

2.0 EXECUTIVE SUMMARY

2.1 PURPOSE

This Recirculated Draft Subsequent Environmental Impact Report (SEIR) evaluates the potentially significant environmental effects of the proposed University of California (UC or the University) Merced campus (UC Merced or Campus) 2020 Long Range Development Plan (hereinafter 2020 LRDP).

In March 2009, the Board of Regents of the University of California (The Regents) certified a joint EIS/EIR (State Clearinghouse No. 2008041009) that analyzed and disclosed the significant environmental impacts from the implementation of a Long Range Development Plan (LRDP) for the UC Merced campus, and approved the UC Merced 2009 LRDP as a guide for physical development to accommodate growth projected through 2030 and beyond. The 2009 LRDP addressed the development of the campus to support an enrollment level of 25,000 students by the year 2030 on an 815-acre site. Since then, the University has revised its enrollment projections through 2030 down substantially and has also acquired more land for campus development as a result of the transfer of a portion of the adjoining University Community Land Company (UCLC) property to its former partner, the Virginia Smith Trust. Furthermore, UC Merced plans to accommodate the projected enrollment growth on a smaller developed footprint within the larger campus site. As a result of these changes, UC Merced has developed an updated LRDP which includes a revised land use plan for the campus site.

Before The Regents can approve the proposed LRDP, The Regents must evaluate and disclose the environmental impacts of approving and implementing the proposed 2020 LRDP. According to *State CEQA Guidelines*, a Subsequent EIR is required when a substantial change is proposed to a project for which an EIR has been certified. UC Merced has determined that the changes to the previously approved LRDP are substantial changes and therefore, preparation of a Subsequent EIR is appropriate for the 2020 LRDP. As required by CEQA, this SEIR (1) assesses the potentially significant environmental effects of the proposed 2020 LRDP, including cumulative impacts of the campus development under the 2020 LRDP in conjunction with other reasonably foreseeable development; (2) identifies feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the proposed 2020 LRDP, including the No Project Alternative.

The *State CEQA Guidelines* (Section 15123) requires that a summary be included in an EIR that identifies all major conclusions, identifies each significant effect, recommended mitigation measure(s), and alternatives that would minimize or avoid potential significant impacts. The summary is also required to identify areas of controversy known to the lead agency, including issues raised by agencies and the public and issues to be resolved. These issues include the choice among alternatives and whether or how

to mitigate significant effects. This Executive Summary is intended to address these CEQA requirements and provide the decision makers, responsible agencies, and the public with a clear, simple, and concise description of the proposed project and its potential significant environmental impacts.

The University of California (the University) is the CEQA lead agency for the proposed project. The Regents has the principal responsibility for approving the proposed 2020 LRDP.

This 2020 LRDP SEIR is a First Tier/Program SEIR that evaluates the effects of LRDP implementation at a program level for all environmental topics except aesthetics, agricultural and forest resources, cultural resources, geology and soils, hazardous materials, land use and planning, and minerals which are adequately addressed in the 2009 LRDP EIS/EIR. The 2009 LRDP EIS/EIR, and all addenda that modify the 2009 LRDP, will continue to serve as a First Tier/Program EIR for those topics. With respect to specific development projects that may be proposed during the planning horizon of the 2020 LRDP, CEQA and the *State CEQA Guidelines* state that subsequent projects should be examined in light of the Program EIR to determine whether additional environmental documentation must be prepared. If no new significant effects would occur, all significant effects have been adequately addressed, and no new mitigation measures would be required, the subsequent projects within the scope of the approved LRDP could rely on the environmental analysis provided in the Program EIR, and no additional environmental documentation would be required. On the other hand, if it is determined that subsequent environmental documentation must be prepared, UC Merced will prepare additional CEQA documentation. These additional documents would tier from the 2009 LRDP EIS/EIR or the 2020 LRDP SEIR, as appropriate, for general discussions and for the analysis of cumulative impacts while focusing on more project- and site-specific impacts.

This SEIR also serves as the CEQA document for small-scale development projects proposed on the campus under the 2020 LRDP. This project type would include, but not be limited to, small solar and alternative energy projects, educational and research projects, and small ancillary buildings and structures and their associated infrastructure (i.e., utilities and roads). The projects would be small, involving less than 10,000 square feet of building space or less than 2 acres of ground disturbance, and would be proposed on the campus lands within three specific land use designations: (Campus Mixed Use [CMU], Campus Building Reserve and Support Land [CBRSL], or Research Open Space [ROS]). This project type is analyzed generically in this SEIR for its environmental impacts. As and when a small project is proposed, UC Merced will confirm that it meets the criteria for a small project and is located within these land use designations. If so, no further CEQA documentation would be prepared.

2.2 PROJECT LOCATION

The approximately 1,026-acre project site is the Merced campus of the University of California. The campus is located in eastern Merced County, within the sphere of influence (SOI) of the City of Merced, approximately 2 miles northeast of the city limits. The campus occupies portions of Sections 26, 27, 34, and 35, Township 6 South, Range 14 East; and Sections 3 and 2, Township 7 South, Range 14 East. The site is south southeast of Lake Yosemite Regional Park and east of Lake Road. State Route 99 provides regional access to the project site.

2.3 PROJECT DESCRIPTION

Each campus in the UC system is required to periodically examine its academic goals, and to support those goals, formulate a land use plan in an LRDP. An LRDP is defined by statute (Public Resources Code [PRC] 21080.09) as a “physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education.” As noted above, The Regents approved the 2009 LRDP for the UC Merced campus as a guide for physical development to accommodate enrollment growth projected through 2030. For reasons stated above and described in detail in **Section 1.0, Introduction**, the University determined that an updated LRDP must be prepared to better reflect the revised campus site and changed conditions in the area.

The proposed 2020 LRDP substantially revises the 2009 LRDP with the objective of accommodating projected increases in programs and providing appropriate space and infrastructure for existing and new initiatives on the campus, while allowing for more flexibility in the manner in which facilities are added to the campus to serve the projected enrollment growth. The salient features of the 2020 LRDP are described in **Sections 2.3.1** through **2.3.3** below.

2.3.1 Enrollment Projections

The 2009 LRDP was designed to accommodate an on-campus population of 25,000 students and an associated faculty and staff of 6,560 employees, for a total of 31,560 persons by 2030. UC Merced has revised its enrollment projection for 2030 to 15,000 students (headcount)¹. The 2020 LRDP has been designed to accommodate this level of enrollment and associated smaller increases in faculty and staff

¹ Enrollment at UC campuses is calculated using two metrics. The first metric is headcount which is the actual number of students enrolled at the campus in a given semester or quarter and includes all students that are enrolled whether they are a full-time or a part-time student. The second metric is full-time equivalent (FTE). For this metric, all part-time students are converted into full-time equivalent students using a formula and that number is added to the number of full-time students enrolled at the campus, to get a total FTE count. For most UC campuses including UC Merced, because the majority of the students are full-time students, the headcount is only slightly higher than the FTE number. All analysis in this SEIR is based on headcount.

compared to the previous projections used in the design of the 2009 LRDP for 2030. Campus growth and development through 2020 will be addressed by the ongoing UC Merced 2020 Project which will add an adequate amount of facilities to the campus to accommodate up to 10,000 students by 2020, although when the analysis for this SEIR was commenced, the 2020 enrollment was projected to be 9,700 students. The 2020 LRDP is designed to address campus growth between 2020 and 2030. Between these years, based on an enrollment of 9,700 students in 2020, enrollment is projected to increase by about 5,300 students, and employment at the campus is projected to increase by 1,131 faculty and staff.²

2.3.2 Building Space

Given the lower total enrollment by 2030, UC Merced now projects that it will need to add about 1.83 million gross square feet (gsf) of building space to the campus between 2020 and 2030 to accommodate the projected enrollment increase and expanding academic programs. The 2020 LRDP identifies land area for the development of this amount of additional building space.

2.3.3 Land Use Designations and Map

The proposed 2020 LRDP sets forth a revised land use map to inform the pattern of development on the campus. This land use map replaces the prior 2009 LRDP land use map in full and establishes new land use designations. **Table 2.0-1** below presents a summary of campus land use designations and acres of land under each designation per the proposed 2020 LRDP land use map.

**Table 2.0-1
Land Use Summaries and Acreages**

Land Use Category	Acres
Campus Mixed Use (CMU)	274
Campus Building Reserve and Support Land (CBRSL)	306
Research Open Space (ROS)	135
Active Open Space (AOS)	9
Passive Open Space (POS)	283
Campus Parkway Open Space (CPOS)	19
Total	1,026

² At the time that the analysis in this SEIR was commenced, UC Merced was projecting an enrollment level of 9,700 students by 2020. However, based on Fall 2019 enrollment, the Campus is now expected to have an enrollment of 9,400 students in 2020. This does not affect the 2030 enrollment projection which UC Merced still projects will be 15,000 students. That number is used in the SEIR for all impact analysis.

2.4 PROJECT NEED AND OBJECTIVES

The overall goal of the project is to continue the growth of UC Merced as a premier research university, consistent with the University of California's mission of teaching, research, and service excellence. The overarching objective of the 2020 LRDP is to provide an up-to-date land use plan to guide the physical planning and development of the next phase of campus growth from about 10,000 to 15,000 students, as well as to establish a paradigm for the campus' character.

The following are the specific project objectives that will facilitate accomplishment of the overarching project objective:

- Provide the physical planning framework to guide development that would be needed to accommodate anticipated increases in enrollment demand for the University of California system, both short-term and long-term.
- Reduce the costs of the next phase of campus development.
- Plan for a compact, pedestrian-oriented campus that reduces the need for new infrastructure.
- Plan and develop the campus to facilitate faculty-student interaction, ease and enjoyment of use of academic facilities, and an environment conducive to learning.
- Offer attractive and centrally located on-campus housing, consistent with UC-wide student housing policies.
- Provide opportunities for on-campus academic field research.
- Provide sufficient athletic facilities to offer high-quality NCAA, recreational, and club athletic programs commensurate with other premier universities.
- To the extent practicable, plan and develop the campus with sustainable design by incorporating energy efficiency, water conservation, protection of biological resources, waste reduction and minimization, on-site stormwater management and reduced dependence on automobiles.
- Promote community integration and reflect the landscape, history, resources, and diverse cultures of the San Joaquin Valley in terms of physical development.

2.5 TOPICS OF KNOWN CONCERN

To determine which environmental topics should be addressed in this SEIR, UC Merced circulated a Notice of Preparation (NOP) in order to receive input from interested public agencies and private parties. A copy of the NOP is presented in **Appendix 1.0** of this SEIR. Based on the NOP comments and the analysis in the Initial Study that accompanied the NOP, this SEIR addresses the following environmental topics in depth:

- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Tribal Cultural Resources
- Utilities
- Energy

2.6 ISSUES TO BE RESOLVED/AREAS OF CONTROVERSY

Specific issues that were raised in scoping comments include the following:

- Impacts of campus demand on water supply, especially in light of the Sustainable Groundwater Management Act;
- Impact of the higher density, high-rise campus development under the 2020 LRDP on aesthetics, including light and glare.
- Impacts on study area housing resources given the increase in student population and the fact that a University Community is unlikely to be developed adjacent to the campus within the timeframe of the LRDP;
- Impacts on public services, especially fire service provided by both the City and the County;
- Impacts on water and wastewater infrastructure from the growth of the campus under the 2020 LRDP;
- Impacts of increased campus-related traffic on the transportation system, including traffic impacts that would result if the portion of Campus Parkway north of Yosemite Avenue is not built;
- Consideration of mitigation measures put forth by Merced Irrigation District (MID) for potential effects on MID facilities on the campus;
- Recommendation by the Native American Heritage Commission (NAHC) that UC Merced conduct consultation with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources; and
- Recommendation by the California Department of Toxic Substances Control (DTSC) to confirm the absence of prior releases of hazardous materials on development sites on the campus.

All applicable scoping comments are addressed in the impact analysis. The visual effects from increasing building density and building heights on the campus were analyzed by the University in an addendum to the 2009 LRDP EIR at the time that the 2020 Project was planned. The proposed heights and densities

under the 2020 LRDP are consistent with those approved and developed by the University in conjunction with the 2020 Project. Further evaluation is not required. Regarding the recommendation from the DTSC, there have been no releases of hazardous substances on the campus. Other than the barn, which has been demolished, there are no older structures on the campus site that could contain asbestos and/or lead based paint. Further, historical agricultural uses of the campus lands have included grazing and irrigated pasture and have not involved the use of fertilizers or pesticides.

2.7 ALTERNATIVES

Consistent with CEQA requirements, a reasonable range of alternatives were considered and evaluated in this SEIR. Two alternatives that were considered were found to be infeasible and were not carried forth for detailed evaluation. Two alternatives that were considered feasible were evaluated in detail along with the mandated No Project Alternative. The alternatives evaluated in detail are presented below.

2.7.1 Alternative 1: No Project

State CEQA Guidelines require the analysis of a No Project Alternative (Section 15126.6(e)). The analysis must discuss existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the proposed project were not to be approved, based on current plans, site zoning, and consistent with available infrastructure and community services. If a project is a development project on an identifiable site, *State CEQA Guidelines* Section 15126.6(e)(3)(B) provides that the discussion of the No Project Alternative should compare the environmental effects of the site remaining in its existing state against environmental effects which would occur if the project is approved.

The proposed 2020 LRDP is a land use plan and policy document to guide campus development. An LRDP does not limit or induce enrollment growth. Instead, using the enrollment and employment growth projections, UC Merced has estimated the amount of additional building space (academic, administrative, housing, student services, athletics, and support) that would be needed to accommodate the projected growth. Using the estimated building space and program needs, UC Merced has prepared the LRDP land use diagram that identifies areas within the campus site where the new building space or facilities could or should be built. Given that the LRDP is only a planning document that plans for but does not cause enrollment growth, if the proposed 2020 LRDP is not approved, enrollment and employment at UC Merced would continue to grow as currently projected to 15,000 students by 2030, and campus development would be guided by the previously approved 2009 LRDP, as amended in 2013 and 2017.

Building Program

Under the No Project Alternative, UC Merced would continue to grow at a rate similar to the rate of enrollment and employment growth analyzed for the proposed 2020 LRDP and the same amount of building space (about 1.83 million gsf) would be constructed on the campus site to accommodate the projected growth.

Campus Population

For reasons presented above, under the No Project Alternative, campus enrollment would grow to 15,000 students by 2030, and the faculty and staff would increase to about 2,411 employees.

Land Use Diagram

Development of the new facilities within the campus site under this alternative would be guided by the land use plan included in the 2009 LRDP as amended. That LRDP includes a land use plan for the 815-acre site but does not include 211 acres that are now a part of the campus. As there is no land use plan to guide the development of new facilities on the newly added 211 acres, projects within the newly added area would be developed without the benefit of a land use plan as the University Community Plan is for the development of a mixed-use community on the University Community North site and is not applicable or relevant to campus development. Compared to the proposed 2020 LRDP which limits the siting of new campus buildings to an approximately 274-acre area designated CMU, this alternative would allow campus buildings to be located on all lands except those designated Passive Open Space, and a dispersed and less dense development would likely result under this alternative.

2.7.2 Alternative 2: Reduced Development

The Reduced Development Alternative was developed in order to reduce the increase in vehicle trips to the campus and traffic-related impacts of the proposed project. Under this alternative, future campus development would be planned to accommodate a lower enrollment level by 2030.

Building Program

The proposed 2020 LRDP plans building space to accommodate the projected growth in enrollment between 2020 and 2030, after the completion of the 2020 Project. Similarly, this alternative also plans for the growth in enrollment between 2020 and 2030 but at a lower annual rate such that by 2030, there would be 12,500 students. To accommodate this lower enrollment level, the building program for academic and housing space under the Reduced Development Alternative would be about 45 percent less than analyzed for the 2020 LRDP. Therefore, instead of the addition of about 1.83 million gsf of new

building space, UC Merced would add approximately 1.01 million gsf of new building space between 2020 and 2030.

Campus Population

Under this alternative, the enrollment would increase from about 9,700 students in 2020 to 12,500 students in 2030, an increase of about 2,800 new students. Similar to the proposed project, it is assumed that slightly more than half of the new students would be housed on the campus and the rest of the new students would live off-campus.

Assuming that the same student to faculty/staff ratio is maintained under this alternative as is represented by the proposed project, approximately 734 new on-campus employees would be added under this alternative. Therefore, under this alternative a total of 3,534 new students and employees would be added to the campus between 2020 and 2030.

The campus population increase would be about 45 percent less than the increase of 6,431 new students and employees analyzed for the 2020 LRDP. The total on-campus population by 2030 under this alternative (that is, existing population plus projected growth) would be approximately 14,514 persons, which is about 17 percent lower than the 2030 population of about 17,411 persons analyzed for the 2020 LRDP.

Land Use Diagram

With regard to the land use diagram, it is assumed that the diagram under this alternative would be the same as the land use diagram under the proposed 2020 LRDP. As with the proposed 2020 LRDP, the new facilities would be built within the 274-acre area designated CMU. With the building program reduced by about 45 percent under this alternative compared to the proposed project, less acreage within the CMU area would be developed with new facilities under this alternative.

2.7.3 Alternative 3: Distributed Employment Location Alternative

The Distributed Employment Location Alternative was developed to reduce the increase in the number of daily and peak hour vehicle trips to the campus and traffic-related impacts. Under this alternative, about 35 percent of the new staff employees would be located off campus.

Building Program

As a result of locating some of the new staff off campus under this alternative, the building program would be slightly reduced compared to that analyzed for the 2020 LRDP. Therefore, instead of the

addition of about 1.83 million gsf of new building space to the campus, UC Merced would add approximately 1.78 million gsf of new building space to the campus and would lease or construct about 45,000³ square feet of building space in Merced to house the 267 new employees who would be located off campus.

Campus Population

Under this alternative, enrollment at the campus would increase at the same rate as analyzed for the 2020 LRDP such that there would be 15,000 students by 2030, an increment of 5,300 students between 2020 and 2030. On-campus resident students would be the same as analyzed for the 2020 LRDP. The increase in faculty and staff would also be the same, with 346 new faculty and 785 new staff added between 2020 and 2030. However, while all of the additional faculty would be located on the campus, 65 percent of the new staff (518 new staff) would be located on the campus and about 267 of the new staff would be located off campus.

Land Use Diagram

With regard to the land use diagram, it is assumed that the diagram under this alternative would be the same as the land use diagram under the proposed 2020 LRDP. With the building program reduced by about 2 percent under this alternative compared to the proposed project, slightly less area within the 274-acre CMU area would be developed with new facilities under this alternative.

2.8 IMPACT SUMMARY

A detailed discussion regarding potential environmental impacts of the proposed project is provided in **Section 4.0 Environmental Setting, Impacts and Mitigation Measures**. A summary of the impacts of the proposed 2020 LRDP is provided in **Table 2.0-2, Summary of LRDP Impacts and Mitigation Measures**. Also provided in **Table 2.0-2** are mitigation measures that are proposed to avoid or reduce significant project impacts. The table indicates whether implementation of the recommended mitigation measures would reduce the impact to a less than significant level. **Table 2.0-3, Summary Comparison of Alternatives**, presents the environmental impacts of each alternative to allow the decision makers, agencies and the public to compare and contrast these alternatives and weigh their relative merits and demerits.

³ Calculated based on a rate of 165 square feet per employee. The rate was derived from the Downtown Center, which is a 75,000 gsf building for 454 employees.

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Air Quality			
<p>LRDP Impact AQ-1: Campus development under the 2020 LRDP would not result in construction emissions that would result in a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.</p>	<p align="center"><i>Less than Significant</i></p>	<p>LRDP MM AQ-1a: The construction contractors shall be required via contract specifications to use construction equipment rated by the U.S. EPA as meeting Tier 4 (model year 2008 or newer) emission limits for engines between 50 and 750 horsepower.</p> <p>LRDP MM AQ-1b: UC Merced shall include in all construction contracts the measures specified in SJVAPCD Regulation VIII (as it may be amended for application to all construction projects generally) to reduce fugitive dust impacts, including but not limited to the following:</p> <ul style="list-style-type: none"> • All disturbed areas, including storage piles, which are not being actively utilized for construction purpose, shall be effectively stabilized of dust emissions using water, chemical stabilizer/ suppressant, or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/ suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions using application of water or by presoaking. • When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit visible dust emissions. Use of blower devices is expressly forbidden.) 	<p align="center">N/A</p>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, storage piles shall be effectively stabilized of fugitive dust emissions by using sufficient water or chemical stabilizer/ suppressant. 	
<p>LRDP Impact AQ-2: Campus development under the 2020 LRDP would result in operational emissions that would involve a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.</p>	<p align="center"><i>Significant</i></p>	<p>LRDP MM AQ-2a: UC Merced shall implement the following measures to reduce emissions from vehicles:</p> <ul style="list-style-type: none"> Provide pedestrian-enhancing infrastructure to encourage pedestrian activity and discourage vehicle use. Provide bicycle facilities to encourage bicycle use instead of driving, such as bicycle parking, bicycle lanes, bicycle lockers; and showers and changing facilities for employees. Provide preferential carpool and vanpool parking for non-residential uses. Provide transit-enhancing infrastructure to promote the use of public transportation, such as covered bus stops and information kiosks. Provide facilities, such as electric car charging stations and a CNG refueling station, to encourage the use of alternative-fuel vehicles. Improve traffic flows and congestion by timing of traffic signals at intersections adjacent to the campus to facilitate uninterrupted travel. Work with campus transit provider to replace CatTracks buses with either electric buses or buses operated on alternative fuels. Work with the City of Merced to establish park and ride lots and provide enhanced transit service between the park and ride lots and the campus. Replace campus fleet vehicles with electric vehicles or vehicles that operate on alternative fuels. Reduce the number of daily vehicle trips by providing more housing on campus. 	<p align="center"><i>Significant and Unavoidable</i></p>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>LRDP MM AQ-2b: UC Merced shall implement the following measures to reduce emissions from area and energy sources, as feasible:</p> <ul style="list-style-type: none"> • Utilize low-VOC cleaning supplies and low-VOC paints (100 grams/liter or less) in building maintenance. • Utilize electric equipment for landscape maintenance. • Plant low maintenance landscaping. • Implement a public information program for resident students to minimize the use of personal consumer products that result in ROG emissions, including information on alternate products. • Instead of natural gas water heaters, install solar water heating systems. 	
<p>LRDP Impact AQ-3: Implementation of the 2020 LRDP would not expose sensitive receptors to substantial pollutant concentrations of carbon monoxide.</p>	<p align="center"><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p align="center"><i>N/A</i></p>
<p>LRDP Impact AQ-4: Implementation of the 2020 LRDP would not conflict with or obstruct implementation of the applicable air quality plan.</p>	<p align="center"><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p align="center"><i>N/A</i></p>
<p>LRDP Impact AQ-5: Implementation of the 2020 LRDP would not result in odors adversely affecting a substantial number of people.</p>	<p align="center"><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p align="center"><i>N/A</i></p>
<p>Cumulative Impact C-AQ-1: The construction and operation of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, could hinder air quality attainment and maintenance efforts for criteria pollutants.</p>	<p align="center"><i>Significant</i></p>	<p>Cumulative MM C-AQ-1: Implement LRDP MM AQ-2a and AQ-2b. No additional mitigation is available.</p>	<p align="center"><i>Significant and Unavoidable</i></p>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Biological Resources			
LRDP Impact BIO-1: Implementation of the 2020 LRDP would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact BIO-2: Implementation of the 2020 LRDP would not result in adverse impacts on special-status plant species.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact BIO-3: Implementation of the 2020 LRDP would not result in a substantial adverse impact on special-status invertebrate species due to the loss of vernal pool ecosystems or designated critical habitat for the species.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact BIO-4: Implementation of the 2020 LRDP would result in a potentially significant adverse impact on nesting and overwintering habitat for the Crotch bumble bee.	<i>Potentially Significant</i>	<p>LRDP MM BIO-4: A qualified wildlife biologist shall conduct visual surveys of the development area during the flight season for the Crotch bumble bee (late February through late October). Between two and four evenly spaced surveys shall be conducted for the highest detection probability, including surveys in early spring (late March/early April) and early summer (late June/July). Surveys shall take place when temperatures are above 60°F, preferably on sunny days with low wind speeds (e.g., less than 8 miles per hour) and at least 2 hours after sunrise and 3 hours before sunset. On warm days (e.g., over 85°F), bumble bees will be more active in the mornings and evenings. Surveyors shall conduct transect surveys focusing on detection of foraging bumble bees and underground nests using visual aids such as butterfly binoculars. If no Crotch bumble bees or potential Crotch bumble bees are detected, no further mitigation is required.</p> <p>If Crotch bumble bees or potential Crotch bumble bees are observed within the development area, a plan to protect Crotch bumble bee nests and individuals shall be developed and implemented in consultation with</p>	<i>Less than Significant</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>CDFW. The plan shall include, but not be limited to, the following measures:</p> <ul style="list-style-type: none"> • Specifications for construction timing and sequencing requirements (e.g., avoidance of raking, mowing, tilling, or other ground disturbance until late March to protect overwintering queens); • Preconstruction surveys conducted within 30 days and consistent with any current available CDFW standards prior to the start of ground disturbing activities to identify active nests; • Establishment of appropriate no-disturbance buffers for nest sites and construction monitoring by a qualified biologist to ensure compliance; • Restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., avoidance of pesticides/herbicides, BMPs to minimize the spread of invasive plant species); • Provisions to avoid Crotch bumble bees or potential Crotch bumble bees if observed away from a nest during project activity (e.g., ceasing of project activities until the animal has left the work area on its own volition); and • Prescription of an appropriate restoration seed mix targeted for the Crotch bumble bee, including native plant species known to be visited by native bumble bee species and containing a mix of flowering plant species with continual floral availability through the entire active season of the Crotch bumble bee (March to October). 	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
LRDP Impact BIO-5: Implementation of the 2020 LRDP would not result in a substantial adverse impact on special-status amphibians (California tiger salamanders and western spadefoot) dependent on vernal pool ecosystems, annual grasslands, and stock ponds due to the loss of these habitats and would not result in mortality of individual amphibians during construction of campus facilities due to compliance with permits.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
LRDP Impact BIO-6: Implementation of the 2020 LRDP would not result in a substantial adverse impact on western pond turtle from the loss or disturbance of ponds and seasonal freshwater marsh communities.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
LRDP Impact BIO-7: Implementation of the 2020 LRDP would not result in a substantial adverse impact on Swainson's hawk from the loss of suitable foraging or nesting habitat.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
LRDP Impact BIO-8: Implementation of the 2020 LRDP would not result in a substantial adverse impact on special-status avian species from the loss of foraging habitat.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
LRDP Impact BIO-9: Implementation of the 2020 LRDP would result in potentially significant adverse impacts on special-status bird species and non-special-status migratory birds and raptors.	<i>Potentially Significant</i>	<p>LRDP MM BIO-9a: Avoid and minimize impacts on native birds protected under the MBTA, including listed species, fully protected species, special-status species of concern, and raptors and passerines.</p> <p>(a) Limit ground disturbance activities to the non-breeding season and remove potential unoccupied breeding habitat during the non-breeding season if possible. If breeding season work is required, conduct take avoidance (tree, shrub, and ground) nest surveys to identify and avoid active nests.</p> <ul style="list-style-type: none"> If feasible, UC Merced shall conduct all project-related activities including (but not limited to) tree and shrub removal, other vegetation clearing, grading, or other ground disturbing activities during the non-breeding 	<i>Less than Significant</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>season (typically between September 16 and February 14).</p> <ul style="list-style-type: none"> • If activities are scheduled to occur during the breeding season (typically between February 15 through September 15), applicable CDFW and/or USFWS permit conditions in the permits issued to the University related to bird surveys must be followed. In addition, a UC Merced-approved qualified avian biologist, with knowledge of the species to be surveyed, shall conduct focused nesting surveys within 15 days prior to the start of project or ground-disturbing activities and within the appropriate habitat. The qualified avian biologist shall determine the exact survey duration and location (typically 500 feet around the work area) based on the work conditions and shall take into account existing applicable CDFW or USFWS permit conditions. • If an unoccupied nest (without birds or eggs) of a non-listed or fully protected species (as determined by the qualified avian biologist) is found, the nest shall be removed under the direction of the qualified avian biologist. • If an active nest is located, a qualified avian biologist shall establish an appropriate no-disturbance buffer around the nest making sure that any buffer width required by the University's permit obligations is followed. A 500-foot buffer is recommended for listed or fully protected nesting birds (or another buffer determined in consultation with CDFW and/or USFWS), a 250-foot buffer around raptors, and a 75-foot buffer around passerines. If work activities cause or contribute to a bird being flushed from a nest, the buffer width shall be adjusted to avoid and minimize impacts to nesting birds. 	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • A qualified avian biologist shall monitor the nest site regularly during work activities to ensure that the nest site is not disturbed, the buffer is maintained and the success or failure of the nest is documented. • If UC Merced elects to remove a nest tree, nest trees may only be removed after the qualified avian biologist has determined that the nests are unoccupied. • If an active nest is causing a safety hazard, CDFW shall be contacted to determine if the nest can be removed. <p>(b) Minimize impacts to burrowing owl and compensate for habitat loss.</p> <p>CDFW (2012) recommends that take-avoidance (preconstruction) surveys be conducted to locate active burrowing owl burrows in the construction work area and within an approximately 500-foot buffer zone around the construction area. a qualified avian biologist shall conduct take avoidance surveys for active burrows according to the CDFW’s Staff Report on Burrowing Owl Mitigation (2012 Staff Report). Surveys shall be conducted no less than 14 days prior to initiating ground disturbance activities and surveillance surveys should be conducted as frequently as recommended in the 2012 Staff Report. If ground-disturbing activities are delayed or suspended for than 30 days after the take avoidance survey, the area shall be resurveyed. If no burrowing owls are detected, no further mitigation is required.</p> <p>If active burrowing owls are detected, the following additional measures are required:</p> <ul style="list-style-type: none"> • Project implementation shall seasonally and spatially avoid negative impacts and disturbances that could result in the take of burrowing owls, nest or eggs. 	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • If burrowing owls and their habitat can be protected in place or adjacent to a construction site, buffer zones, visual screens or other measures shall be used to minimize disturbance impacts while project activities are occurring. To use these minimization measures, a qualified avian biologist shall determine the exact measures following the guidance described in the 2012 Staff Report. • If owls must be moved away from the project site during the nonbreeding season, passive relocation techniques (e.g., installing one-way doors at burrow entrances) shall be used instead of trapping, as described in CDFW guidelines. At least 1 week will be necessary to complete passive relocation and allow owls to acclimate to alternate burrows. • When destruction of occupied burrows is unavoidable during the nonbreeding season (September 1 to January 31), unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on protected lands approved by the CDFW. Newly created burrows shall follow guidelines established by the CDFW. <p>LRDP MM BIO-9b: New buildings and structures proposed under the 2020 LRDP shall incorporate bird-safe design practices (for example, American Bird Conservancy's <i>Bird-Friendly Building Design</i> [2015] or San Francisco Planning Department's <i>Standards for Bird-Safe Buildings</i> [2011]). The UC Merced Physical and Environmental Planning Department shall review the final designs of the buildings and structures to determine that appropriate bird safety designs have been effectively incorporated to reduce potential impacts to birds. The following design strategies shall be considered in the design of buildings and structures:</p>	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Create building facades with “visual noise” via cladding or other design features that make it easier for birds to identify buildings and not mistake windows for open sky or trees. • Incorporate windows that are not clear or reflective into the building or structure designs. • Use windows that incorporate glass types such as UV-A or fritted glass and windows that incorporate UV-absorbing and UV-reflecting stripe. • Use grid patterns on windows in locations with the highest potential for bird-window collisions (e.g., windows at the anticipated height of adjacent vegetation at maturity). • Reduce the proportion of glass to other building materials in new construction. • Avoid placement of bird-friendly attractants (i.e. vegetated roofs, water features, tall trees) near glass whenever possible. • Install motion-sensitive lighting in any area visible from the exterior that automatically turn lights off during after-work hours. 	
<p>LRDP Impact BIO-10: Implementation of the 2020 LRDP would not result in substantial adverse impacts to San Joaquin kit fox due to the loss of suitable residence and dispersal habitat.</p>	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
<p>Cumulative Impact C-BIO-1: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in the loss or adverse modification of vernal pool wetlands, clay slope wetlands, and other seasonal wetlands.</p>	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative Impact C-BIO-2: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in the loss or adverse modification of important special-status plant and wildlife habitat, including adverse effects to special-status plant and wildlife species that occupy or could potentially occupy these habitats.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Greenhouse Gas Emissions			
LRDP Impact GHG-1: Implementation of the 2020 LRDP would generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment.	<i>Significant</i>	<p>LRDP MM GHG-1a: UC Merced shall set a goal to reduce or control the increase in its GHG emissions such that the total emissions do not exceed 3,300 MTCO_{2e}/year by the end of the year 2030.</p> <p>UC Merced shall monitor GHG emissions each year, monitor upcoming projects for their potential to increase the campus' GHG emissions, and implement project-specific and campus-wide GHG reduction measures to reduce the campus' GHG emissions in accordance with the 3,300 MTCO_{2e}/year goal for 2030.</p> <p>In the event that adequate reduction is not achieved by these measures, UC Merced shall purchase renewable energy credits, or other verifiable GHG offsets to keep the net emissions at or below 3,300 MTCO_{2e}/year.</p> <p>LRDP MM GHG-1b: UC Merced shall implement LRDP Mitigation Measures AQ-2a and -2b.</p> <p>LRDP MM GHG-1c: UC Merced shall periodically review new technologies that can be implemented to further reduce the campus' GHG emissions.</p>	<i>Less than Significant</i>
LRDP Impact GHG-2: Implementation of the 2020 LRDP would conflict with state law, UC Sustainable Practices Policy, or the UC Merced Climate Action Plan, adopted for the purpose of reducing the emissions of greenhouse gases.	<i>Significant</i>	LRDP MM GHG-2: Implement LRDP Mitigation Measures GHG-1a, 1b, and 1c.	<i>Less than Significant</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative Impact C-GHG-1: Implementation of the 2020 LRDP would result in a significant cumulative GHG impact.	<i>Significant</i>	Cumulative MM C-GHG-1: Implement LRDP Mitigation Measures GHG-1a, 1b, and 1c.	<i>Less than Significant</i>
Hydrology and Water Quality			
LRDP Impact HYD-1: Campus development under the 2020 LRDP would not substantially interfere with groundwater recharge nor substantially decrease groundwater supplies.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
LRDP Impact HYD-2: Campus development under the 2020 LRDP would not substantially alter the existing drainage pattern of the campus site through alteration of a water course or through the addition of impervious surfaces such that it would result in substantial erosion or siltation on or off site, result in flooding on or off site, contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or impede or redirect flood flows.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Cumulative Impact C-HYD-1: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, could cumulatively increase surface runoff but would not increase local and regional flooding.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Cumulative Impact C-HYD-2: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not substantially interfere with groundwater recharge but would deplete groundwater supplies and contribute to the overdraft of the regional groundwater aquifer.	<i>Significant</i>	Cumulative MM C-HYD-2: UC Merced shall work with the regional water agencies, including the City of Merced and MID, to develop programs to expand conjunctive use capabilities, increase recharge, and reduce groundwater demand.	<i>Significant and Unavoidable</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Noise			
LRDP Impact NOI-1: Implementation of the 2020 LRDP would not substantially increase ambient traffic noise levels at existing off-site noise-sensitive uses.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact NOI-2: Daily operations on the campus under the 2020 LRDP would not expose existing off-site and future on-site noise-sensitive receptors to noise levels in excess of applicable standards.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact NOI-3: Construction activities associated with development under the 2020 LRDP could expose existing off-site and future on-site noise-sensitive receptors to elevated noise levels.	<i>Potentially Significant</i>	<p>LRDP MM NOI-3: Prior to initiation of construction on a project that is within 500 feet of off-site residential receptors, UC Merced shall develop and implement a construction noise mitigation program for that project that includes but is not limited to the following:</p> <ul style="list-style-type: none"> • Construction activities within 500 feet of any residences shall be restricted to the hours of 7:00 AM and 6:00 PM on weekdays and Saturdays with no construction on Sundays and holidays. • All noise-producing project equipment and vehicles using internal combustion engines shall be equipped where appropriate with exhaust mufflers and air-inlet silencers in good operating condition that meet or exceed original factory specifications. • Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment. • All mobile or fixed noise-producing equipment used on the project that is regulated for noise output by local, state or federal agency shall comply with such regulation while engaged in project-related activities. • Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable. 	<i>Less than Significant</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> • Material stockpiles, mobile equipment staging, construction vehicle parking, and maintenance areas shall be located as far as practicable from noise-sensitive land uses. • Stationary noise sources such as generators or pumps shall be located away from noise-sensitive land uses as feasible. • The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. No project-related public address loudspeaker, two-way radio, or music systems shall be audible at any adjacent noise-sensitive receptor except for emergency use. • The erection of temporary noise barriers shall be considered where project activity is unavoidably close to noise-sensitive receptors. • The noisiest construction operations shall be scheduled to occur together to avoid continuing periods of the greatest annoyance, wherever possible. • Construction vehicle trips shall be routed as far as practical from existing residential uses. • The loudest campus construction activities, such as demolition, blasting, and pile driving, shall be scheduled during summer, Thanksgiving, winter, and spring breaks when fewer people would be disturbed by construction noise. • Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed a week before the start of each construction project. 	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
LRDP Impact NOI-4: Pile driving activities during construction could expose nearby receptors to perceptible levels of ground-borne vibration.	<i>Potentially Significant</i>	<p>LRDP MM NOI-4a: UC Merced shall avoid impact pile driving where possible in vibration-sensitive areas. Drilled piles or the use of vibratory pile driving will be used where geological conditions permit their use. For impact pile driving activities occurring within 50 feet of typical structures, limit groundborne vibration due to construction activities to 0.50 inch/second, ppv (limit of potential for damage to typical structures) in the vertical direction at sensitive receptors. Since in many cases the information available during the preliminary engineering phase would not be sufficient to define specific vibration mitigation measures, UC Merced shall describe and commit to a mitigation plan to minimize construction vibration damage using all feasible means available.</p> <p>LRDP MM NOI-4b: For construction adjacent to highly sensitive uses such as laboratories, UC Merced shall apply additional measures as feasible, including advance notice to occupants of sensitive facilities to ensure that precautions are taken in those facilities to protect ongoing activities from vibration effects.</p>	<i>Less than Significant</i>
Cumulative Impact C-NOI-1: Development on the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not generate a substantial permanent increase in noise levels at off-site locations.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-NOI-2: Noise from construction and/or stationary sources on the campus, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not combine to substantially affect the same sensitive receptors.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Population and Housing			
LRDP Impact PH-1: Implementation of the 2020 LRDP would not result in substantial unplanned population growth and related demand for housing in the City of Merced and in surrounding communities.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-PH-1: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not substantially increase regional population.	<i>Less than Significant</i>	No mitigation is required.	N/A
Public Services and Recreation			
LRDP Impact PUB-1: Implementation of the 2020 LRDP would increase demand for law enforcement services and would require the construction of new facilities, but the impacts from construction would be less than significant with mitigation.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact PUB-2: Implementation of the 2020 LRDP would increase demand for fire protection services and could require an expansion of an existing fire station or the construction of a new facility, but the impacts from construction would be less than significant with mitigation.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact PUB-3: Implementation of the 2020 LRDP would increase enrollment in local public schools.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact PUB-4: Implementation of the 2020 LRDP would not substantially increase demand for public libraries.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
LRDP Impact PUB-5: Implementation of the 2020 LRDP would result in an increased demand for parks and recreational facilities but would not require the construction of new recreational facilities off site.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact PUB-6: Implementation of the 2020 LRDP would increase the use of Lake Yosemite Regional Park which could accelerate physical deterioration of park facilities.	<i>Potentially Significant</i>	<p>LRDP MM PUB-6a: UC Merced shall work with the County to avoid physical deterioration of existing facilities at Lake Yosemite Regional Park, and/or improve park facilities within the existing park site as necessitated by the increased uses associated with development of the campus.</p> <p>LRDP MM PUB-6b: UC Merced will pay its fair share of the cost of necessary improvements to the regional park. UC Merced's share of funding will be based on the percentage that on-campus residential population represents of the total population in eastern Merced County at the time that an improvement is implemented.</p> <p>LRDP MM PUB-6c: In recognition of the sensitive resources present on lands immediately adjacent to the regional park, all regional park improvement projects that are implemented by the County within 250 feet of the park's eastern boundary pursuant to LRDP Mitigation Measures PUB-6a and PUB-6b above, will implement mitigation measures to avoid and minimize indirect effects on biological resources.</p>	<i>Less than Significant</i>
Cumulative Impact C-PUB-1: Campus development under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would result in increased need for law enforcement services, the provision of which would not result in a significant cumulative environmental impact.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative Impact C-PUB-2: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would generate an increased demand for fire protection services, the provision of which would not result in a significant cumulative environmental impact.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-PUB-3: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would generate an increased demand for elementary and secondary school facilities, the provision of which would not result in a significant cumulative impact.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-PUB-4: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would result in increased demand for library services, the provision of which would not result in a significant cumulative impact.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-PUB-5: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in a cumulative impact related to neighborhood and community parks, but would result in a cumulative impact associated with the deterioration of the Lake Yosemite Regional Park facilities from increased use. The proposed project's contribution would not be cumulatively considerable.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Transportation			
<p>LRDP Impact TRANS-1: Implementation of the 2020 LRDP would significantly affect study area intersections during peak commute hours under 2030 plus project conditions.</p>	<p align="center"><i>Significant</i></p>	<p>LRDP MM TRANS-1: Campus Traffic Mitigation Program (CTMP). The Campus Traffic Mitigation Program is a program to monitor trip generation, reduce peak-hour trips, and participate in roadway improvements to mitigate impacts at off-campus intersections, and adjacent roadway segments in the case of Lake Road, determined to be affected by the development of the campus under the 2020 LRDP. CEQA provides that an agency can mitigate its contribution to local and regional environmental impacts by contributing its proportional share of funding to mitigation measures designed to alleviate the identified impact (<i>CEQA Guidelines</i> §15130(a)(3)).</p> <p>The CTMP will consist of the following elements/ measures:</p> <p>Measure TRANS-1a: Travel Demand Management. To reduce on- and off-campus vehicle trips and resulting impacts, the University will continue to implement and expand a range of Transportation Demand Management (TDM) strategies. TDM strategies will include measures to encourage transit and shuttle use and alternative transportation modes including bicycle transportation, implement parking policies that reduce demand, and implement other mechanisms that reduce vehicle trips to and from the campus. The University shall monitor the performance of campus TDM strategies through annual surveys.</p> <p>Measure TRANS-1b: Transit Enhancement. To enhance transit systems serving the campus, the University will work cooperatively with the City of Merced, County of Merced, CalTracks, The Bus, StaRT, YARTS, and other local agencies to coordinate service routes with existing and proposed shuttle and transit programs.</p>	<p align="center"><i>Significant and Unavoidable</i></p>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Measure TRANS-1c: Sustainability and Monitoring. The University will review individual projects proposed under the 2020 LRDP for consistency with UC Sustainable Practices Policy and UC Merced TDM strategies set forth in the 2020 LRDP to ensure that bicycle and pedestrian improvements, alternative fuel infrastructure, transit stops, and other project features that promote alternative transportation are incorporated in the project.</p> <p>Measure TRANS-1d: Campus Traffic Impact Monitoring. The University will monitor trip generation resulting from the campus development under the 2020 LRDP to track the actual trip generation relative to the projections in this SEIR. The University will conduct traffic cordon counts of the campus with each 2,000-person increase in student population, measured by three-term average headcount enrollment increases with 2019 – 2020 as the base academic year. If this monitoring determines that traffic attributable to the campus contributes to a significant traffic impact at any of the intersections listed in Table 4.8-9, the University will implement measures to reduce vehicle trips contributing to the impact or provide its proportional share of funding for improvements at the impacted intersections presented in Table 4.8-9.</p> <p>Measure TRANS-1e: Proportional Share Determination. At the time a significant impact is identified pursuant to the monitoring under Measure TRANS-1d, the University’s actual percent contribution to the total traffic volume at pertinent intersections and roadway segments will be calculated and used as the basis for determining the University’s mitigation obligation, or proportional share of funding for the traffic improvements listed in the table.</p>	

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Measure TRANS-1f: Mitigation Payments. The amount of the University's mitigation funding will be based on the University's proportional share of the affected jurisdiction's actual cost of the relevant traffic improvement(s) at the time of final bid/contract documents. The amount will be calculated by applying the University's proportional share determined in Measure TRANS-1e to the total cost of the improvement. Funding will be internally committed by the University at the time the traffic impact is triggered pursuant to the results of monitoring under Measure TRANS-1d. Payments will be made to the appropriate jurisdiction at the time a Notice to Proceed with the construction of the improvements is issued. If improvements are constructed before the impact is triggered, the University will pay its proportional share at the time that the impact is triggered, based on the University's monitoring under Measure TRANS-1d. Mitigation payments will be made only after the University has been provided the opportunity to review the scope and budget of the improvement project. As Intersection #3, Lake/Bellevue Road intersection, directly serves the campus, the University will be responsible for the entire cost of improvements at this intersection.</p>	
<p>LRDP Impact TRANS-2: Implementation of the 2020 LRDP would not significantly impact study area freeway segments under 2030 plus project conditions.</p>	<p><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p>N/A</p>
<p>LRDP Impact TRANS-3: Implementation of the 2020 LRDP would not significantly impact transit facilities.</p>	<p><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p>N/A</p>
<p>LRDP Impact TRANS-4: Implementation of the 2020 LRDP would not significantly impact pedestrian and bicycle facilities.</p>	<p><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p>N/A</p>
<p>LRDP Impact TRANS-5: The campus road network system would be adequately sized and designed to facilitate emergency access vehicles.</p>	<p><i>Less than Significant</i></p>	<p>No mitigation is required.</p>	<p>N/A</p>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative Impact C-TRANS-1: Implementation of the 2020 LRDP would significantly impact study area intersections during peak commute hours under 2035 plus project conditions.	<i>Significant</i>	Cumulative MM C-TRANS-1: The University will implement LRDP MM TRANS-1 to reduce vehicle trips, monitor traffic growth, and make fair share contributions to address the project's contribution to cumulative impacts under 2035 conditions. Certain improvements in Table 4.8-12 are the same as, or similar to, improvements identified in Table 4.8-9 for the 2030 with LRDP Project scenario; therefore, as and when fair share is calculated for these intersection improvements, the calculation shall take into account the redundant improvements. As Intersections #3, #18 and #19 would directly serve the campus, the University will be responsible for the entire cost of improvements at these three intersections.	<i>Significant and Unavoidable</i>
Cumulative Impact C-TRANS-2: Implementation of the 2020 LRDP would not significantly affect study area freeway segments under 2035 plus project conditions.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Tribal Cultural Resources			
LRDP Impact TCR-1: The proposed project would not cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Section 21074.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Cumulative Impact C-TCR-1: Implementation of the proposed 2020 LRDP would not result in a significant cumulative impact on Tribal Cultural Resources.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>
Utilities and Service Systems			
LRDP Impact UTL-1: Implementation of the 2020 LRDP would generate demand for potable water for which sufficient water supplies would be available in normal, dry, and multiple dry years.	<i>Less than Significant</i>	No mitigation is required.	<i>N/A</i>

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
LRDP Impact UTL-2: Implementation of the 2020 LRDP could require the construction of new water supply and conveyance facilities; these facilities would not result in significant impacts on the environment.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact UTL-3: Implementation of the 2020 LRDP would not require construction or expansion of new wastewater conveyance or treatment facilities; nor would the proposed project result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to existing commitments.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact UTL-4: Implementation of the 2020 LRDP would not generate solid waste that is in excess of State or local standards, or in excess of local infrastructure, or otherwise impair attainment of solid waste reduction goals.	<i>Less than Significant</i>	No mitigation is required.	N/A
LRDP Impact UTL-5: Implementation of the 2020 LRDP would require on- and off-site improvements to electric transmission lines and natural gas pipelines.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-UTL-1: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in a substantial increase in demand for water that would not be served by existing supplies.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-UTL-2: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in a significant cumulative impact on wastewater collection and treatment facilities.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-2
Summary of LRDP Impacts and Mitigation Measures**

Project Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Cumulative Impact C-UTL-3: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in a significant cumulative impact on the regional landfill capacity.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact C-UTL-4: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not result in a significant cumulative impact related to electrical and natural gas facilities.	<i>Less than Significant</i>	No mitigation is required.	N/A
Energy			
LRDP Impact EN-1: Construction and operation of campus development under the 2020 LRDP would increase the use of energy resources on the campus but would not result in wasteful, inefficient or unnecessary consumption of energy resources nor would the increased energy use conflict with a state or local plan for renewable energy or energy efficiency.	<i>Less than Significant</i>	No mitigation is required.	N/A
Cumulative Impact EN-1: Implementation of the 2020 LRDP would not contribute substantially to a cumulative impact on energy resources.	<i>Less than Significant</i>	No mitigation is required.	N/A

**Table 2.0-3
Summary Comparison of Project Alternatives**

Project Impact	Proposed Project (Before and After Mitigation)	Alternative 1: No Project	Alternative 2: Reduced Development	Alternative 3: Distributed Employment Location
LRDP Impact AQ-2: Campus development under the 2020 LRDP would result in operational emissions that would involve a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.	<i>S/SU</i>	Similar; <i>S/SU</i>	Reduced; <i>S/SU</i>	Similar; <i>S/SU</i>
Cumulative Impact C-AQ-1: The construction and operation of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, could hinder air quality attainment and maintenance efforts for criteria pollutants.	<i>S/SU</i>	Similar; <i>S/SU</i>	Reduced; <i>S/SU</i>	Similar; <i>S/SU</i>
LRDP Impact BIO-4: Implementation of the 2020 LRDP would result in a potentially significant adverse impact on nesting and overwintering habitat for the Crotch bumble bee.	<i>PS/LTS</i>	Greater; <i>PS/LTS</i>	Reduced; <i>PS/LTS</i>	Similar; <i>PS/LTS</i>
LRDP Impact BIO-9: Implementation of the 2020 LRDP would result in potentially significant adverse impacts on special-status bird species and non-special-status migratory birds and raptors.	<i>PS/LTS</i>	Greater; <i>PS/LTS</i>	Reduced; <i>PS/LTS</i>	Similar; <i>PS/LTS</i>
Cumulative Impact C-HYD-2: Development of the campus under the 2020 LRDP, in conjunction with other past, present, and reasonably foreseeable future development in the project area, would not substantially interfere with groundwater recharge but would deplete groundwater supplies and contribute to an overdraft of the regional groundwater aquifer.	<i>S/SU</i>	Similar; <i>S/SU</i>	Reduced; <i>S/SU</i>	Similar; <i>S/SU</i>

**Table 2.0-3
Summary Comparison of Project Alternatives**

Project Impact	Proposed Project (Before and After Mitigation)	Alternative 1: No Project	Alternative 2: Reduced Development	Alternative 3: Distributed Employment Location
LRDP Impact NOI-3: Construction activities associated with development under the 2020 LRDP could expose existing off-site and future on-site noise-sensitive receptors to elevated noise levels.	<i>PS/LTS</i>	Similar; <i>PS/LTS</i>	Reduced; <i>PS/LTS</i>	Similar; <i>PS/LTS</i>
LRDP Impact NOI-4: Pile driving activities during construction could expose nearby receptors to perceptible levels of groundborne vibration.	<i>PS/LTS</i>	Similar; <i>PS/LTS</i>	Reduced; <i>PS/LTS</i>	Similar; <i>PS/LTS</i>
LRDP Impact PUB-6: Implementation of the 2020 LRDP would increase the use of Lake Yosemite Regional Park which could accelerate physical deterioration of park facilities.	<i>PS/LTS</i>	Similar; <i>PS/LTS</i>	Reduced; <i>PS/LTS</i>	Similar; <i>PS/LTS</i>
LRDP Impact TRANS-1: Implementation of the 2020 LRDP would significantly affect study area intersections during peak commute hours under 2030 plus project conditions.	<i>S/SU</i>	Similar; <i>S/SU</i>	Reduced; <i>S/SU</i>	Similar; <i>S/SU</i>
Cumulative Impact C-TRANS-1: Implementation of the 2020 LRDP would significantly impact study area intersections during peak commute hours under 2035 plus project conditions.	<i>S/SU</i>	Similar; <i>S/SU</i>	Reduced; <i>S/SU</i>	Similar; <i>S/SU</i>

SU = Significant and unavoidable

S = Significant impact

PS = Potentially significant impact

LTS = Less than significant impact

Similar = Impact similar to proposed project

Reduced = Impact less than proposed project

Greater = Impact greater than proposed project