

2 REPORT SUMMARY

This summary presents an overview of the analysis contained in Chapter 4: Environmental Evaluation. CEQA requires that this chapter summarize the following: 1) areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; and 4) implementation of mitigation measures. Alternatives to the project are analyzed in Chapter 5.

2.1 PROJECT UNDER REVIEW

This Draft Environmental Impact Report (EIR) provides an assessment of the potential environmental consequences of adoption of UC Berkeley's 2020 Long Range Development Plan (2020 LRDP). The 2020 LRDP is intended to serve as the principal policy document for guiding future development at UC Berkeley. The 2020 LRDP provides a framework for land use and capital investment to meet the academic goals and objectives of UC Berkeley through the year 2020. It describes both the scope and nature of development anticipated within this timeframe, as well as policies to guide the location, scale and design of individual capital projects. The 2020 LRDP is further detailed in Chapter 3.1 of this EIR.

2.2 AREAS OF CONTROVERSY

Over the years, UC Berkeley has worked with the City of Berkeley and campus neighbors on various issues of mutual interest. As the primary policy document guiding future land use and development at UC Berkeley, the 2020 LRDP is expected to be of great interest to the city and to campus neighbors, as well as to various regional public agencies.

In September 2003, a public scoping meeting was held at UC Berkeley for the 2020 LRDP and Tien Center EIR. A scoping period for the EIR extended from August 29, 2003 to October 10, 2003. During the scoping period interested parties were invited to submit their written comments, and to speak at the public scoping meeting. Commentors included the cities of Berkeley, Albany and Emeryville, several public agencies, community groups, neighborhood associations and individuals. Particular areas of concern identified during the scoping period included the following:

- **Aesthetics:** potential impacts to the aesthetic character of the canyons and view corridors; light and glare impacts from future use changes at Memorial Stadium; aesthetic impacts of the Tien Center project.
- **Air Quality:** potential air quality impacts resulting from construction and new traffic generated as a result of implementing the 2020 LRDP.
- **Hill Campus Habitat:** potential impacts on sensitive habitat and species, and on hydrology and water quality, in the Hill Campus.
- **Strawberry Creek:** potential impacts to riparian habitat, particularly the habitat along Strawberry Creek.
- **Cultural Resources:** impacts of future development on historic buildings and cultural resources; impacts to the historic setting of the Campus Park.
- **Seismic Hazards:** the proximity of the campus to the Hayward fault; development within the fault hazard zone, and seismic safety hazards.
- **Hazardous Materials:** hazardous materials use at the Lawrence Berkeley National Laboratory, which is outside the scope of the 2020 LRDP and is only addressed as a cumulative condition in this EIR.

- **Land Use:** compatibility of development under the 2020 LRDP with the City of Berkeley General Plan and the Southside Plan.
- **Noise:** potential noise impacts from construction.
- **Housing:** housing impacts associated with an increased campus population.
- **Fire and Emergency Response:** potential impacts on the ability of fire and emergency services to access the Hill Campus in the event of a disaster; potential impacts to fire services in general.
- **Schools:** impacts of potential increases in school-aged children on the school districts serving the 2020 LRDP area.
- **Traffic:** impacts of additional campus development on local and regional traffic conditions; impacts associated with providing additional campus parking.
- **Utilities and Service Systems:** potential impacts of additional campus development on the capacity of sewer, storm drainage and other service systems.

All of these issues were considered in the preparation of the 2020 LRDP. To the extent these issues have environmental impacts, they are also addressed in this EIR.

2.3 SIGNIFICANT IMPACTS

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. Implementation of the 2020 LRDP has the potential to generate significant environmental impacts in a number of areas. This EIR identifies these potential impacts and presents mitigation measures. Potential impacts are summarized in Table 2-1 at the end of this chapter.

2.4 CONTINUING BEST PRACTICES AND MITIGATION MEASURES

This EIR details continuing best practices and mitigation measures that would reduce potential impacts to less than significant levels, except where impacts are significant and unavoidable. These measures are summarized in Table 2-1. They will be the subject of a Mitigation Monitoring Program.

2.5 UNAVOIDABLE ENVIRONMENTAL IMPACTS

This EIR identifies significant unavoidable impacts in the following topic areas: air quality, cultural resources, noise, traffic and transportation.

2.6 ALTERNATIVES TO THE PROJECT

This Draft EIR analyzes four alternatives to the proposed 2020 LRDP, as follows:

- L-1 Reduced enrollment and employment growth from 2020 LRDP levels
- L-2 No new parking and more transit incentives
- L-3 Diversion of some future growth to remote sites
- L-4 No project (as required by CEQA)

During the scoping process, other alternatives were considered, but were determined either to be infeasible or to offer no significant environmental benefits over the 2020 LRDP or the alternatives listed above. The Draft EIR includes brief, qualitative analyses of these alternatives, as follows:

- L-5 Less new university housing than proposed
- L-6 More new university housing than proposed
- L-7 More intensive development of the Hill Campus than proposed
- L-8 More intensive development of the Clark Kerr Campus than proposed

Based on the comparative alternatives analysis contained in this EIR, Alternative L-1 is the environmentally superior alternative. However, despite the potential environmental advantages of Alternative L-1, it does not fully meet the Objectives established for the 2020 LRDP. Details of this analysis are included in Chapter 5.1.

This Draft EIR also analyzes three alternatives to the proposed Tien Center project:

- T-1 No project (as required by CEQA)
- T-2 Alternate site
- T-3 Phase 1 only, no Phase 2

Either T-2 or T-3 would, on balance, be environmentally superior to the proposed project. However, despite the potential modest environmental advantages of Alternatives T-2 and T-3, they would not fully meet the Objectives established for the Tien Center. Details of this analysis are included in Chapter 5.2.

2.7 SUMMARY TABLE

Table 2-1 presents a summary of impacts and mitigation measures identified in this report. It is organized to correspond with environmental issues discussed in Chapter 4.

The table is arranged in four columns: 1) environmental impacts; 2) significance prior to mitigation; 3) mitigation measures; and 4) significance after mitigation. A series of mitigation measures is noted where more than one mitigation may be required to achieve a less than significant impact. For a complete description of potential impacts and suggested mitigation measures, as well as analysis of potential cumulative impacts, please refer to the topical chapters within Chapter 4.

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AESTHETICS			
<p>LRDP Impact AES-1: Projects under the 2020 LRDP would result in visual changes, through new construction on presently undeveloped sites, through replacement of existing structures with new structures, and through exterior renovations of existing structures. The design provisions of the 2020 LRDP would ensure those changes would not degrade the existing visual quality and character of their environs.</p>	LTS	<p>Continuing Best Practice AES-1-a: New projects in the Campus Park would as a general rule conform to the Campus Park Guidelines. While the Guidelines would not preclude alternate design concepts when such concepts present the best solution for a particular site, UC Berkeley would not depart from the Guidelines except for solutions of extraordinary quality.</p>	LTS
		<p>Continuing Best Practice AES-1-b: Major new campus projects would continue to be reviewed at each stage of design by the UC Berkeley Design Review Committee. The provisions of the 2020 LRDP, as well as project specific design guidelines prepared for each such project, would guide these reviews.</p>	
		<p>Continuing Best Practice AES-1-c: New Hill Campus projects would as a general rule conform to the design principles established in the Hill Campus Framework. While these principles would not preclude alternate design concepts when such concepts present the best solution for a particular site, the University would not depart from these principles except for solutions of extraordinary quality.</p>	
		<p>Continuing Best Practice AES-1-d: To the extent feasible, future fuel management practices would include the selective replacement of high-hazard introduced plant species with native species: for example, the restoration of native grassland and oak-bay woodland through the eradication of invasive exotics, and replacement of aged pines and second-growth eucalyptus. Such conversions would be planned with care, however, to avoid significant disruption of faunal habitats.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AESTHETICS			
		<p>Continuing Best Practice AES-1-e: UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and, if relevant, the Berkeley Landmarks Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Major projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and, if relevant, to the Oakland Landmarks Preservation Advisory Board.</p>	
		<p>Continuing Best Practice AES-1-f: Each individual project built in the City Environs under the 2020 LRDP would be assessed to determine whether it could pose potential significant aesthetic impacts not anticipated in the 2020 LRDP, and if so, the project would be subject to further evaluation under CEQA.</p>	
		<p>Continuing Best Practice AES-1-g: To the extent feasible, University housing projects in the 2020 LRDP Housing Zone would not have a greater number of stories nor have setback dimensions less than could be permitted for a project under the relevant city zoning ordinance as of July 2003.</p>	
		<p>Continuing Best Practice AES-1-h: Assuming no further substantive changes are made by the city prior to adoption, the University would as a general rule use the design guidelines and standards prescribed in the Southside Plan as its guide for the location and design of University projects implemented under the 2020 LRDP within the area of the Southside Plan.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AESTHETICS			
LRDP Impact AES-2: The Campus Park and Hill Campus have a number of scenic vistas into, within, and from campus lands. While projects under the 2020 LRDP would result in visual changes, the design provisions of the 2020 LRDP would ensure those changes would not have adverse effects on those scenic vistas.	LTS	See CBPs under LRDP Impact AES-1	LTS
LRDP Impact AES-3: Projects under the 2020 LRDP have the potential to create new sources of substantial light or glare that could have adverse impacts on day- or night-time views, but the mitigation measures would reduce this impact to <i>less than significant</i> .	S	LRDP Mitigation Measure AES-3-a: Lighting for new development projects would be designed to include shields and cut-offs that minimize light spillage onto unintended surfaces and minimize atmospheric light pollution. The only exception to this principle would be in those areas where such features would be incompatible with the visual and/or historic character of the area. LRDP Mitigation Measure AES-3-b: As part of the design review procedures described in the above Continuing Best Practices, light and glare would be given specific consideration, and measures incorporated into the project design to minimize both. In general, exterior surfaces would not be reflective: architectural screens and shading devices are preferable to reflective glass.	LTS
Tien Center Impact AES-1: The Tien Center has the potential to degrade the visual quality and character of its environs, but the project design avoids such impacts by conforming to the Campus Park Guidelines in the 2020 LRDP.	LTS	See CBPs under LRDP Impact AES-1	LTS
Tien Center Impact AES-2: The Tien Center has the potential to cause adverse impacts on scenic vistas, but the project design avoids such impacts by conforming to the Campus Park Guidelines in the 2020 LRDP.	LTS	See CBPs under LRDP Impact AES-1	LTS

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AESTHETICS			
Tien Center Impact AES-3: As a project implementing the 2020 LRDP, the Tien Center would not create new sources of light or glare that could have adverse impacts on day or night-time views.	LTS	See mitigation measures under LRDP Impact AES-3	LTS
AIR QUALITY			
LRDP Impact AIR-1: Implementation of the 2020 LRDP would not violate the carbon monoxide standard or expose sensitive receptors to substantial CO concentrations.	LTS	Continuing Best Practice AIR-1: UC Berkeley shall continue to implement the same or equivalent alternative transit programs, striving to improve the campus mode split and reduce the use of single occupant vehicles among students, staff, faculty and visitors to campus.	LTS
LRDP Impact AIR-2: Implementation of the 2020 LRDP would not create objectionable odors affecting a substantial number of people.	LTS	None required.	LTS
LRDP Impact AIR-3: Implementation of the 2020 LRDP would not expose people to substantial levels of toxic air contaminants (TACs) from stationary and area sources.	LTS	None required.	LTS
LRDP Impact AIR-4: Emissions from construction activities associated with the 2020 LRDP would be controlled and would not lead to a violation of air quality standards.	LTS	Continuing Best Practice AIR-4-a: UC Berkeley shall continue to include in all construction contracts the measures specified below to reduce fugitive dust impacts: <ul style="list-style-type: none"> ▪ All disturbed areas, including quarry product piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using tarps, water, (non-toxic) 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 (non-toxic) chemical stabilizer/suppressant. ▪ When quarry product or trash materials are transported off-site, all material shall be covered, or at least two feet of freeboard space from the top of the container shall be maintained. 	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AIR QUALITY			
		<p>LRDP Mitigation Measure AIR-4-a: In addition, UC Berkeley shall include in all construction contracts the measures specified below to reduce fugitive dust impacts, including but not limited to the following:</p> <ul style="list-style-type: none"> ▪ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ▪ When demolishing buildings, water shall be applied to all exterior surfaces of the building for dust suppression. ▪ All operations shall limit or expeditiously remove the accumulation of mud or dirt from paved areas of construction sites and from adjacent public streets as necessary. See also CBP HYD 1-b. ▪ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by utilizing sufficient water or by covering. ▪ Limit traffic speeds on unpaved roads to 15 mph. ▪ Water blasting shall be used in lieu of dry sand blasting wherever feasible. ▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with slopes over one percent. ▪ To the extent feasible, limit area subject to excavation, grading, and other construction activity at any one time. ▪ Replant vegetation in disturbed areas as quickly as possible. 	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
AIR QUALITY			
	S	<p>Continuing Best Practice AIR-4-b: UC Berkeley shall continue to implement the following control measure to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:</p> <ul style="list-style-type: none"> ▪ Minimize idling time when construction equipment is not in use. 	
		<p>LRDP Mitigation Measure AIR-4-b: UC Berkeley shall implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:</p> <ul style="list-style-type: none"> ▪ To the extent that equipment is available and cost effective, UC Berkeley shall require contractors to use alternate fuels and retrofit existing engines in construction equipment. ▪ To the extent practicable, manage operation of heavy-duty equipment to reduce emissions, including the use of particulate traps. 	
<p>LRDP Impact AIR-5: Operational emissions from implementation of the 2020 LRDP may hinder the attainment of the Clean Air Plan. This would be a <i>significant and unavoidable</i> impact.</p>	S	<p>Continuing Best Practice AIR-5: UC Berkeley will continue to implement transportation control measures such as supporting voluntary trip-reduction programs, ridesharing, and implementing improvements to bicycle facilities.</p>	SU
		<p>LRDP Mitigation Measure AIR-5: UC Berkeley will work with the City of Berkeley, ABAG and BAAQMD to ensure that emissions directly and indirectly associated with the campus are adequately accounted for and mitigated in applicable air quality planning efforts.</p>	

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
<p>LRDP Impact BIO-1: New construction, land management and other 2020 LRDP activities would not have a substantial adverse effect on special-status species, or unique vegetation elements that contribute to the campus character.</p>	LTS	<p>LRDP Mitigation Measure BIO-1-a: UC Berkeley will, to the full feasible extent, avoid the disturbance or removal of nests of raptors and other special-status bird species when in active use. A pre-construction nesting survey for loggerhead shrike or raptors, covering a 100 yard perimeter of the project site, would be conducted during the months of March through July prior to commencement of any project that may impact suitable nesting habitat on the Campus Park and Hill Campus. The survey would be conducted by a qualified biologist no more than 30 days prior to initiation of disturbance to potential nesting habitat. In the Hill Campus, surveys would be conducted for new construction projects involving removal of trees and other natural vegetation. In the Campus Park, surveys would be conducted for construction projects involving removal of mature trees within 100 feet of a Natural Area, Strawberry Creek, and the Hill Campus. If any of these species are found within the survey area, grading and construction in the area would not commence, or would continue only after the nests are protected by an adequate setback approved by a qualified biologist. To the full feasible extent, the nest location would be preserved, and alteration would only be allowed if a qualified biologist verifies that birds have either not begun egg-laying and incubation, or that the juveniles from those nests are foraging independently and capable of survival. A pre-construction survey is not required if construction activities commence during the non-nesting season (August through February).</p>	LTS

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
		<p>LRDP Mitigation Measure BIO-1-b: UC Berkeley will, to the full feasible extent, avoid the remote potential for direct mortality of special-status bats and destruction of maternal roosts. A preconstruction roosting survey for special-status bat species, covering the project site and any affected buildings, would be conducted during the months of March through August prior to commencement of any project that may impact suitable maternal roosting habitat on the Campus Park and Hill Campus. The survey would be conducted by a qualified biologist no more than 30 days prior to initiation of disturbance to potential roosting habitat. In the Hill Campus, surveys would be conducted for new construction projects prior to grading, vegetation removal, and remodel or demolition of buildings with isolated attics and other suitable roosting habitat. In the Campus Park, surveys would be conducted for construction projects prior to remodel or demolition of buildings with isolated attics. If any maternal roosts are detected during the months of March through August, construction activities would not commence, or would continue only after the roost is protected by an adequate setback approved by a qualified biologist. To the full feasible extent, the maternal roost location would be preserved, and alteration would only be allowed if a qualified biologist verifies that bats have completed rearing young, that the juveniles are foraging independently and capable of survival, and bats have been subsequently passively excluded from the roost location. A pre-construction survey is not required if construction activities commence outside the maternal roosting season (September through February).</p>	

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
		<p>LRDP Mitigation Measure BIO-1-c: During planning and feasibility studies prior to development of specific projects or adoption of management plans in the Hill Campus, a habitat assessment would be conducted by a qualified biologist to assess any potential impacts on special-status species. Detailed surveys would be conducted during the appropriate season where necessary to confirm presence or absence of any special-status species. Where required to avoid a substantial adverse effect on such species, in consultation with the CDFG and the USFWS feasible changes to schedule, siting and design of projects or management plans would be developed and implemented.</p>	
		<p>Continuing Best Practice BIO-1-a: UC Berkeley will continue to implement the Campus Specimen Tree Program to reduce adverse effects to specimen trees and flora. Replacement landscaping will be provided where specimen resources are adversely affected, either through salvage and relocation of existing trees and shrubs or through new plantings of the same genetic strain, as directed by the Campus Landscape Architect.</p>	
		<p>Continuing Best Practice BIO-1-b: Implementation of the 2020 LRDP, particularly the Campus Park Guidelines, as well as the Landscape Master Plan and project-specific design guidelines, would provide for stewardship of existing landscaping, and use of replacement and expanded tree and shrub plantings to preserve and enhance the Campus Park landscape. Coast live oak and other native plantings would continue to be used in future landscaping, serving to partially replace any trees lost as a result of projects implemented under the 2020 LRDP.</p>	

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
<p>LRDP Impact BIO-2: New construction, land management and other 2020 LRDP activities would be designed and implemented to avoid any substantial adverse effect on any riparian habitat or sensitive natural communities.</p>	LTS	<p>Continuing Best Practice BIO-1-c: Because trees and other vegetation require routine maintenance, as trees age and become senescent, UC Berkeley would continue to undertake trimming, thinning, or removal, particularly if trees become a safety hazard. Vegetation in the Hill Campus requires continuing management for fire safety, habitat enhancement, and other objectives. This may include removal of mature trees such as native live oaks and non-native plantings of eucalyptus and pine.</p> <hr/> <p>Continuing Best Practice BIO-2-a: Implementation of the 2020 LRDP, including provisions that ensure proposed projects on the Campus Park will be designed to avoid Natural Preserves and provide for protection and enhancement of riparian habitat along Strawberry Creek as prescribed in the Campus Park Design Guidelines, will avoid substantial adverse effect on riparian habitat or sensitive natural communities. The Natural Preserves are comprised of two subzones: the riparian areas along the streamcourse, and other rustic woodlands adjacent to these riparian areas. The riparian areas are dominated by native and naturalized plants forming dense woodlands along the streamcourse: their width may vary in response to local conditions, but in general should be at least 100', centered on the streamcourse. Management of the Natural Preserves will be based on ecological principles, including replacing invasive exotic plants with native plants suited to this biotic zone, replacing unhealthy plants and plants at the ends of their natural lives, and preserving and enhancing the habitat value of the zone, as prescribed in the 2020 LRDP.</p>	LTS

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
		<p>Continuing Best Practice BIO-2-b: The Strawberry Creek Management Plan will continue to be revised and implemented, in consultation with CDFG, to include recommendations for habitat restoration and enhancement along specific segments of the creek on both the Campus Park and Hill Campus. This will include minimum development setbacks, targets on invasive species controls, appropriate native plantings, and in-channel habitat improvements such as retention of large woody debris and creation of a refugio and deep plunge pools where feasible.</p>	
		<p>Continuing Best Practice BIO-2-c: During planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus, a habitat assessment will be conducted by a qualified biologist to identify and minimize potential impacts on riparian habitat, freshwater seeps, and native grassland sensitive natural communities. Detailed surveys will be conducted at appropriate times where necessary to confirm and map the extent of any sensitive natural communities. Where required to avoid a substantial adverse effect on such communities, in consultation with the CDFG, feasible changes to schedule, siting and design of projects or management plans will be developed and implemented.</p>	

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
LRDP Impact BIO-3: Construction, land management practices, and other 2020 LRDP activities would be designed and implemented to avoid any substantial adverse effect on jurisdictional wetlands.	LTS	Continuing Best Practice BIO-3: Proposed projects on the Campus Park and Hill Campus will be designed to avoid designated jurisdictional wetlands and waters along the Strawberry Creek channel. As necessary, wetlands will be mapped and the extent of jurisdictional waters verified by the Corps during planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus. When unavoidable, any modifications to Strawberry Creek and other jurisdictional waters will be coordinated with jurisdictional agencies, including the CDFG, Corps, and the RWQCB as necessary.	LTS
LRDP Impact BIO-4: Construction, land management practices, and other 2020 LRDP activities would be designed and implemented to avoid any substantial interference with the movement of any native resident or migratory fish or wildlife species, or with established wildlife corridors or native wildlife nursery sites.	LTS	Continuing Best Practice BIO-4-a: Proposed projects in the Hill Campus will be designed to avoid obstructing important established wildlife corridors to the full feasible extent. Before any new fencing is installed for security purposes, UC Berkeley will consider the effect of such fencing on opportunities for wildlife movement, and will avoid new or expanded fencing which would obstruct important established movement corridors. Continuing Best Practice BIO-4-b: During planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus, a habitat assessment will be conducted by a qualified biologist to identify and minimize potential impacts on wildlife movement opportunities, including avoidance of new fencing across Strawberry Creek and tributary drainages.	LTS
LRDP Impact BIO-5: Construction, land management and other 2020 LRDP activities would not result in a significant environmental effect upon biological resources due to conflict with local ordinances.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
BIOLOGICAL RESOURCES			
Tien Center Impact BIO-1: Development of the Tien Center would not substantially affect any sensitive natural community.	LTS	See CBPs under LRDP Impact BIO-2.	LTS
Tien Center Impact BIO-2: Development of the Tien Center would not substantially interfere with movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, nor impede the use of native wildlife nursery sites.	LTS	See CBPs under LRDP Impact BIO-4.	LTS
Tien Center Impact BIO-3: The Tien Center project design would not create significant adverse impacts to special-status species, including raptors, or specimen trees or plants.	LTS	See CBPs and mitigation measures under LRDP Impact BIO-1.	LTS
CULTURAL RESOURCES			
LRDP Impact CUL-1: Construction activities under the 2020 LRDP could have the potential to destroy a unique paleontological resource, or site, or unique geologic feature, but campus best practices would ensure this impact is <i>less than significant</i> .	LTS	Continuing Best Practice CUL-1: In the event that paleontological resource evidence or a unique geological feature is identified during project planning or construction, the work would stop immediately and the find would be protected until its significance can be determined by a qualified paleontologist or geologist. If the resource is determined to be a “unique resource,” a mitigation plan would be formulated and implemented to appropriately protect the significance of the resource by preservation, documentation, and/or removal, prior to recommending activities.	LTS

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
CULTURAL RESOURCES			
LRDP Impact CUL-2: Projects developed under the 2020 LRDP could cause adverse changes in the significance of historical resources. However, in general the provisions of the 2020 LRDP and the best practices would ensure this impact is <i>less than significant</i> . (See also LRDP Impact CUL-3.)	S	<p>Continuing Best Practice CUL-2-a: If a project could cause a substantial adverse change in features that convey the significance of a primary or secondary resource, an Historic Structures Assessment (HSA) would be prepared. Recommendations of the HSA made in accordance with the Secretary of the Interior’s Standards would be implemented, in consultation with the UC Berkeley Design Review Committee and the State Historic Preservation Office, such that the integrity of the significant resource is preserved and protected. Copies of all reports would be filed in the University Archives/Bancroft Library.</p> <p>Continuing Best Practice CUL-2-b: UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and, if relevant, the Berkeley Landmarks Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Major projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and, if relevant, to the Oakland Landmarks Preservation Advisory Board.</p>	LTS
LRDP Impact CUL-3: Under certain circumstances warranted by public benefits in furtherance of the University’s educational mission, projects developed under the 2020 LRDP could cause substantial adverse changes in the significance of historical resources. Under these circumstances, the University would follow the mitigation measure described, but the impact would remain <i>significant and unavoidable</i> .	S	LRDP Mitigation Measure CUL-3: If, in furtherance of the educational mission of the University, a project would require the demolition of a primary or secondary resource, or the alteration of such a resource in a manner not in conformance with the Secretary of the Interior’s Standards, the resource would be recorded to archival standards prior to its demolition or alteration.	SU

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Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
CULTURAL RESOURCES			
<p>LRDP Impact CUL-4: Projects developed under the 2020 LRDP could destroy significant prehistoric or historic archaeological resources. The mitigations would reduce this impact to <i>less than significant</i>. (See also LRDP Impact CUL-5.)</p>	S	<p>LRDP Mitigation Measure CUL-4-a: UC Berkeley will create an internal document: a UCB Campus Archaeological Resources Sensitivity Map. The map will identify only the general locations of known and potential archaeological resources within the 2020 LRDP planning area. For the Hill Campus, the map will indicate the areas along drainages as being areas of high potential for the presence of archaeological resources. If any project would affect a resource, then either the project will be sited to avoid the location or, in consultation with a qualified archaeologist, UC Berkeley will determine the level of archaeological investigation that is appropriate for the project site and activity, prior to any construction or demolition activities.</p>	LTS
<p>Continuing Best Practice CUL-4-a: In the event resources are determined to be present at a project site, the following actions would be implemented as appropriate to the resource and the proposed disturbance:</p>			
<p>UC Berkeley shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain the extent of the deposit of any buried archaeological materials relative to the project's area of potential effects. The archaeologist would prepare a site record and file it with the California Historical Resource Information System.</p>			
<p>If the resource extends into the project's area of potential effects, the resource would be evaluated by a qualified archaeologist. UC Berkeley as lead agency would consider this evaluation in determining whether the resource qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines section 15064.5. If the resource does not qualify, or if no resource is present within the project area of potential effects, this would be noted in the environmental document and no further mitigation is required unless there is a discovery during construction (see below).</p>			

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
CULTURAL RESOURCES			
		<p>If a resource within the project area of potential effect is determined to qualify as an historical resource or a unique archaeological resource in accordance with CEQA, UC Berkeley shall consult with a qualified archaeologist to mitigate the effect through data recovery if appropriate to the resource, or to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that would permit avoidance or substantial preservation in place of the resource. If further data recovery, avoidance or substantial preservation in place is not feasible, UC Berkeley shall implement LRDP Mitigation Measure CUL-5, outlined below.</p> <p>A written report of the results of investigations would be prepared by a qualified archaeologist and filed with the University Archives/ Bancroft Library and the Northwest Information Center.</p>	
		<p>LRDP Mitigation Measure CUL-4-b: If a resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 35 feet of the find shall cease. UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project, as outlined in Continuing Best Practice CUL-3-a. UC Berkeley would implement the recommendations of the archaeologist.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
CULTURAL RESOURCES			
		<p>Continuing Best Practice CUL-4-b: In the event human or suspected human remains are discovered, UC Berkeley would notify the County Coroner who would determine whether the remains are subject to his or her authority. The Coroner would notify the Native American Heritage Commission if the remains are Native American. UC Berkeley would comply with the provisions of Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(d) regarding identification and involvement of the Native American Most Likely Descendant and with the provisions of the California Native American Graves Protection and Repatriation Act to ensure that the remains and any associated artifacts recovered are repatriated to the appropriate group, if requested.</p>	
		<p>Continuing Best Practice CUL-4-c: Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify UC Berkeley if any are found. In the event of a find, UC Berkeley shall implement LRDP Mitigation Measure CUL-4-b.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
CULTURAL RESOURCES			
<p>LRDP Impact CUL-5: Under certain circumstances warranted by public benefits in furtherance of the University’s educational mission, projects developed under the 2020 LRDP could cause substantial adverse changes in the significance of archaeological resources. Under these circumstances, the University would follow the mitigation measure, but the impact would remain <i>significant and unavoidable</i>.</p>	S	<p>LRDP Mitigation Measure CUL-5: If, in furtherance of the educational mission of the University, a project would require damage to or demolition of a significant archaeological resource, a qualified archaeologist shall, in consultation with UC Berkeley:</p> <p>Prepare a research design and archaeological data recovery plan that would attempt to capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.</p> <p>Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center and provide for the permanent curation of recovered materials.</p>	SU
<p>Tien Center Impact CUL-1: The proposed Phase 1 and Phase 2 buildings have the potential to cause adverse changes in the significance of historical resources, but no such changes are anticipated.</p>	LTS	See CBPs under LRDP Impact CUL-2, above.	LTS
<p>Tien Center Impact CUL-2: Excavation and site development for the Phase I building would result in the loss of historic archaeological resources, but the best practices would reduce this impact to <i>less than significant</i>.</p>	LTS	See CPB CUL-4-a, above.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
GEOLOGY, SEISMICITY AND SOILS			
<p>LRDP Impact GEO-1: Implementation of the 2020 LRDP could expose people and/or structures to potential substantial adverse effects resulting from rupture of a known earthquake fault, strong seismic groundshaking, seismic-related ground failure and landsliding. Given continuing campus best practices, however, a significant increase in risk to people or the environment is not anticipated.</p>	LTS	<p>Continuing Best Practice GEO-1-a: UC Berkeley will continue to comply with the CBC and the <i>University Policy on Seismic Safety</i>.</p>	LTS
		<p>Continuing Best Practice GEO-1-b: Site-specific geotechnical studies will be conducted under the supervision of a California Registered Engineering Geologist or licensed geotechnical engineer and UC Berkeley will incorporate recommendations for geotechnical hazard prevention and abatement into project design.</p>	
		<p>Continuing Best Practice GEO-1-c: The Seismic Review Committee (SRC) shall continue to review all seismic and structural engineering design for new and renovated existing buildings on campus and ensure that it conforms to the California Building Code and the <i>University Policy on Seismic Safety</i>.</p>	
		<p>Continuing Best Practice GEO-1-d: UC Berkeley shall continue to use site-specific seismic ground motion specifications developed for analysis and design of campus projects. The information provides much greater detail than conventional codes and is used for performance-based analyses.</p>	
		<p>Continuing Best Practice GEO-1-e: UC Berkeley will continue to implement the SAFER Program. Through this program, UC Berkeley has already identified all existing buildings in need of upgrades and is currently performing seismic upgrades on several of these buildings.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
GEOLOGY, SEISMICITY AND SOILS			
		<p>Continuing Best Practice GEO-1-f: Through the Office of Emergency Preparedness, UC Berkeley will continue to implement programs and projects in emergency planning, training, response, and recovery. Each campus building housing Berkeley students, faculty and staff has a Building Coordinator who prepares building response plans and coordinates education and planning for all building occupants.</p>	
		<p>Continuing Best Practice GEO-1-g: As stipulated in the <i>University Policy on Seismic Safety</i>, the design parameters for specific site peak acceleration and structural reinforcement will be determined by the geotechnical and structural engineer for each new or rehabilitation project proposed under the 2020 LRDP. The acceptable level of actual damage that could be sustained by specific structures would be calculated based on geotechnical information obtained at the specific building site.</p>	
		<p>Continuing Best Practice GEO-1-h: Hill Campus dewatering would be carried out as needed and would be monitored and maintained by qualified engineers.</p>	
<p>LRDP Impact GEO-2: Implementation of the 2020 LRDP, particularly in steep areas, could result in soil erosion. Given continuing campus best practices, however, a significant increase in erosion is not anticipated.</p>	LTS	<p>Continuing Best Practice GEO-2: Campus construction projects with potential to cause erosion or sediment loss, or discharge of other pollutants, would include the campus Stormwater Pollution Prevention Specification. This specification includes by reference the “Manual of Standards for Erosion and Sediment Control” of the Association of Bay Area Governments and requires that each large and exterior project develop an Erosion Control Plan.</p>	LTS
<p>LRDP Impact GEO-3: Implementation of the 2020 LRDP would not result in a substantial loss of topsoil.</p>	LTS	<p>See CBPs and mitigation measures under LRDP Impacts GEO-1 and GEO-2 above.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
GEOLOGY, SEISMICITY AND SOILS			
LRDP Impact GEO-4: Implementation of the 2020 LRDP could result in development located on a geologic unit or soil that is unstable and could potentially be subject to landslides, lateral spreading, subsidence, liquefaction or collapse. Given continuing campus best practices, however, a significant increase in risk to people or the environment is not anticipated.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS
LRDP Impact GEO-5: Implementation of the 2020 LRDP could result in development located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property. Given continuing campus best practices, however, a significant increase in risk to people or the environment is not anticipated.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS
Tien Center Impact GEO-1: The Tien Center project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking or seismic related ground failure, including liquefaction.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS
Tien Center Impact GEO-2: The Tien Center project would not result in substantial soil erosion or the loss of topsoil.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS
Tien Center Impact GEO-3: The Tien Center project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS
Tien Center Impact GEO-4: The Tien Center project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code.	LTS	See CBPs under LRDP Impacts GEO-1 and GEO-2 above.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HAZARDOUS MATERIALS			
<p>LRDP Impact HAZ-1: Implementation of the 2020 LRDP would increase the routine transport, use, disposal and storage of hazardous materials and waste (including chemical, radioactive, and biohazardous materials and waste), but given continuing campus best practices, this would not increase hazards to the public or the environment.</p>	LTS	<p>Continuing Best Practice HAZ-1: UC Berkeley shall continue to implement the same (or equivalent) health and safety plans, programs, practices and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes (including chemical, radioactive, and biohazardous materials and waste) during the 2020 LRDP planning horizon. These include, but are not necessarily limited to, requirements for safe transportation of hazardous materials, EH&S training programs, the Hazard Communication Program, publication and promulgation of drain disposal guidelines, the requirement that laboratories have Chemical Hygiene Plans, the Chemical Inventory Database, the Toxic Use Reduction Program, the Aboveground Storage Tank Spill Prevention Control and Countermeasure Plan, monitoring of underground storage tanks, hazardous waste disposal policies, the Chemical Exchange Program, the Hazardous Waste Minimization Program, the Biosafety Program, the Medical Waste Management Program, and the Radiation Safety Program. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HAZARDOUS MATERIALS			
LRDP Impact HAZ-2: Implementation of the 2020 LRDP would increase the routine use of laboratory animals on campus by UC Berkeley laboratories, but given continuing campus best practices, this would not increase hazards to the public or the environment.	LTS	Continuing Best Practice HAZ-2: UC Berkeley shall continue to implement the same (or equivalent) programs related to laboratory animal use during the 2020 LRDP planning horizon, including, but not necessarily limited to, compliance with U.S. Public Health Service Regulations, the National Research Council Guide for the Care and Use of Laboratory Animals, and Animal Welfare Act regulations. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.	LTS
LRDP Impact HAZ-3: Implementation of the 2020 LRDP would increase the use of transgenic organisms on campus by UC Berkeley laboratories, but given continuing campus best practices, this would not increase hazards to the public or the environment.	LTS	Continuing Best Practice HAZ-3: UC Berkeley shall continue to implement the same (or equivalent) programs related to transgenic materials use during the 2020 LRDP planning horizon, including, but not necessarily limited to, compliance with the NIH Guidelines for Research Involving Recombinant DNA Molecules, USDA requirements for open field-based research involving transgenic plants, and requiring registration with EH&S for all research involving transgenic plants. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HAZARDOUS MATERIALS			
LRDP Impact HAZ-4: Implementation of the 2020 LRDP could locate development on a hazardous materials site, exposing construction workers and campus occupants or the general public to contaminated soil or groundwater. Given campus continuing best practices, however, this would not increase the risks to workers, campus occupants or the general public.	LTS	Continuing Best Practice HAZ-4: UC Berkeley shall continue to perform site histories and due diligence assessments of all sites where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. The investigation will include review of regulatory records, historical maps and other historical documents, and inspection of current site conditions. UC Berkeley would act to protect the health and safety of workers or others potentially exposed should hazardous site conditions be found.	LTS
LRDP Impact HAZ-5: Implementation of the 2020 LRDP could result in exposure to hazardous emissions or handling of contaminated building materials. This is a <i>less than significant</i> impact.	LTS	Continuing Best Practice HAZ-5: UC Berkeley shall continue to perform hazardous materials surveys prior to capital projects in existing campus buildings. The campus shall continue to comply with federal, state, and local regulations governing the abatement and handling of hazardous building materials and each project shall address this requirement in all construction.	LTS
LRDP Impact HAZ-6: Implementation of the 2020 LRDP would increase the handling and transportation of hazardous materials. Given continuing campus best practices, this would not increase the risk of hazardous materials release into the environment through upset and accident conditions.	LTS	See CBPs for LRDP Impacts HAZ-1 through HAZ-3, above.	LTS
LRDP Impact HAZ-7: Implementation of the 2020 LRDP could result in hazardous emissions and the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Given continuing campus best practices, however, such emissions or handling practices would not pose a health or safety hazard to students or employees at such schools.	LTS	See CBPs for LRDP Impact HAZ-1, above.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HAZARDOUS MATERIALS			
LRDP Impact HAZ-8: Implementation of the 2020 LRDP could expand research uses of non-ionizing radiation sources. This is a <i>less than significant</i> impact.	LTS	None required.	LTS
HYDROLOGY AND WATER QUALITY			
LRDP Impact HYD-1: Implementation of the 2020 LRDP would not violate existing water quality standards or wastewater discharge requirements, given the provisions of the 2020 LRDP and campus best practices.	LTS	<p>Continuing Best Practices HYD-1-a: During the plan check review process and construction phase monitoring, UC Berkeley (EH&S) will verify that the proposed project complies with all applicable requirements and BMPs.</p> <p>Continuing Best Practice HYD-1-b: UC Berkeley shall continue implementing an urban runoff management program containing BMPs as published in the Strawberry Creek Management Plan, and as developed through the campus municipal Stormwater Management Plan completed for its pending Phase II MS4 NPDES permit. UC Berkeley will continue to comply with the NPDES stormwater permitting requirements by implementing construction and post construction control measures and BMPs required by project-specific SWPPPs and, upon its approval, by the Phase II SWMP to control pollution. Stormwater Pollution Prevention Plans would be prepared as required by the appropriate regulatory agencies including the Regional Water Quality Control Board and where applicable, according to the UC Berkeley Stormwater Pollution Prevention Specification to prevent discharge of pollutants and to minimize sedimentation resulting from construction and the transport of soils by construction vehicles.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
		<p>Continuing Best Practice HYD-1-c: UC Berkeley shall maintain a campus-wide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals, to prevent discharge of these pollutants to Strawberry Creek and the campus storm drains.</p>	
		<p>Continuing Best Practices HYD-1-d: UC Berkeley shall continue to implement the campus Drain Disposal Policy and Drain Disposal Guidelines which provides inspection, training, and oversight on use of the drains for chemical disposal for academic and research laboratories as well as shops and physical plant operations, to prevent harm to the sanitary sewer system.</p>	
<p>LRDP Impact HYD-2: Implementation of the 2020 LRDP, including associated construction activities, would not contribute substantial sedimentation or other pollutants in stormwater runoff that could cause sedimentation in local storm drains, and degrade the quality of receiving waters, given continuing campus best practices.</p>	LTS	<p>Continuing Best Practice HYD-2-a: In addition to Hydrology Continuing Best Practices 1-a and 1-b above, UC Berkeley will continue to review each development project, to determine whether project runoff would increase pollutant loading. If it is determined that pollutant loading could lead to a violation of the Basin Plan, UC Berkeley would design and implement the necessary improvements to treat stormwater. Such improvements could include grassy swales, detention ponds, continuous centrifugal system units, catch basin oil filters, disconnected downspouts and stormwater planter boxes.</p>	LTS
		<p>Continuing Best Practice HYD-2-b: Where feasible, parking would be built in covered parking structures and not exposed to rain to address potential stormwater runoff pollutant loads. See also HYD-2-a.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
		<p>Continuing Best Practice HYD-2-c: Landscaped areas of development sites shall be designed to absorb runoff from rooftops and walkways. The Campus Landscape Architect shall ensure that open or porous paving systems be included in project designs wherever feasible, to minimize impervious surfaces and absorb runoff.</p>	
		<p>Continuing Best Practice HYD-2-d: UC Berkeley shall continue to develop and implement the recommendations of the Strawberry Creek Management Plan and its updates, and construct improvements as appropriate. These recommendations include, but shall not be limited to, minimization of the amount of land exposed at any one time during construction as feasible; use of temporary vegetation or mulch to stabilize critical areas where construction staging activities must be carried out prior to permanent cover of exposed lands; installation of permanent vegetation and erosion control structures as soon as practical; protection and retention of natural vegetation; and implementation of post-construction structural and non-structural water quality control techniques.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
LRDP Impact HYD-3: Implementation of the 2020 LRDP would not interfere with groundwater recharge or contribute to lowering of the local groundwater table, given the provisions of the 2020 LRDP and campus best practices.	LTS	Continuing Best Practice HYD-3: In addition to Hydrology Continuing Best Practices 1-a, 1-b and 2-a and 2-c above, UC Berkeley will continue to review each development project, to determine whether rainwater infiltration to groundwater is affected. If it is determined that existing infiltration rates would be adversely affected, UC Berkeley would design and implement the necessary improvements to retain and infiltrate stormwater. Such improvements could include retention basins to collect and retain runoff, grassy swales, infiltration galleries, planter boxes, permeable pavement, or other retention methods. The goal of the improvement should be to ensure that there is no net decrease in the amount of water recharged to groundwater that serves as freshwater replenishment to Strawberry Creek. The improvement should maintain the volume of flows and times of concentration from any given site at pre-development conditions.	LTS
LRDP Impact HYD-4: At all sites outside the Hill Campus, implementation of the 2020 LRDP could alter drainage patterns in the project area and increase impervious surfaces, but would not exceed the capacity of stormwater drainage systems, result in localized flooding, contribute to off-site flooding, nor result in substantial siltation or erosion, given the provisions of the 2020 LRDP and campus best practices.	LTS	Continuing Best Practice HYD-4-a: In addition to Hydrology Continuing Best Practices 1-a, 1-b and 2-c, the campus storm drain system would be maintained and cleaned to accommodate existing runoff.	LTS
		Continuing Best Practice HYD-4-b: For 2020 LRDP projects in the City Environs (excluding the Campus Park or Hill Campus) improvements would be coordinated with the City Public Works Department	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
	S	<p>Continuing Best Practice HYD-4-c: Development that encroaches on creek channels and riparian zones would be prohibited. Creek channels would be preserved and enhanced, especially in the Campus Park area. An undisturbed buffer zone would be maintained between proposed 2020 LRDP projects and creek channels.</p>	
		<p>Continuing Best Practice HYD-4-d: UC Berkeley shall continue to develop and implement a maintenance program for Strawberry Creek, as described in the Strawberry Creek Management Plan and its updates. Actions shall include but not be limited to: clear trash racks, catch basins, channels, ponds, bridges and over-crossing structures of debris that could block flows and increase flooding potential in all campus creeks. Cleaning of debris shall be done during storm events and prior to the start of the rainy season as part of routine campus grounds maintenance.</p>	
		<p>Continuing Best Practice HYD-4-e: UC Berkeley shall continue to manage runoff into storm drain systems such that the aggregate effect of projects implementing the 2020 LRDP is no net increase in runoff over existing conditions.</p>	
<p>LRDP Impact HYD-5: Projects implemented in the Hill Campus under the 2020 LRDP could alter drainage patterns and increase impervious surfaces, which could exceed the capacity of stormwater drainage systems, result in localized flooding, contribute to off-site flooding, and result in substantial siltation or erosion, but the mitigation would ensure this impact is <i>less than significant</i>.</p>	S	<p>LRDP Mitigation Measure HYD-5: In addition to Hydrology Continuing Best Practices 1-a, 1-b, 2-c, 4-a, 4-c and 4-e, projects proposed with potential to alter drainage patterns in the Hill Campus would be accompanied by a hydrologic modification analysis, and would incorporate a plan to prevent increases of flow from the newly developed site, preventing downstream flooding and substantial siltation and erosion.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
LRDP Impact HYD-6: Implementation of the 2020 LRDP could place structures which would impede or redirect flood flows within the 100-year flood hazard area, but the mitigation would ensure this impact is <i>less than significant</i> .	S	LRDP Mitigation Measure HYD-6: In addition to implementation of LRDP Mitigation Measure HYD-5, prior to final design, UC Berkeley will review the plans for all structures to be constructed in the 100-year floodplain for compliance with FEMA requirements for nonresidential structures. This review will include a hydrologic study and recommendations to eliminate any potential impacts to the 100-year floodplain. For structures placed within the 100-year floodplain, flood control devices will be utilized in each development to direct flows toward areas where flood hazards will be minimal. These actions would ensure that the implementation of the 2020 LRDP would not impede or redirect flows in a manner that results in flooding.	LTS
Tien Center Impact HYD-1: Development of the Tien Center would not violate existing surface water quality standards or wastewater discharge requirements.	LTS	See CBPs for LRDP Impact HYD-1.	LTS
Tien Center Impact HYD-2: Development of the Tien Center could increase impervious surfaces but would not provide additional sources of polluted stormwater runoff. Also, construction activities associated with development of the Tien Center would not substantially contribute sediments or other pollutants in stormwater runoff.	LTS	See CBPs for LRDP Impact HYD-2 and HYD-4.	LTS
Tien Center Impact HYD-3: Development of the Tien Center would not interfere with groundwater recharge or contribute to lowering of the local groundwater table.	LTS	See CBPs for LRDP Impact HYD-3.	LTS
Tien Center Impact HYD-4: Development of the Tien Center could alter drainage patterns in the project area and increase impervious surfaces, but would not exceed the capacity of stormwater drainage systems and result in localized flooding, contribute to off-site flooding, nor result in substantial siltation or erosion.	LTS	See CBP for LRDP Impact HYD-4.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
Tien Center Impact HYD-5: The Tien Center would not be constructed in a FEMA-designated flood zone.	LTS	None required.	LTS
LAND USE			
LRDP Impact LU-1: The 2020 LRDP would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required.	LTS
LRDP Impact LU-2: The 2020 LRDP would not conflict with local land use regulations such that a significant incompatibility is created with adjacent land uses.	LTS	Continuing Best Practice LU-2-a: New projects in the Campus Park would as a general rule conform to the Campus Park Guidelines. The Guidelines include specific provisions to ensure projects at the city interface create a graceful transition from campus to city. Continuing Best Practice LU-2-b: UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and, if relevant, the Berkeley Landmarks Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Major projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and, if relevant, to the Oakland Landmarks Preservation Advisory Board.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
LAND USE			
		<p>Continuing Best Practice LU-2-c: Each individual project built in the City Environs under the 2020 LRDP would be assessed to determine whether it could pose potential significant land use impacts not anticipated in the 2020 LRDP, and if so, the project would be subject to further evaluation under CEQA. In general, a project in the City Environs would be assumed to have the potential for significant land use impacts if it:</p> <ul style="list-style-type: none"> ▪ Includes a use that is not permitted within the city general plan designation for the project site, or ▪ Has a greater number of stories and/or lesser setback dimensions than could be permitted for a project under the relevant city zoning ordinance as of July 2003. 	
		<p>Continuing Best Practice LU-2-d: Assuming no further substantive changes are made by the city prior to adoption, the University would as a general rule use the design guidelines and standards prescribed in the Southside Plan as its guide for the location and design of projects implemented under the 2020 LRDP within the geographic area of the Southside Plan.</p>	
		<p>Continuing Best Practice LU-2-e: To the extent feasible, University housing projects in the 2020 LRDP Housing Zone would not have a greater number of stories nor lesser setback dimensions than could be permitted for a project under the relevant city zoning ordinance as of July 2003.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
LAND USE			
Tien Center Impact LU-1: As a project implementing the 2020 LRDP, the Tien Center would not conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project, adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required.	LTS
Tien Center Impact LU-2: As a project implementing the 2020 LRDP, the Tien Center would not conflict with local land use regulations such that a significant incompatibility is created with adjacent land uses.	LTS	None required.	LTS
NOISE			
LRDP Impact NOI-1: Implementation of the 2020 LRDP would increase vehicular traffic in the 2020 LRDP planning area, but would not result in a substantial permanent increase in ambient noise levels due to increased vehicular traffic on local roadways.	LTS	None required.	LTS
LRDP Impact NOI-2: Projects implementing the 2020 LRDP would not result in operational noise levels in excess of local standards.	LTS	Continuing Best Practice NOI-2: Mechanical equipment selection and building design shielding would be used, as appropriate, so that noise levels from future building operations would not exceed the City of Berkeley Noise Ordinance limits for commercial areas or residential zones as measured on any commercial or residential property in the area surrounding a project proposed to implement the 2020 LRDP. Controls that would typically be incorporated to attain this outcome include selection of quiet equipment, sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
NOISE			
<p>LRDP Impact NOI-3: University housing developed under the 2020 LRDP could expose residents to excessive noise levels. This impact is <i>significant and unavoidable</i>.</p>	S	<p>LRDP Mitigation Measure NOI-3: The University would comply with building standards that reduce noise impacts to residents of University housing to the full feasible extent; additionally, any housing built in areas where noise exposure levels exceed 60 L_{dn} would incorporate design features to minimize noise exposures to occupants.</p>	SU
<p>LRDP Impact NOI-4: Noise resulting from demolition and construction activities necessary for implementation of the 2020 LRDP would, in some instances, cause a substantial temporary or periodic increase in noise levels, in excess of local standards prescribed in Section 13.40.070 of the City of Berkeley noise ordinance, at affected residential or commercial property lines. This is a <i>significant and unavoidable</i> impact.</p>	S	<p>Continuing Best Practice NOI-4-a: The following measures would be included in all construction projects:</p> <ul style="list-style-type: none"> ▪ Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park area will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary. ▪ As feasible, construction equipment will be required to be muffled or controlled. ▪ The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g. gas or electric equipment instead of diesel powered, low noise air compressors). ▪ Functions such as concrete mixing and equipment repair will be performed off-site whenever possible. <p>For projects requiring pile driving:</p> <ul style="list-style-type: none"> ▪ With approval of the project structural engineer, pile holes will be pre-drilled to minimize the number of impacts necessary to seat the pile. ▪ Pile driving will be scheduled to have the least impact on nearby sensitive receptors. 	SU

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
NOISE			
		<ul style="list-style-type: none"> ▪ Pile drivers with the best available noise control technology will be used. For example, pile driving noise control may be achieved by shrouding the pile hammer point of impact, by placing resilient padding directly on top of the pile cap, and/or by reducing exhaust noise with a sound-absorbing muffler. ▪ Alternatives to impact hammers, such as oscillating or rotating pile installation systems, will be used where possible. 	
		<p>Continuing Best Practice NOI-4-b: UC Berkeley will continue to precede all new construction projects with community outreach and notification, with the purpose of ensuring that the mutual needs of the particular construction project and of those impacted by construction noise are met, to the extent feasible.</p>	
		<p>LRDP Mitigation Measure NOI-4: UC Berkeley will develop a comprehensive construction noise control specification to implement additional noise controls, such as noise attenuation barriers, siting of construction laydown and vehicle staging areas, and the measures outlined in Continuing Best Practice NOI-4-a as appropriate to specific projects. The specification will include such information as general provisions, definitions, submittal requirements, construction limitations, requirements for noise and vibration monitoring and control plans, noise control materials and methods. This document will be modified as appropriate for a particular construction project and included within the construction specification.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
NOISE			
LRDP Impact NOI-5: Construction of campus facilities under the 2020 LRDP could expose nearby receptors to excessive groundborne vibration, but the mitigation measures would ensure this impact is <i>less than significant</i> .	S	LRDP Mitigation Measure NOI-5: The following measures will be implemented to mitigate construction vibration: <ul style="list-style-type: none"> ▪ UC Berkeley will conduct a pre-construction survey prior to the start of pile driving. The survey will address susceptibility ratings of structures, proximity of sensitive receivers and equipment/operations, and surrounding soil conditions. This survey will document existing conditions as a baseline for determining changes subsequent to pile driving. ▪ UC Berkeley will establish a vibration checklist for determining whether or not vibration is an issue for a particular project. ▪ Prior to conducting vibration-causing construction, UC Berkeley will evaluate whether alternative methods are available, such as: <ul style="list-style-type: none"> ▪ Using an alternative to impact pile driving such as vibratory pile drivers or oscillating or rotating pile installation methods. ▪ Jetting or partial jetting of piles into place using a water injection at the tip of the pile. ▪ If vibration monitoring is deemed necessary, the number, type, and location of vibration sensors would be determined by UC Berkeley. 	LTS
Tien Center Impact NOI-1: Operation of the Tien Center would not generate a substantial permanent increase in ambient noise levels in the project vicinity.	LTS	See CBP for LRDP Impact NOI-2, above.	LTS
Tien Center Impact NOI-2: Noise levels generated by construction of the Tien Center would not exceed locally established noise standards, nor generate excessive ground-borne vibration or ground-borne noise levels.	LTS	See CBPs and mitigation measures for LRDP Impact NOI-4 and NOI-5, above.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
POPULATION AND HOUSING			
LRDP Impact POP-1: Implementation of the 2020 LRDP would directly induce population growth in the Bay Region by increasing both enrollment and employment at UC Berkeley, but this growth would in general be accommodated in the Bay Region without significant adverse impacts.	LTS	None required.	LTS
PUBLIC SERVICES			
LRDP Impact PUB-1.1: Implementation of the 2020 LRDP could increase the demand for police services, but is not anticipated to result in construction of new or altered facilities.	LTS	Continuing Best Practice PUB-1.1: UCPD would continue its partnership with the City of Berkeley police department to review service levels in the City Environs.	LTS
LRDP Impact PUB-2.1: Implementation of the 2020 LRDP would result in limited new development in the Hill Campus, but would not expose people or structures in the Hill Campus to a significant risk of loss, injury or death involving wildland fires.	LTS	Continuing Best Practice PUB-2.1-a: UC Berkeley would continue to comply with Title 19 of the California Code of Regulations, which mandates firebreaks of up to 100 feet around buildings or structures in, upon or adjoining any mountainous, forested, brush- or grass-covered lands.	LTS
		Continuing Best Practice PUB-2.1-b: UC Berkeley would continue on-going implementation of the Hill Area Fire Fuel Management program.	
		Continuing Best Practice PUB-2.1-c: UC Berkeley would continue to plan and implement programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that campus projects incorporate fire prevention measures.	
LRDP Impact PUB-2.2: Implementation of the 2020 LRDP would not impair or interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	None required.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
PUBLIC SERVICES			
LRDP Impact PUB-2.3: Implementation of the 2020 LRDP could increase the demand for fire and emergency services, but is not anticipated to result in construction of new or altered facilities.	LTS	Continuing Best Practice PUB-2.3: UC Berkeley would continue its partnership with LBNL, ACFD, and the City of Berkeley to ensure adequate fire and emergency service levels to the campus and UC facilities.	LTS
LRDP Impact PUB-2.4: Implementation of the 2020 LRDP could temporarily result in emergency access constraints, but the mitigations would reduce this impact to a <i>less than significant</i> level.	S	LRDP Mitigation Measure PUB-2.4-a: In order to ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, campus project management staff would consult with the UCPD, campus EH&S, the BFD and ACFD to evaluate alternative travel routes and temporary lane or roadway closures prior to the start of construction activity. UC Berkeley will ensure the selected alternative travel routes are not impeded by UC Berkeley activities. LRDP Mitigation Measure PUB-2.4-b: To the extent feasible, the University would maintain at least one unobstructed lane in both directions on campus roadways at all times, including during construction. At any time only a single lane is available due to construction-related road closures, the University would provide a temporary traffic signal, signal carriers (i.e. flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, UC Berkeley would provide signage indicating alternative routes. Continuing Best Practice PUB-2.4: To the extent feasible, for all projects in the City Environs, the University would include the undergrounding of surface utilities along project street frontages, in support of Berkeley General Plan Policy S-22.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
PUBLIC SERVICES			
Tien Center Impact PUB-2.1: As a project implementing the 2020 LRDP, the Tien Center project would not result in the need for new or physically altered fire or emergency medical services facilities.	LTS	See CBP under LRDP Impact PUB-2.3.	LTS
Tien Center Impact PUB-2.2: As a project implementing the 2020 LRDP, the Tien Center project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	See LRDP Impact PUB-2.2.	LTS
Tien Center Impact PUB-2.3: As a project implementing the 2020 LRDP, the Tien Center project would not result in inadequate emergency access.	LTS	See CBP and mitigation measures under LRDP Impact PUB-2.4.	LTS
LRDP Impact PUB-3.1: Implementation of the 2020 LRDP could increase the demand for schools, but is not anticipated to create a need for new or altered facilities.	LTS	None required.	LTS
LRDP Impact PUB-4.1: Implementation of the 2020 LRDP would increase the campus population, but would not increase demand for recreation facilities to an extent that could result in substantial physical deterioration of parks and recreational facilities or the need for new or expanded facilities to maintain acceptable service ratios.	LTS	None required.	LTS
LRDP Impact PUB-4.2: Implementation of the 2020 LRDP is not anticipated to create a need for new or altered parks and recreational facilities.	LTS	None required.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
PUBLIC SERVICES			
LRDP Impact PUB-4.3: Implementation of the 2020 LRDP could include construction or expansion of recreational facilities, but continuing best practices would ensure this impact is <i>less than significant</i> .	LTS	Continuing Best Practice PUB-4.3: Any new UC Berkeley recreation facilities would be developed in accordance with design principles and guidelines established in the 2020 LRDP. All relevant 2020 LRDP mitigation measures and continuing best practices would be incorporated into the design and construction of new facilities. For each individual project, the University would evaluate potential environmental impacts and prepare all required documents in full accordance with CEQA.	LTS
LRDP Impact PUB-4.4: Implementation of the 2020 LRDP could result in the unanticipated loss of some University owned recreational facilities, which could result in increased use leading to the physical deterioration of remaining facilities, but the mitigation measure would reduce this impact to <i>less than significant</i> .	S	LRDP Mitigation Measure PUB-4.4: Before implementing any change to the use of any existing recreational facility, UC Berkeley will conduct a study to ensure that the loss of recreational use would not result in increased use at other facilities to the extent it would result in the physical deterioration of those facilities. If such deterioration is found to have the potential to occur, then the University will build replacement recreation facilities or take other measures to minimize overuse and deterioration of existing facilities in connection with removal of or reduction in use at the recreation facility in question.	LTS
TRANSPORTATION AND TRAFFIC			
LRDP Impact TRA-1: The 2020 LRDP would not increase hazards to bicyclists due to design features or incompatible uses, nor create unsafe conditions for bicyclists.	LTS	Continuing Best Practice TRA-1-a: UC Berkeley will continue in partnership with the City of Berkeley to develop a City program to: (a) maintain the Southside area between College, Dana, Dwight and Bancroft in a clean and safe condition; and (b) provide needed public improvements to the area (e.g. traffic improvements, lighting, bicycle facilities, pedestrian amenities and landscaping).	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
LRDP Impact TRA-2: University housing development in the 2020 LRDP Housing Zone could increase residential density, but given the provisions of the 2020 LRDP and continuing best practices, is not anticipated to result in inadequate parking capacity.	LTS	<p>Continuing Best Practice TRA-1-b: UC Berkeley will continue to do strategic bicycle access planning. Issues addressed include bicycle access, circulation and amenities with the goal of increasing bicycle commuting and safety. Planning considers issues such as bicycle access to the campus from adjacent streets and public transit; bicycle, vehicle, and pedestrian interaction; bicycle parking; bicycle safety; incentive programs; education and enforcement; campus bicycle routes; and amenities such as showers.</p> <p>Continuing Best Practice TRA-2: The following housing and transportation policies will be continued:</p> <ul style="list-style-type: none"> ▪ Except for disabled students, students living in UC Berkeley housing would only be eligible for a daytime student fee lot permit or residence hall parking based upon demonstrated need, which could include medical, employment, academic and other criteria. ▪ An educational and informational program for students on commute alternatives would be expanded to include all new housing sites. 	LTS
		<p>LRDP Mitigation Measure TRA-2: The planned parking supply for University housing projects under the 2020 LRDP would comply with the relevant municipal zoning ordinance as of July 2003. Where the planned parking supply included in a University housing project would make it ineligible for approval under the subject ordinance, UC Berkeley would conduct further review of parking demand and supply in accordance with CEQA.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-3: Construction-related activity under the 2020 LRDP would not substantially increase traffic loads or substantially decrease roadway capacity over current conditions. The best practices would continue to be implemented.</p>	LTS	<p>Continuing Best Practice TRA-3-a: Early in construction period planning UC Berkeley shall meet with the contractor for each construction project to describe and establish best practices for reducing construction-period impacts on circulation and parking in the vicinity of the project site.</p>	LTS
		<p>Continuing Best Practice TRA-3-b: For each construction project, UC Berkeley will require the prime contractor to prepare a Construction Traffic Management Plan which will include the following elements:</p> <ul style="list-style-type: none"> ▪ Proposed truck routes to be used, consistent with the City truck route map. ▪ Construction hours, including limits on the number of truck trips during the a.m. and p.m. peak traffic periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.), if conditions demonstrate the need. ▪ Proposed employee parking plan (number of spaces and planned locations). ▪ Proposed construction equipment and materials staging areas, demonstrating minimal conflicts with circulation patterns. ▪ Expected traffic detours needed, planned duration of each, and traffic control plans for each. 	
		<p>Continuing Best Practice TRA-3-c: UC Berkeley will manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity, to the extent feasible.</p>	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
LRDP Impact TRA-4: Construction-related parking demand associated with implementation of the 2020 LRDP would not be anticipated to exceed baseline levels.	LTS	None required.	LTS
LRDP Impact TRA-5: The 2020 LRDP is expected to generate new transit demand, or alter locations where local transit demand occurs. Given the provisions of the 2020 LRDP and campus best practices, however, significant service problems are not anticipated.	LTS	Continuing Best Practice TRA-5: The University shall continue to work to coordinate local transit services as new academic buildings, parking facilities, and campus housing are completed, in order to accommodate changing demand locations or added demand.	LTS
LRDP Impact TRA-6: The 2020 LRDP would increase vehicle trips and traffic congestion at the intersections listed below, leading to substantial degradation in level of service. The mitigations, if implemented with review and approval of the City Traffic Engineer, would reduce these impacts to a <i>less than significant</i> level.			
LRDP Impact TRA-6-a: The signalized Cedar Street/Oxford Street intersection, which would operate at LOS E during the AM peak hour regardless of the project, and degrade from LOS D to LOS E during the PM peak hour. The project would increase the intersection volume by 7 percent during the AM peak hour, and 7 percent during the PM peak hour.	S	LRDP Mitigation Measure TRA-6-a: The University will work with the City of Berkeley to redesign and, on a fair share basis, implement changes to either the westbound or northbound approach of the Cedar Street / Oxford Street intersection to provide a left-turn lane and a through lane. The University will contribute fair share funding for a periodic (annual or biennial) traffic count to allow the City to determine when an intersection redesign is needed. With the implementation of this mitigation measure, the intersection will operate at LOS B during the AM peak hour and LOS D during the PM peak hour.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-6-b: The all-way stop-controlled Durant Avenue/Piedmont Avenue intersection, which would degrade from LOS D to LOS F during the AM peak hour. The project would increase the intersection volume by 10 percent during the AM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-b: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Durant Avenue /Piedmont Avenue intersection, when a signal warrant analysis shows the signal is needed. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal is warranted. With the implementation of this mitigation measure, the intersection will operate at LOS B during both AM and PM peak hours.</p>	LTS
<p>LRDP Impact TRA-6-c: The all-way stop-controlled Derby Street/Warring Street intersection, which operates at LOS F during both AM and PM peak hours regardless of the project. The project would increase the intersection volume by 7 percent during the AM peak hour, and 6 percent during the PM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-c: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Derby Street/Warring Street intersection, and provide an exclusive right-turn lane and an exclusive through lane on the westbound approach. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated capacity improvements are warranted. With the implementation of this mitigation measure, the intersection will operate at LOS A during the AM peak hour and LOS C during the PM peak hours.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-6-d: The eastbound approach of the side-street stop-controlled Addison Street/Oxford Street intersection from LOS A to LOS E during the AM peak hour and LOS C to LOS E during the PM peak hour. The project would increase the intersection volume by 12 percent during the AM peak hour, and 10 percent during the PM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-d: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Addison Street/Oxford Street intersection, and provide the necessary provisions for coordination with adjacent signals along Oxford Street. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated coordination improvements are warranted. With the implementation of this mitigation measure, the intersection will operate at LOS A during both AM and PM peak hours.</p>	LTS
<p>LRDP Impact TRA-6-e: The eastbound approach of the side-street stop-controlled Allston Way/Oxford Street intersection would degrade from LOS D to LOS E during the AM peak hour. The intersection would continue to operate at LOS E during the PM peak hour. The project would increase the intersection volume by 11 percent during the AM peak hour, and 8 percent during the PM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-e: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at Allston Way/Oxford Street intersection, and provide the necessary provisions for coordination with adjacent signals along Oxford Street. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated coordination improvements are warranted. With the implementation of this mitigation measure, the intersection will operate at LOS A during both AM and PM peak hours.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-6-f: The eastbound approach of the side-street stop-controlled Kittredge Street/Oxford Street intersection from LOS C to LOS F during the AM peak hour. The intersection would continue to operate at LOS F during the PM peak hour. The project would increase the intersection volume by 14 percent during the AM peak hour, and 10 percent during the PM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-f: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Kittredge Street/Oxford Street intersection, and provide the necessary provisions for coordination with adjacent signals along Oxford Street. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated coordination improvements are warranted. With the implementation of this mitigation measure, the intersection will operate at LOS A during both AM and PM peak hours.</p>	LTS
<p>LRDP Impact TRA-6-g: The northbound approach of the side-street stop-controlled Bancroft Way/Ellsworth Street intersection would degrade from LOS D to LOS E during the PM peak hour. The project would increase the intersection volume by 19 percent during the AM peak hour, and 10 percent during the PM peak hour.</p>	S	<p>LRDP Mitigation Measure TRA-6-g: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Bancroft Way/Ellsworth Street intersection, and provide the necessary provisions for coordination with adjacent signals along Bancroft Way. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated coordination improvements are warranted. With the implementation of this mitigation measure, the intersection will operate at LOS B during both AM and PM peak hours.</p>	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-7: Development under the 2020 LRDP would contribute to the projected unacceptable delay at the all-way stop-controlled Bancroft Way/Piedmont Avenue intersection, which is projected to operate at LOS F during both AM and PM peak hours regardless of the project. The project would increase the intersection volume by 11 percent during the AM peak hour, and 5 percent during the PM peak hour. The mitigation would, if implemented with review and approval of the City Traffic Engineer, reduce this impact to a <i>less than significant</i> level.</p>	S	<p>LRDP Mitigation Measure TRA-7: The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Bancroft Way/Piedmont Avenue intersection, and provide an exclusive left-turn lane and an exclusive through lane on the northbound approach. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated capacity improvements are warranted. With the implementation of this mitigation measure, the intersection would operate at LOS B during both AM and PM peak hours.</p>	LTS
<p>LRDP Impact TRA-8: The 2020 LRDP would increase vehicle trips and traffic congestion at the intersections listed below, leading to substantial degradation in level of service. These impacts are <i>significant and unavoidable</i>.</p> <ul style="list-style-type: none"> ▪ The signalized University Avenue / Sixth Street intersection, which is projected to operate at LOS F during both AM and PM peak hours regardless of the project. The project would increase the intersection volume by 7 percent during the AM peak hour, and 6 percent during the PM peak hour. ▪ The signalized University Avenue / San Pablo Avenue intersection, which is projected to operate at LOS F during both AM and PM peak hours regardless of the project. The project would increase the intersection volume by 8 percent during the AM peak hour, and 6 percent during the PM peak hour. 	S	<p>Magnitude of impact reduced through trip reduction measures. No feasible design measures.</p>	SU

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
<p>LRDP Impact TRA-9: Housing projects in the 2020 LRDP Housing Zone could increase vehicle trips and traffic congestion in the vicinity of project sites, which could lead to substantial degradation in level of service. The mitigation would reduce this impact to a <i>less than significant level</i>.</p>	S	<p>LRDP Mitigation Measure TRA-9: Prior to approving any development outside the City Environs, the University will conduct a traffic study to assess the localized traffic impacts of this development. Mitigations required to ensure that the housing project does not cause LOS deterioration exceeding the stated impact levels would be implemented, if necessary.</p>	LTS
<p>LRDP Impact TRA-10: Development under the 2020 LRDP would cause the following Alameda County CMP Designated System and MTS roadways listed below to exceed the level of service standard established by the CMA. This impact is <i>significant and unavoidable</i>.</p> <ul style="list-style-type: none"> ▪ Ashby Avenue westbound, between Adeline Street and San Pablo Avenue ▪ Ashby Avenue eastbound, Between College Avenue and Domingo Street ▪ University Avenue westbound, between MLK Jr. Way and I-80 ▪ San Pablo Avenue northbound, between Gilman Street and Marin Avenue ▪ Shattuck Avenue southbound, between Dwight Way and Adeline Street ▪ Shattuck Avenue southbound, between Hearst Avenue and University Avenue (MTS only) ▪ Dwight Way westbound, between MLK Jr. Way and Sixth Street (MTS only) 	S	<p>Magnitude of impact reduced through trip reduction measures. No feasible design measures.</p>	SU
<p>LRDP Impact TRA-11: Implementation of the 2020 LRDP could induce a “mode shift” to driving by some commuters who currently take transit, bicycle or walk. This would be inconsistent with the intent of the 2020 LRDP. The mitigation would reduce this impact to a <i>less than significant level</i>.</p>	S	<p>LRDP Mitigation Measure TRA-11: The University will implement the following measures to limit the shift to driving by existing and potential future non-auto commuters:</p> <ul style="list-style-type: none"> ▪ Review the number of sold parking permits in relation to the number of campus parking spaces and demographic trends on a yearly basis, and establish limits on the total number of parking permits sold proportionate to the number of spaces, with the objective of reducing the ratio of permits to spaces over time as the number of spaces grows, thus ensuring that new supply improves 	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
LRDP Impact TRA-12: The level of pedestrian growth associated with the LRDP may require physical and operational modifications to the intersections and roadways in the immediate campus vicinity and on major pedestrian routes serving UC Berkeley, to ensure adequate capacity for pedestrian movement and adequate design to protect pedestrian safety. The mitigation would reduce this impact to a <i>less than significant</i> level.	S	<p>the existing space-to-permit ratio without encouraging mode change to single occupant vehicles.</p> <ul style="list-style-type: none"> ▪ As new parking becomes operational, assign a portion of the new or existing parking supply to short-term or visitor parking, thus targeting parkers who choose on-street parking now, and also effectively reserving part of the added supply for non-commuters. ▪ Expand the quantity of parking that is available only after 10:00 a.m., to avoid affecting the travel mode use patterns of the peak hour commuting population, as new parking inventory is added to the system. ▪ Review and consider reductions in attended parking as new parking inventory is added to the system and other impacts do not reduce parking supply. 	LTS
Tien Center Impact TRA-1: The construction of the Tien Center would not substantially increase traffic loads or substantially decrease street system capacity over current conditions.	LTS	None required.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
TRANSPORTATION AND TRAFFIC			
Tien Center Impact TRA-2: The Tien Center would not adversely impact local pedestrian and bicycle circulation.	LTS	None required.	LTS
UTILITIES AND SERVICE SYSTEMS			
LRDP Impact USS-1.1: Implementation of the 2020 LRDP would increase water demand, but this increase is not anticipated to result in a significant impact on water entitlements and resources, nor result in construction of new or altered facilities.	LTS	Continuing Best Practice USS-1.1: For campus development that increases water demand, UC Berkeley would continue to evaluate the size of existing distribution lines as well as pressure of the specific feed affected by development on a project-by-project basis, and necessary improvements would be incorporated into the scope of work for each project to maintain current service and performance levels. The design of the water distribution system, including fire flow, for new buildings would be coordinated among UC Berkeley staff, EBMUD, and the Berkeley Fire Department.	LTS
LRDP Impact USS-2.1-a: Implementation of the 2020 LRDP may result in increased demand for wastewater treatment, but this increase is not anticipated to result in a significant impact on treatment capacity, nor result in construction of new or altered facilities.	LTS	Continuing Best Practice USS-2.1-a: UC Berkeley will promote and expand the central energy management system (EMS), to tie building water meters into the system for flow monitoring.	LTS
LRDP Impact USS-2.1-b: Implementation of the 2020 LRDP may result in increased demand on wastewater collection systems and the construction of new or altered facilities, but these are not anticipated to have significant environmental impacts.		Continuing Best Practice USS-2.1-b: UC Berkeley will analyze water and sewer systems on a project-by-project basis to determine specific capacity considerations in the planning of any project proposed under the 2020 LRDP.	
		Continuing Best Practice USS-2.1-c: UC Berkeley will continue and expand programs retrofitting plumbing in high-occupancy buildings, and seek funding for these programs from EBMUD or other outside agencies as appropriate.	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
UTILITIES AND SERVICE SYSTEMS			
		<p>Continuing Best Practice USS-2.1-d: UC Berkeley will continue to incorporate specific water conservation measures into project design to reduce water consumption and wastewater generation. This could include the use of special air-flow aerators, water-saving shower heads, flush cycle reducers, low-volume toilets, drip irrigation systems, and the use of drought resistant plantings in landscaped areas.</p>	
		<p>Continuing Best Practice USS-2.1-e: The current agreement under which UC Berkeley makes payments to the City of Berkeley to help fund sewer improvements terminates at the conclusion of academic year 2005-2006 or upon approval of the 2020 LRDP. Any future payments to service providers to help fund wastewater treatment or collection facilities would conform to Section 54999 of the California Government Code, including but not limited to the following provisions:</p> <ul style="list-style-type: none"> ▪ Fees would be limited to the cost of capital construction or expansion. ▪ Fees would be imposed only after an agreement has been negotiated by the University and the service provider. ▪ The service provider must demonstrate the fee is nondiscriminatory: i.e. the fee must not exceed an amount determined on the basis of the same objective criteria and methodology applied to comparable nonpublic users, and is not in excess of the proportionate share of the cost of the facilities of benefit to the entity property being charged, based upon the proportionate share of use of those facilities. ▪ The service provider must demonstrate the amount of the fee does not exceed the amount necessary to provide capital facilities for which the fee is charged. 	

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
UTILITIES AND SERVICE SYSTEMS			
LRDP Impact USS-3.1: At all sites outside the Hill Campus, implementation of the 2020 LRDP could alter drainage patterns in the project area and increase impervious surfaces, but would not exceed the capacity of stormwater drainage systems.	LTS	Continuing Best Practice USS-3.1: UC Berkeley shall continue to manage runoff into storm drain systems such that the aggregate effect of projects implementing the 2020 LRDP is no net increase in runoff over existing conditions	LTS
LRDP Impact USS-3.2: Projects implemented in the Hill Campus under the 2020 LRDP could alter drainage patterns and increase impervious surfaces, which could exceed the capacity of stormwater drainage systems, but the mitigation would ensure this impact is <i>less than significant</i> .	S	LRDP Mitigation Measure USS-3.2: In addition to Utilities Best Practice USS-3.1, projects proposed with potential to alter drainage patterns in the Hill Campus would be accompanied by a hydrologic modification analysis, and would incorporate a plan to prevent increases of flow from the newly developed site, preventing downstream flooding and substantial siltation and erosion.	LTS
LRDP Impact USS-4.1: Implementation of the 2020 LRDP would increase demand for steam, but is not anticipated to result in a need for new or altered facilities.	LTS	None required.	LTS
LRDP Impact USS-5.1: Implementation of the 2020 LRDP would not violate any applicable federal, state, and local statutes and regulations related to solid waste.	LTS	Continuing Best Practice USS-5.1: UC Berkeley would continue to implement a solid waste reduction and recycling program designed to reduce the total quantity of campus solid waste that is disposed of in landfills during implementation of the 2020 LRDP.	LTS
LRDP Impact USS-5.2: Implementation of the 2020 LRDP may result in increased generation of solid waste, but is not anticipated to exceed the capacity of permitted sites.	LTS	LRDP Mitigation Measure USS-5.2: In accordance with the Regents-adopted green building policy and the policies of the 2020 LRDP, the University would develop a method to quantify solid waste diversion. Contractors working for the University would be required under their contracts to report their solid waste diversion according to the University's waste management reporting requirements.	LTS
LRDP Impact USS-6.1: Implementation of the 2020 LRDP would result in increased use of energy, but is not anticipated to result in the need for new or altered production and/or transmission facilities.	LTS	None required.	LTS

TABLE 2-1 SUMMARY OF IMPACTS, MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Impact	Significance Before Mitigation	Mitigation Measures and Continuing Best Practices	Significance With Mitigation
UTILITIES AND SERVICE SYSTEMS			
LRDP Impact USS-6.2: Implementation of the 2020 LRDP would not encourage the wasteful or inefficient use of energy.	LTS	None required.	LTS

