needed. Mitigation Measure 4.14-6 would be updated to reflect that the new campus Wastewater Treatment Plant is operational, and would ensure that the capacity of the wastewater treatment plant and associated sanitary sewer lines are evaluated and upgraded as needed to meet future demands. The campus anticipates that, with continued implementation of associated mitigation, Impacts 4.14-2, 4.14-3, and 4.14-4 would be reduced to less-than-significant levels. These impacts and any additional feasible mitigation measures will be reexamined during the LRDP update process.

The 1994 LRDP EIR considered Impacts 4.14-5, 4.14-7, and 4.14-9 less-than-significant because the campus determined that the existing and planned City of Davis domestic water system, City of Davis wastewater system, and Yolo County landfill have adequate capacity to accommodate indirect population growth resulting from the 1994 LRDP. Growth anticipated through 2014-15 would increase the campus population, contributing to demand for the City's domestic water and wastewater systems and the Yolo County landfill. The 2001 City of Davis General Plan EIR indicates that adequate capacity exists in the City's domestic water system and sanitary sewer system to accommodate buildout of the City. The Yolo County Landfill is currently permitted through 2021. Therefore, the campus anticipates that these impacts will remain less-than-significant, and no mitigation will be required. These impacts will be reevaluated during the LRDP update process.

The 1994 LRDP EIR determined that Impact 4.14-8 was less-than-significant because the campus landfill was projected to have adequate capacity through 2010. Campus growth anticipated through 2014-15 would increase the demand for solid waste disposal. The campus recently opened the landfill's Waste Management Unit 2, which has an anticipated life to 2030. Therefore, the campus expects that this impact will remain less-than-significant and no mitigation will be required. However, this conclusion will be reevaluated during the LRDP update process.

The 1994 LRDP EIR determined that Impact 4.14-10 was less-than-significant because the campus Communications Resources Services department coordinates with the Office of Architects and Engineers to adequately provide for telecommunications demands on campus. Although campus development through 2014-15 would increase demand for telecommunication services, the campus anticipates that Communications Resources Services will continue to adequately provide for this demand. Therefore, this impact would likely remain less-than-significant, and no mitigation would be required. This impact will be reevaluated during the LRDP update process.

The 1994 LRDP EIR considered Impact 4.15-1 less-than-significant because expansion of natural gas and electrical infrastructure to serve growth anticipated under the 1994 LRDP was determined feasible, and because the campus did not anticipate that additional energy sources were required. Campus growth through 2014-15 would increase demand for and use of electricity, natural gas, and related infrastructure. Expansions of related infrastructure would be required at locations not previously addressed in the 1994 LRDP EIR. However, it is too early in the LRDP update process to determine where these expansions will occur. The campus anticipates that expansions of related infrastructure will be feasible, but it will reexamine this conclusion during the LRDP update process. In order to meet future demands for power, the campus will secure additional natural gas/electricity supply from the market, or it will consider construction of additional power generation facilities on campus (most likely a cogeneration plant). Because the campus will acquire additional energy sources before demand on campus exceeds existing supply, this impact is anticipated to remain less-than-significant. It is too early to determine the nature of future energy sources on campus, and it would therefore be speculative to evaluate environmental impacts from the construction and operation of new generating facilities that may be required. The campus will continue to implement policies to exceed state standards for energy conservation. As such, this impact would likely remain less-than-significant and no mitigation would be required. However, this impact will be fully reevaluated during the LRDP update process.