CHAPTER 2.0
EXECUTIVE SUMMARY

This chapter is an executive summary of the Environmental Impact Report (EIR) for the implementation of the University of California Irvine (UCI) 2007 Long Range Development Plan (LRDP), prepared in compliance with the California Environmental Quality Act (CEQA). A specific project proposed for implementation on the UCI campus, the Irvine Campus Housing Authority Area 9/2 (ICHA 9-2), is also analyzed in this EIR. The project-level analysis for ICHA 9/2 is provided in Volume III of this EIR. The executive summary for this project is also provided in Volume III. Comments on the Draft EIR, consisting of Volumes I through III, will be provided in Volume IV of the Final EIR. Volume IV will also include responses to received comments, a summary of revisions to the Draft EIR, and Mitigation Monitoring and Reporting Programs for the 2007 LRDP and ICHA 9/2.

This chapter highlights the major areas of importance in the environmental analysis for the 2007 LRDP, as required by CEQA Guidelines Section 15123. It also provides a brief description of the 2007 LRDP, project objectives, and alternatives to the 2007 LRDP. In addition, this chapter provides tables summarizing: (1) the direct and cumulative impacts that would occur from implementation of the 2007 LRDP; (2) the level of impact significance before mitigation; (3) the recommended mitigation measures that would avoid or reduce significant environmental impacts; and (4) the level of impact significance after mitigation measures are implemented. A table is also provided which compares the anticipated impacts of the 2007 LRDP with those of each project alternative.

2.1 OVERVIEW

As required by CEQA, Volumes I and II of this EIR (1) assess the potentially significant direct, indirect, and cumulative environmental effects of UCI's 2007 LRDP; (2) identify potential feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluate a range of reasonable alternatives to the 2007 LRDP, including the required No Project Alternative. The Board of Regents of the University of California is the "lead agency" for the 2007 LRDP evaluated in Volumes I and II of this EIR, and has the principal responsibility for certifying the EIR and approving the 2007 LRDP.

Pursuant to CEQA Guidelines, Volumes I and II of this EIR comprise a Program EIR that evaluates the effects of the entire 2007 LRDP at a program level. This EIR will be used by The Regents of the University of California to evaluate the environmental implications of adopting the 2007 LRDP. Once certified, this EIR would also be used to tier subsequent environmental analyses for future UCI development projects.

2.2 PROJECT DESCRIPTION

The 2007 LRDP is an update to the 1989 LRDP which planned to accommodate an enrollment of 26,050 students at UCI by the 2005-06 academic year. The 2007 LRDP identifies a new horizon year of 2025-26 which extends the plan's usefulness to the University of California (UC), the State, and the local community in the event that public policy or other factors dictate increased student access to UC or additional capacity to conduct research beyond the horizon year of 2015-16 established in current enrollment plans.

The UCI campus has the physical capacity to exceed the number of students identified in current enrollment plans. Accordingly, UCI has planned deliberately to fully utilize the physical resources entrusted to it, given the projected regional deficit in physical capacity to meet expected demand for admission to UC. UCI has determined that it could physically accommodate a three-term average headcount enrollment of 37,000 students, should the State and UC decide to increase enrollment at specific campuses. With UCI's land area, the 2007 LRDP could accommodate this level of enrollment by 2025-26 with only a modest change in the current standards of density and land use. (The 2007 LRDP is a land use plan and does not commit either the campus or UC to a specific enrollment target.) While current UC and State demographic projections suggest that UCI may not reach 37,000 students by 2025-26, the 2007 LRDP identifies the physical development needed if UCI eventually grows to this extent.

Associated with this level of enrollment, the 2007 LRDP also contains the following key characteristics:

- The 2007 LRDP accommodates a 103 percent increase in academic and support space at UCI, compared to existing development, to support projected program expansion and new academic programs. In addition, the plan accommodates expanded opportunities for public-private collaboration within the campus Inclusion Areas.

- The 2007 LRDP enables a significant expansion of on-campus student housing to accommodate 50 percent of enrollment.

- The 2007 LRDP provides flexibility to expand on-campus faculty and staff housing from an existing program of 1,100 dwelling units to 1,700 units. In addition, UCI will continue to pursue additional faculty and staff housing opportunities off campus.

- The 2007 LRDP land use plan balances program needs and environmental and site conditions, provides compatibility between campus land use zones and off-campus land uses, and establishes open space buffers where appropriate.

- The 2007 LRDP includes an expanded UCI transportation demand management program consistent with UC policies for sustainable transportation practices. The plan also describes on-campus roadway improvements needed to meet long-term needs, including new roadway links, widening of existing campus roadways, and intersection modifications to improve service levels.

2.3 PROJECT OBJECTIVES

The fundamental project objectives for the 2007 LRDP are:

- To accommodate the physical resources needed to support UCI's strategic academic goals, including growth plans associated with the enhancement of its standing among the best comprehensive research universities in the country.
- To accommodate the student enrollment growth needed to achieve campus academic objectives and serve regional and statewide enrollment demands.
- To accommodate new teaching, research, and clinical uses in the Health Sciences.
- To accommodate additional moderately priced, on-campus housing to support the recruitment and retention of faculty, students, and staff, and to limit impacts to the off-campus housing market and the regional circulation network.
- To accommodate social, cultural, and recreational opportunities that contribute to the quality of campus life.
- To refine campus land use, circulation, and open space plans to promote the development of a cohesive community and to enhance the quality of the campus environment.

2.4 IMPACT SUMMARY

Volumes I and II of this EIR examine the potential environmental effects from implementation of the 2007 LRDP, including information related to existing site conditions, analyses of the types and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid environmental impacts. In accordance with Appendix G of the CEQA Guidelines, the potential environmental effects of the 2007 LRDP are analyzed for the following issue areas:

- Aesthetics
- Air Quality
- Biological Resource
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation, Traffic, and Parking
- Utilities and Service Systems

Tables 2-1 and 2-2, presented at the end of this chapter, provide summaries of the environmental impacts that could result from implementation of the 2007 LRDP and feasible mitigation measures that could reduce or avoid environmental impacts. For each impact, Tables 2-1 and 2-2 identify the significance of the impact before mitigation, applicable mitigation measures, and the level of significance of the impact after the implementation of the mitigation measures.

Based upon the analysis provided in the Initial Study for the 2007 LRDP (Appendix A), impacts to Agricultural Resources and Mineral Resources were determined to be "Effects Not Found to be Significant", according to Section 15128 of the CEQA Guidelines. These issues are discussed further in Chapter 5, Volume I of this EIR.

2.5 ALTERNATIVES TO THE 2007 LRDP

The following alternatives were analyzed in detail in Volume I of this EIR and compared to the 2007 LRDP. The objective of the alternatives analysis is to consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. The LRDP alternatives include:

- **Alternative 1: No Project (No Growth).** Under this alternative, the 2007 LRDP would not be implemented, no further development would occur, and student enrollment capacity would not be increased. UCI would not have an updated land use document for the campus.

- **Alternative 2: Reduced Student Enrollment Capacity (A).** Under this alternative, the student enrollment capacity of the 2007 LRDP would be lowered to 32,000 students. While the campus population would be smaller, this alternative would include the same land use changes as in the 2007 LRDP and the development would require less square footage than the 2007 LRDP would accommodate, which would likely be reflected in reduced building heights.

- **Alternative 3: Reduced Student Enrollment Capacity (B).** Under this alternative, the student enrollment capacity of the 2007 LRDP would be lowered to 35,000 students. While the campus population would be smaller, this alternative would include the same land use changes as in the 2007 LRDP and the development would require less square footage than the 2007 LRDP would accommodate, which would likely be reflected in reduced building heights.

- **Alternative 4: Reduced Development Footprint.** Under this alternative, the 2007 LRDP would be implemented with a smaller development footprint, increasing the amount of open space on campus. A reduced development footprint would be accomplished by reducing the designated land area for certain development categories, such as housing, mixed-use, and open space.

- **Alternative 5: Increased Campus Housing**. This alternative would accommodate a larger on-campus housing program at the same student enrollment capacity as the 2007 LRDP. The housing goal under this alternative would be increased from 50 to 75 percent of undergraduate and graduate students on campus. This alternative would also accommodate approximately 20 percent of the faculty and staff, while the 2007 LRDP would accommodate approximately 11 to 15 percent, depending on the development of the Housing Reserve.

- **Alternative 6: Increased TDM.** This alternative would implement additional Transportation Demand Management (TDM) strategies to achieve a measurable reduction in project-related traffic impacts, with the objective of an overall trip reduction of 25% for Peak Hour Trips (PHT) and Average Daily Trips (ADT).

Detailed descriptions and an analysis of potential impacts of each alternative are presented in Chapter 6, Alternatives (in Volume I of this Draft EIR). Table 2-3 presents the significant environmental impacts of these alternatives compared to those of the 2007 LRDP. The environmentally superior alternative would be the Reduced Student Enrollment Capacity Alternative A. This alternative would limit student enrollment growth to 32,000 and would, therefore, reduce some of the significant impacts that would occur from the 2007 LRDP such as noise, traffic, and population. However, impacts to biological resources, cultural resources, hazardous materials, hydrology and water quality, land use, and noise from this alternative would be similar to impacts from the 2007 LRDP because the developable area on campus would be similar. The Reduced Student Enrollment Capacity Alternative A would accomplish five of the 2007 LRDP's six goals, and would partially accomplish the remaining goal.

Table 2-1. Project Impacts and Mitigation Measures*

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.1 Aesthetics				
Scenic Vistas and Visual Character and Quality	Implementation of residential and mixed use projects along the southern edge of the campus under the 2007 LRDP would substantially degrade the existing visual character and quality of the South Campus as viewed from Bonita Canyon Drive (Aes-1).	S	***Aes-1A*** Prior to project design approval for future projects that implement the 2007 LRDP and are located in the South Campus, in the vicinity of Bonita Canyon Drive, UCI shall ensure that the projects include design features to minimize visual impacts from off-campus areas. These design features shall include, but are not limited to, the following: i. A 50-foot wide (minimum) landscaped buffer located along the edge of the campus along the project frontage; ii. Building mass and/or proportions and exterior treatments and/or colors that are compatible with the surrounding development and visual character; and iii. Project landscape design that reduces visual impacts and integrates the project into the visual landscape.	LS
Lighting and Glare	Additional lighting from new development in the North and South Campuses as a result of implementation of the 2007 LRDP could significantly impact sensitive biological resources in the SJFM and residential areas along Bonita Canyon Drive. New development throughout the campus could produce additional buildings which would significantly increase glare impacts to both on- and off-campus viewers and create locations with an increase in light impacts resulting from additional vehicles (Aes-2).	S	***Aes-2A*** Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (e.g., double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare. ***Aes-2B*** Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with *UCI's Campus Standards and Design Criteria* for outdoor lighting, the plan shall include, but not be limited to, the following design features: i. Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors; ii. Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			iii. Shielding of direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping.	
4.2 Air Quality				
Consistency with Applicable Air Quality Plan	Implementation of the 2007 LRDP would not conflict with, or obstruct implementation of, the 2007 AQMP or the SIP.	None	No mitigation is required.	N/A
Consistency with Air Quality Standards	Worst-case construction scenario and operational emissions from future projects associated with implementation of the 2007 LRDP would exceed significance thresholds for CO, VOCs, NO_x, PM_{10} and $PM_{2.5}$. Individual construction projects may or may not result in significant impacts, depending on the project size and features (Air-2).	S	***Air-2A*** During project level environmental review of future projects that implement the 2007 LRDP and that could result in a significant air quality impact from construction emissions, UCI shall retain a qualified air quality specialist to prepare an air quality assessment of the anticipated project-related construction emissions. The assessment shall quantify the project's estimated construction emissions with and without implementation of applicable Best Management Practices (BMPs) listed in mitigation measure Air-2B and compare them with established SCAQMD significance thresholds. In addition, the air quality assessment shall include analysis of temporal phasing as a means of reducing construction emissions. If the estimated construction emissions are under SCAQMD's significance thresholds or if mitigation measure Air-2B would reduce emissions to below established thresholds, then the project's direct impact to air quality would be less than significant and no additional mitigation would be required. If the project's construction emissions would exceed established thresholds with implementation of applicable BMPs listed in mitigation measure Air-2B, and no additional mitigation to reduce the emissions below the threshold is feasible, then the project's direct impact to air quality would remain significant following mitigation. ***Air-2B*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall ensure that the project construction contract includes a construction emissions mitigation plan, including measures compliant with SCAQMD Rule 403 (Fugitive Dust) to be implemented and supervised by the on-site construction supervisor, which shall include, but not be limited to, the following BMPs:	SU

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			i. During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, non-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor. ii. During windy days when fugitive dust can be observed leaving the construction site, additional applications of water shall be required at a rate to be determined by the on-site construction supervisor. iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities. iv. Areas of the construction site that will remain inactive for three months or longer following clearing, grubbing and/or grading shall receive appropriate BMP treatments (e.g., revegetation, mulching, covering with tarps, etc.) to prevent fugitive dust generation. v. All exposed soil or material stockpiles that will not be used within 3 days shall be enclosed, covered, or watered twice daily, or shall be stabilized with approved non-toxic chemical soil binders at a rate to be determined by the on-site construction supervisor. vi. Unpaved access roads shall be stabilized via frequent watering, non-toxic chemical stabilization, temporary paving, or equivalent measures at a rate to be determined by the on-site construction supervisor. vii. Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered. viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites. ix. Where visible soil material is tracked onto adjacent public paved roads, the paved roads shall be swept and debris shall be returned to the construction site or transported off site for disposal. x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.	

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			xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable. xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes. xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel. xiv. Heavy construction equipment shall use low NO_x diesel fuel to the extent that it is readily available at the time of construction. xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines. xvi. The construction contractor shall develop a construction traffic management plan that includes the following: • Scheduling heavy-duty truck deliveries to avoid peak traffic periods • Consolidating truck deliveries xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers. xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible. Project constructions plans and specifications will include a requirement to define and implement a work program that would limit the emissions of reactive organic gases (ROG's) during the application of architectural coatings to the extent necessary to keep total daily ROG's for each project to below 75 pounds per day, or the current SCAQMD threshold, throughout that period of construction activity to the extent feasible. The specific program may include any combination of restrictions on the types of paints and coatings, application methods, and the amount of surface area coated as determined by the contractor. xix.	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			xx. The construction contractor shall maintain signage along the construction perimeter with the name and telephone number of the individual in charge of implementing the construction emissions mitigation plan, and with the telephone number of the SCAQMD's complaint line. The contractor's representative shall maintain a log of any public complaints and corrective actions taken to resolve complaints. ***Air-2C*** UCI shall ensure that operational air emissions, including area sources, stationary sources, and vehicular emissions, are reduced to the extent possible via the following mitigation measures: i. UCI shall continue to implement and expand its alternative transportation program by continuing to assess new opportunities, programs, and technologies to reduce vehicular trips. This program shall consider the following elements: • Significant incentives aimed to expand UCI vanpool, carpool, and other ridesharing programs; • Significant incentives aimed to expand UCI public transit use off campus; • Promotion of Express Bus service in the campus vicinity and Express Bus service routes from key UCI commuter locations off campus; • Expansion of campus shuttle and other campus transit systems, including point-to-point shuttles with expanded routes and operations to key destinations, and coordination of the on-campus transit systems with existing and future public transit systems off campus to accommodate routes, transit stops, stations, and other programs and projects as deemed appropriate, including community transit programs in the City of Irvine and City of Newport Beach; • Expansion of UCI bike programs and bicycle infrastructure, including expanded bikeways, BikePorts, and Bike Service Stations; and • Support of alternative transportation organizations. ii. All stationary sources shall comply with the applicable SCAQMD Rules and Regulations, including New Source Review, Best Available Control Technology, and source-specific requirements. Stationary sources shall employ state-of-the-art controls, where applicable, to reduce air emissions to the extent possible.	

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			iii. Emissions from area sources (e.g., cooling and heating systems, landscaping, consumer products, etc.) shall be reduced to the extent possible through implementation of UCI's energy efficiency programs. Energy-saving measures include using central plant cooling and heating systems for buildings in the Academic Core; orienting buildings to the north for natural cooling and heating; implementing the UCI standard to exceed Title 24 energy efficiency by 20% or more; and increasing insulation in building walls and attics beyond Title 24 requirements.	
Sensitive Receptors	Implementation of the 2007 LRDP would not expose sensitive receptors to carcinogenic, non-carcinogenic, and localized CO pollutant concentrations in excess of regulatory standards.	LS	No mitigation is required.	N/A
Objectionable Odors	Implementation of the 2007 LRDP is not likely to produce objectionable odors affecting a substantial number of people.	None	No mitigation is required.	N/A
4.3 Biological Resources				
Candidate, Sensitive, or Special Status Plant Species	Implementation of the 2007 LRDP could result in indirect impacts to existing or potentially occurring candidate, sensitive, or special status plant species within the campus Planning Areas or in adjacent areas within the UCI NCCP Reserve Area and the SJFM (Bio-1).	S	***Bio-1A*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP and involve land clearing, grading, or similar land development activities adjacent to designated habitat areas including the UCI NCCP Reserve Area, and San Joaquin Freshwater Marsh Reserve (SJFM), UCI shall retain a qualified biologist to conduct a sensitive plant survey of the respective areas within 150 feet of the approved limits of disturbance. If sensitive plant species are detected from the survey, then UCI shall approve contractor specifications that include measures to reduce indirect construction and post-construction impacts to the identified species, to the maximum extent feasible. These measures shall include, but are not limited to, the following: i. A pre-construction meeting shall be held to ensure that construction crews are informed of the sensitive plants in the vicinity of the construction site. Prior to commencement of clearing or grading activities, a biologist (or other qualified person) shall supervise the installation of temporary construction fencing along the approved limits of disturbance to discourage errant intrusions into the identified sensitive plants by construction vehicles or personnel. All construction access and circulation shall be limited to designated construction zones. This fencing shall be removed upon completion of construction activities. ii. Storm water treatment and erosion control measures or facilities shall be maintained in a manner that avoids the discharge of polluted runoff and erosion impacts to the identified sensitive	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			plants. In areas that have been set aside as mitigation for project impacts or are known to support species listed as threatened or endangered, the work shall be overseen by a qualified biologist. iii. Refer to mitigation measure Air-2B for dust control measures during construction. iv. Staging areas for equipment and materials shall be located at least 50 feet from the identified sensitive plants. During and after construction, the proper use and disposal of oil, gasoline, diesel fuel, antifreeze, and other toxic substances shall be enforced. v. Equipment to extinguish small brush fires (such as from trucks or other vehicles) shall be present on-site during all construction phases, along with personnel trained in the use of such equipment. Smoking shall be prohibited in construction areas adjacent to flammable vegetation. vi. A biological monitor shall be present on-site on at least a weekly basis during rough grading to ensure that the fenced construction limits are not exceeded. vii. Irrigation for project landscaping shall be minimized and controlled in areas adjacent to the identified sensitive plants through measures such as designing irrigation systems to match landscaping water needs, satellite-controlled timers, water management systems, and automatic flow reducers/shut-off valves that are triggered by a drop in water pressure from broken sprinkler heads or pipes. To the extent practicable, drainage from development areas shall be directed away the identified sensitive plants. If this is not feasible, then energy dissipation measures shall be installed at the drainage outlets in the vicinity of the identified sensitive plants to prevent erosive flow velocities. viii. Invasive species shall not be used in landscaped areas in the immediate vicinity of the identified sensitive plants. ix. Integrated Pest Management principles shall be implemented in landscaped and revegetation areas adjacent to the identified sensitive plants for chemical pesticides, herbicides and fertilizers, through alternative weed/pest control measures (e.g., hand removal) and proper application techniques (e.g., conformance to manufacturer specifications and legal requirements).	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
Candidate, Sensitive, or Special Status Animal Species	Implementation of the 2007 LRDP could result in direct impacts to the western burrowing owl, a California Species of Special Concern (Bio-2A); and indirect impacts to existing or potentially occurring candidate, sensitive, or special status wildlife species within the campus Planning Areas or in adjacent areas within the UCI NCCP Reserve Area and the SJFM (Bio-2B).	S	***Bio-2A*** Prior to initiating on-site construction for future projects in the east campus and west campus that implement the 2007 LRDP and that involve land clearing, grading, or similar land development activities adjacent to suitable habitat for the western burrowing owl (i.e., large open areas of non-native grassland, ruderal (weedy) areas, and scrub habitat), UCI shall retain a qualified biologist to conduct a burrowing owl survey of the respective habitat areas within 300 feet of the approved limits of disturbance. If occupied burrows are detected from the survey, then they shall not be disturbed during the nesting season (February 1 through August 31) until the biologist verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows. When destruction of occupied burrows is unavoidable, relocation burrows shall be created (by installing artificial burrows) at a ratio of 1:1 in suitable foraging habitat. The biologist shall document all findings and results in a report submitted to UCI. ***Bio-2B*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP and that involve land clearing, grading, or similar land development activities adjacent to habitat areas identified as suitable for sensitive wildlife species, UCI shall retain a qualified biologist to conduct a sensitive wildlife survey of the respective areas within 150 feet of the approved limits of disturbance. If sensitive wildlife species are detected from the survey, then UCI shall approve contractor specifications that include measures to reduce indirect construction and post-construction impacts to the identified species, to the maximum extent feasible. These measures shall include, but are not limited to, the following: i. A pre-construction meeting shall be held to ensure that construction crews are informed of the sensitive wildlife and habitats in the vicinity of the construction site. Prior to commencement of clearing or grading activities, a biologist (or other qualified person) shall supervise the installation of temporary construction fencing along the approved limits of disturbance to discourage errant intrusions into the identified sensitive wildlife habitats by construction vehicles or personnel. All construction access and circulation shall be limited to designated construction zones. This fencing shall be removed upon completion of construction activities.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			ii. If suitable habitat for raptors or protected bird species is present and raptors or protected bird species are observed in the vicinity, the pre-construction surveys for active nests shall be performed within 30 calendar days prior to commencement of clearing or grading activities during the breeding season for raptors and protected bird species (generally February 1 through August 31) at locations where suitable nesting habitat exists within 500 feet of the approved limits of disturbance. Construction activities within 500 feet of active raptor nests (300 feet for protected bird species) shall be monitored by the biologist and modified as directed by the biologist until the biologist determines that the nest is no longer active. Construction activity may encroach into the 500-foot buffer area only at the discretion of the biologist. iii. Refer to mitigation measure Noi-2A for noise abatement measures during construction. iv. Storm water treatment and erosion control measures or facilities shall be maintained in a manner that avoids the discharge of polluted runoff and erosion impacts to the identified sensitive plants. v. Refer to mitigation measure Air-2B for dust control measures during construction. vi. Night lighting shall be avoided during construction. Any necessary lighting shall be shielded to minimize temporary lighting of the surrounding habitat. vii. A biological monitor shall be present on-site on at least a weekly basis during rough grading to ensure that the fenced construction limits are not exceeded. viii. Permanent lighting adjacent to natural habitat areas shall be selectively placed, shielded, and directed to minimize output to sensitive wildlife.	
Riparian Habitat and Other Sensitive Natural Communities	Implementation of the 2007 LRDP would result in direct impacts to mule fat scrub and herbaceous wetland (Bio-3A); and indirect impacts to a variety of sensitive vegetation communities within dedicated open space areas in the campus Planning Areas or in adjacent areas within the UCI NCCP Reserve Area and the SJFM (Bio-3B).	S	***Bio-3A*** For future projects that implement the 2007 LRDP and are located on sites containing mule fat scrub or herbaceous wetland habitats, UCI shall retain a qualified biologist to conduct a survey of these habitats. If project-level surveys determine that mule fat scrub riparian habitat and/or herbaceous wetland habitat may be impacted by the project, then mitigation measures Bio-3B and 3C shall be implemented. ***Bio-3B*** For future projects that implement the 2007 LRDP and could impact mule fat scrub riparian habitat and/or herbaceous	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			wetland habitats as determined by mitigation measure Bio-3A, design features shall be considered to avoid and/or minimize direct impacts to these sensitive vegetation communities, to the extent feasible. If it is not feasible to avoid these impacts, then mitigation measure Bio-3C shall be implemented. ***Bio-3C*** For future projects that implement the 2007 LRDP and would impact mule fat scrub riparian habitat and/or herbaceous wetland habitat, if these areas contain jurisdictional wetlands, all necessary regulatory permits shall be obtained and impacts shall be mitigated through implementation of Mitigation Measure Bio 4A. If no jurisdictional wetlands are present, impacts to mule fat scrub riparian habitat and/or herbaceous wetland habitat of greater than 0.1 acre shall be mitigated at ratios of 1:1 through habitat creation, restoration, or enhancement. Mitigation shall occur within dedicated campus open space areas where feasible, or at off-campus locations if on-site mitigation is not feasible. A qualified biologist shall assist in preparation, implementation, and monitoring of a habitat restoration plan, identifying the site preparation and installation requirements, establishment, monitoring, and long term management of the mitigation areas. Impacts to less than 0.1 acre of these habitat types, where no jurisdictional wetlands are present, would not require mitigation. ***Bio-3D*** As early as possible in the planning process for future projects that implement the 2007 LRDP and are adjacent to designated campus open space areas containing riparian or wetland vegetation, UCI shall ensure that the projects include a 50-foot setback from the flow line, to the extent practicable.	
Wetlands	Implementation of the 2007 LRDP would result in direct and indirect impacts to federal protected wetlands and other areas that could be subject to USACE, CDFG, or RWQCB jurisdiction (Bio-4).	S	***Bio-4A*** For future projects that implement the 2007 LRDP and are located on sites containing (or within 50 feet of) wetlands or other jurisdictional areas, or on sites containing (or within 25 feet of) a natural drainage course, UCI shall retain a qualified biologist to prepare a jurisdictional delineation. The jurisdictional delineation shall identify the presence of any areas that are subject to USACE, CDFG, or RWQCB jurisdiction, and the potential for the project to adversely affect these jurisdictional areas. If there is potential for the project to adversely affect jurisdictional areas all necessary regulatory permits shall be obtained and impacts shall be avoided or mitigated through implementation of mitigation measures established through consultation with regulatory agencies and as specified in the final regulatory permits and conditions.	LS
Wildlife Movement Corridors	Implementation of the 2007 LRDP would not interfere with wildlife movement corridors or impede movement by native species.	None	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.4 Cultural Resources				
Archaeological Resources	Project grading or excavation from implementation of the 2007 LRDP could damage or destroy recorded resources that are determined to be significant upon testing (see Table 4.4-1) or unrecorded resources that are determined to be significant (Cul-1).	S	***Cul-1A*** During preparation of the Initial Study for future projects that implement the 2007 LRDP and are located on sites containing recorded archaeological resources, UCI shall retain a qualified archaeologist to define and survey the area of potential effects (APE) on the project site. The APE shall be based on the extent of ground disturbance and site modification anticipated for the project including an appropriate buffer where specific project boundaries have yet to be established. During the course of project planning, any recorded archaeological sites within the project APE shall be avoided to the extent feasible. If such sites cannot be avoided through project modifications or redesign, then the archeologist shall evaluate all archaeological resources observed within the project APE for significance in accordance with CEQA Guidelines Section 15064.5(c). This evaluation shall also determine the extent of the archaeological resource, if not already established. If an archaeological resource within the project APE is determined to be significant, then mitigation measure Cul-1B shall be implemented. ***Cul-1B*** Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP and would impact a significant archaeological resource as determined by mitigation measure Cul-1A, a qualified archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: i. Perform appropriate technical analyses; ii. File any resulting reports with the South Coastal Information Center; and iii. Provide the recovered materials to an appropriate repository for curation. ***Cul-1C*** Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally-affiliated Native American) to monitor these activities. In the event of an unexpected archeological discovery during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			archaeological resources, in accordance with the procedures below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If the archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: i. Perform appropriate technical analyses; ii. File any resulting reports with the South Coastal Information Center; and iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.	
Historical Resources	Anticipated and potential development and redevelopment projects under the 2007 LRDP could demolish, relocate, or significantly change historic structures, which could result in changes to the historic significance of the structure (Cul-2).	S	***Cul-2A*** During preparation of the Initial Study for future projects that implement the 2007 LRDP, and are located on sites containing facilities that are 50 years of age or older, and are potential historic resources, a qualified professional shall define and survey the Area of Potential Effect (APE) on the project site. The APE shall be based on the extent of ground disturbance and site modification anticipated for the project. If historic resources are present within the project APE, then mitigation measure Cul-2B shall be implemented. ***Cul-2B*** Before altering or otherwise affecting historic resources within the project APE as determined by mitigation measure Cul-2A, they shall be evaluated for significance by the architectural historian in accordance with CEQA Guidelines Section 15064.5. The evaluation process shall include the development of appropriate historical background research as context for the assessment of the significance of the historic resources in the history of the UC system, UCI, and the region. The historic resources shall be recorded on a California Department of Parks and Recreation DPR 523 form or equivalent documentation. If the historic resources are determined to be significant, then mitigation measure Cul-2C shall be implemented. ***Cul-2C*** For historic resources determined to be significant as determined by mitigation measure Cul-2B, UCI shall consider measures that would enable the project to avoid direct or indirect impacts to the significant historic resources. For significant historic resources in which avoidance or reuse on-site is not feasible, mitigation measure Cul-2D shall be implemented.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			Cul-2D For significant historic resources in which avoidance or reuse on-site is not feasible as determined by mitigation measure Cul-2C, one of the following options shall be implemented: i. Remodeling, renovation, or other alterations to significant historic resources within the project APE shall be conducted in compliance with the "Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings." ii. Prior to relocation or demolition of significant historic resources within the project APE, a qualified professional shall document the resources, including any buildings, associated landscaping and setting. Documentation shall include still and video photographs (to be provided on a CD-ROM) and a written record in accordance with the standards of the Historic American Building Survey or Historic American Engineering Record, including accurate scaled mapping, architectural descriptions, and scaled architectural plans, if available. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site-specific and comparative archival research and oral history collection as appropriate. A copy of the record shall be deposited with the UCI archives. iii. As appropriate, include features in the design of the new project that reuse or represent features or the historic building or provide interpretative information on the historic resource.	
Human Remains	Although unlikely, construction activities under the 2007 LRDP could disturb human remains.	LS	No mitigation is required.	N/A
Paleontological Resources	Construction and earthwork activities under the 2007 LRDP could significantly affect paleontological resources (Cul-4).	S	***Cul-4A*** Prior to grading or excavation for future projects that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontologist to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			Cul-4B If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented. ***Cul-4C*** For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: i. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI); ii. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and iii. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.	
4.5 Geology and Soils				
Exposure to Seismic-Related Hazards	While the UCI campus contains the potential for seismic related hazards such as fault ruptures, ground shaking, ground failure and liquefaction, and seismically induced landslides, compliance with the CBC and the UC Seismic Safety Policy and enforcement of the Restricted Use Zone (RUZ) reduces the exposure of people and structures to adverse effects involving seismic related hazards.	LS	No mitigation is required.	N/A
Soil Erosion or Topsoil Loss	Construction activities associated with the 2007 LRDP could result in increased erosion due to vegetation removal and earth-disturbing activities; however, compliance with dust abatement measures and NPDES requires would minimize erosion and topsoil loss.	LS	No mitigation is required.	N/A
Soil Instability	Unstable slopes and soils exist in undeveloped areas of the South Campus; however, recommendations provided in a geotechnical investigation would be implemented to remove such soils and slopes and reduce hazards to people or structures associated with unstable slopes and soils.	LS	No mitigation is required.	N/A
Expansive Soils	While expansive soils are prevalent on campus, compliance with the CBC would reduce the potential for substantial risk to life or property due to construction of structures on expansive soils.	LS	No mitigation is required.	N/A
4.6 Hazards and Hazardous Materials				
Transport, Use, and Disposal of Hazardous Materials	The 2007 LRDP would result in increased transport, use, and disposal of hazardous materials that could pose a hazard to the public and environment but these activities are comprehensively managed by UCI pursuant to state and federal law.	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
Accidental Releases	Implementation of the 2007 LRDP could result in increased transport, use, and disposal of hazardous materials, which could increase the chance for accidents to occur; however, safeguards mandated by federal and State laws and regulations would minimize the risk of accidents. Further, procedures are in place to handle any future accidents that may occur.	LS	No mitigation is required.	N/A
Hazards to Nearby Schools	A small increase in the use and disposal of hazardous materials and waste would be located within one-quarter mile of an existing school; however, compliance with hazardous materials regulations would minimize risk to nearby educational facilities.	LS	No mitigation is required. Compliance with applicable laws and regulations would occur.	N/A
Listed Hazardous Materials Sites	Development is proposed in the area of a potentially hazardous site; however, because this site will be fully rehabilitated by the end of 2007 and prior to any construction, this site is of low environmental concern and is not expected to create a significant hazard to the public or environment.	LS	No mitigation is required.	N/A
Hazards from Nearby Airports	Because of the location of the campus from John Wayne Airport (the nearest airport) and the lack of accidents in the vicinity of the campus, safety hazards to people residing or working on the UCI campus due to aircraft from John Wayne Airport are not likely to occur.	LS	No mitigation is required.	N/A
Emergency Response And Evacuation Plans	Temporary road closures due to construction associated with implementation of the 2007 LRDP, along with operational obstructions (e.g., non-synchronized traffic signals, locked gates), may significantly interfere with evacuation routes (Haz-6).	S	***Haz-6A*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP and that would involve a lane or roadway closure, the construction contractor and/or UCI Design and Construction Services shall notify the UCI Fire Marshal. If determined necessary by the UCI Fire Marshal, local emergency services shall be notified of the lane or roadway closure by the Fire Marshal. ***Haz-6B*** All traffic signals installed on emergency access ways shall include the installation of optical preemption devices for emergency services. ***Haz-6C*** All electronically-operated gates installed within the UCI Campus shall include emergency opening devices, as approved by the Orange County Fire Authority.	LS
Wildland Fires	Exposure of people or structures to wildland fires would be limited because fuel modification plans would be prepared for areas adjacent to areas prone to wildfire, which would be approved by the OCFA.	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.7 Hydrology and Water Quality				
Drainage and Hydrology	Implementation of 2007 LRDP projects that would disturb 1 acre or more of land, and all future development occurring in the SJMF watershed, would have the potential to substantially alter drainage patterns and hydrology which could significantly increase runoff volumes resulting in flooding, excedance of the existing storm water drainage system capacity, and erosion and siltation at downstream water bodies (Hyd-1).	S	***Hyd-1A*** As early as possible in the planning process of future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or greater, and for all development projects occurring on the North Campus in the watershed of the San Joaquin Freshwater Marsh, a qualified engineer shall complete a drainage study. Design features and other recommendations from the drainage study shall be incorporated into project development plans and construction documents. Design features shall be consistent with UCI's Storm Water Management Program, shall be operational at the time of project occupancy, and shall be maintained by UCI. At a minimum, all drainage studies required by this mitigation measure shall include, but not be limited to, the following design features: i. Site design that controls runoff discharge volumes and durations shall be utilized, where applicable and feasible, to maintain or reduce the peak runoff for the 10-year, 6-hour storm event in the post-development condition compared to the pre-development condition, or as defined by current water quality regulatory requirements. ii. Measures that control runoff discharge volumes and durations shall be utilized, where applicable and feasible, on manufactured slopes and newly-graded drainage channels, such as energy dissipaters, revegetation (e.g., hydroseeding and/or plantings), and slope/channel stabilizers.	LS
Water Quality	Implementation of the 2007 LRDP would have the potential to generate storm water runoff pollutants during construction and post-construction activities that could significantly impact downstream water quality, if not properly controlled (Hyd-2).	S	***Hyd-2A*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve an erosion control plan for project construction. The plan shall include, but not be limited to, the following applicable measures to protect downstream areas from sediment and other pollutants during site grading and construction: i. Proper storage, use, and disposal of construction materials. ii. Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter. iii. Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			iv. Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures. v. Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures. vi. Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures). vii. Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping. viii. Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures. ***Hyd-2B*** Prior to project design approval for future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or more, the UCI shall ensure that the projects include the design features listed below, or their equivalent, in addition to those listed in mitigation measure Hyd-1A. Equivalent design features may be applied consistent with applicable MS4 permits (UCI's Storm Water Management Plan) at that time. All applicable design features shall be incorporated into project development plans and construction documents; shall be operational at the time of project occupancy; and shall be maintained by UCI. i. All new storm drain inlets and catch basins within the project site shall be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCI standards. ii. Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment. iii. Permanent trash container areas shall be enclosed to prevent off-site transport of trash, or drainage from open trash container areas shall be directed to the sanitary sewer system. iv. At least one treatment control is required for new parking areas or structures, or for any other new uses identified by UCI as having the potential to generate substantial pollutants. Treatment controls include, but are not limited to, detention basins, infiltration basins, wet ponds or wetlands, bio-swales, filtration devices/inserts at storm drain inlets, hydrodynamic separator	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			systems, increased use of street sweepers, pervious pavement, native California plants and vegetation to minimize water usage, and climate controlled irrigation systems to minimize overflow. Treatment controls shall incorporate volumetric or flow-based design standards to mitigate (infiltrate, filter, or treat) storm water runoff, as appropriate.	
Seiches, Tsunamis, and Mudflows	Implementation of the 2007 LRDP would not likely expose people to structures to seiches, tsunamis, or mudflows due to the topography of the campus and the location of the campus from landlocked bodies of water, the Pacific Ocean, and the surrounding foothills.	LS	No mitigation is required.	N/A
4.8 Land Use and Planning				
Applicable Land Use Plans, Policies, and Regulations	Implementation of the 2007 LRDP would not result in inconsistencies with City of Irvine and City of Newport Beach General Plans, the California Coastal Act, or the NCCP Implementation Agreement.	LS	No mitigation is required.	N/A
Incompatibilities with Adjacent Land Uses	The development of the North Campus with mixed-use land uses and the open space area of the SJFM Reserve may result in incompatibilities between residential, commercial, office, or retail uses and the habitat reserve area of the Marsh (Lan-2).	S	***Lan-2A*** As early as possible in the planning process for future projects that implement the 2007 LRDP and are located along the interface between the North Campus and the San Joaquin Freshwater Marsh (SJFM) Reserve, UCI shall enter into consultation with the Director of the University of California Natural Reserve System (UCNRS) to ensure that project planning and design includes features to avoid impacts to the SJFM Reserve from incompatible adjacent land uses, such as mixed use development. These planning and design features shall include, but are not limited to, the following: • Site planning that establishes building setbacks, circulation, open space and other uses along the development interface to limit impacts on teaching and research activities, and that reduces the need for fuel modification in the buffer zone. • Site planning that retains the integrity of the SJFM Reserve buffer zone including features that limit the need for construction activities and fuel modification within the buffer zone.	LS
4.9 Noise				
Permanent Increases in Ambient Noise	Implementation of the 2007 LRDP would expose persons within future Student Housing, located south of E. Peltason Drive and east of Bison Avenue, to significant direct traffic noise levels, and would expose persons within future Housing Reserve, located north of Bonita Canyon Road and west of Anteater Drive, to significant cumulative traffic noise levels (Noi-1A), and would expose persons to significant direct noise impacts from operation of new stationary noise sources, including a satellite utilities plant in the Health Sciences Complex, major HVAC systems, and parking structures (Noi-1B).	S	***Noi-1A*** Prior to project design approval for future projects that implement the 2007 LRDP and include noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), UCI shall ensure that the project design will adhere to the following state noise standards: 60 dBA CNEL (single-family campus housing); 65 dBA CNEL (multi-family campus housing, dormitories, lodging); and 70 dBA CNEL (classrooms, libraries, clinical facilities). Applicable project design features may include, but are not limited to, the following:	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			i. Specific window treatments, such as dual glazing, and mechanical ventilation when the 45 dBA CNEL limit within habitable rooms and the 50 dBA CNEL limit within classrooms can only be achieved with a closed window condition. ii. Setbacks; orientation of usable outdoor living spaces, such as balconies, patios, and common areas, away from roadways; and/or landscaped earthen berms, noise walls, or other solid barriers. ***Noi-1B*** As early as possible in the planning process of future projects that implement the 2007 LRDP and would include new or modified stationary noise sources such as utility plant facilities (constant noise source), major HVAC systems (constant noise source), and parking structures (constant and/or intermittent noise source), UCI shall ensure they are designed in a manner that would minimize the exposure of noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities) to noise levels that exceed the following state noise standards: 60 dBA CNEL (single-family campus housing); 65 dBA CNEL (multi-family campus housing, dormitories, lodging); and 70 dBA CNEL (classrooms, libraries, clinical facilities). If the affected noise-sensitive land uses are already exposed to noise levels in excess of these standards, then the new or modified stationary noise sources shall not increase the ambient noise level by more than 3 dBA. These criteria shall be achieved by: i. Implementing the following noise reduction measures into the design of the satellite utilities plant, as applicable: • Use low-speed fans, baffles, mufflers, or other mechanical system design features to reduce emitted noise; • Increase the distance from the noise source to sensitive receptors with setbacks; • Place equipment inside buildings or within solid enclosures; • Construct earthen berms, noise walls, or other solid barriers for noise attenuation; • Eliminate glass, louvers, openings, or vents in the exterior walls of the plant, particularly those facing noise-sensitive land uses. If openings are necessary, install acoustical louvers or baffles on project components at all exterior openings;	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			• Install silencers on the intake and exhaust system; • Place cooling towers as close to plant buildings as possible to utilize the buildings as noise barriers; and • Install integrated noise barriers on the sides of cooling towers. ii. Implementing the following noise reduction measures into the design of new major HVAC systems, as applicable: • Install acoustical shielding (parapet wall or near-field noise barrier) around all new equipment; and • Place equipment below grade in basement space. iii. Implementing the following noise reduction measures into the design of new parking structures: • Incorporate architectural design features that attenuate noise including solid panels at locations facing noise-sensitive land uses; and • Construct earthen berms, noise walls, or other solid barriers between noise-sensitive land uses and parking structures.	
Temporary Increases in Ambient Noise	Construction activities associated with implementation of the 2007 LRDP would result in substantial temporary increases in ambient noise levels affecting noise-sensitive land uses on campus (Noi-2A).	S	***Noi-2A*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve contractor specifications that include measures to reduce construction/ demolition noise to the maximum extent feasible. These measures shall include, but are not limited to, the following: i. Noise-generating construction activities occurring Monday through Friday shall be limited to the hours of 7:00 am to 7:00 pm, except during summer, winter, or spring break at which construction may occur at the times approved by UCI. ii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) off-campus land uses shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction occurring on Sundays or holidays. iii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-campus residential housing shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			iv. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time. v. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise. vi. Stationary construction noise sources such as generators, pumps or compressors shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible. vii. Laydown and construction vehicle staging areas shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible. viii. All neighboring land uses that would be subject to construction noise shall be informed at least two weeks prior to the start of each construction project, except in an emergency situation. vii. Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 600 feet of a residence or an academic building shall not be scheduled during any finals week of classes. A finals schedule shall be provided to the construction contractor.	
Exposure to Aircraft Noise	Implementation of the 2007 LRDP would not expose new noise-sensitive land uses on campus to excessive noise levels resulting from aircraft.	None	No mitigation is required.	N/A
Excessive Groundborne Vibration or Noise	Construction activities associated with implementation of the 2007 LRDP could result in the exposure of persons and vibration-sensitive instruments, operations and buildings on campus to, or generation of, excessive ground-borne vibration or ground-borne noise levels (Noi-4).	S	***Noi-4A*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP and are located within 100 feet of vibration-sensitive uses (i.e., buildings containing vibration-sensitive instruments or operations, or buildings that are considered vibration sensitive due to their age, construction type and/or fragile condition), UCI shall approve a construction vibration mitigation program as part of the contractor specifications that includes measures to reduce vibration resulting from construction activities to the maximum extent practicable. The program shall include measures to establish baseline vibration conditions, vibration monitoring, work methods or equipment necessary to reduce vibration, and a pre-construction notification process for impacted building occupants (six-month and one-month interval prior to construction). If pile driving is proposed, building occupants within 600 feet of the pile-driving site shall be notified of construction at six-month and one-month intervals prior to the start of construction.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.10 Population and Housing				
Direct Inducement of Substantial Population Growth	Because the growth in UCI's population would account for a small proportion of the planned growth of the region and a small proportion of the construction of new housing, implementation of the 2007 LRDP would not directly induce substantial population growth which would adversely affect the physical environment.	LS	No mitigation is required.	N/A
Indirect Inducement of Substantial Population Growth	Implementation of the 2007 LRDP is not expected to indirectly induce population growth by expanding infrastructure, removing an obstacle to growth, or encouraging the growth of industry.	LS	No mitigation is required.	N/A
Displacement of Housing	Implementation of the 2007 LRDP would result in in-fill development within the UCI-owned property, an increase in student and faculty and staff housing, and no displacement of housing.	LS	No mitigation is required.	N/A
Displacement of People	Implementation of the 2007 LRDP would increase the campus population and would not displace people which would require the construction of additional housing elsewhere.	LS	No mitigation is required.	N/A
4.11 Public Services				
Fire Protection	Implementation of the 2007 LRDP would not impact the service capacity of Fire Station #4, but would increase demand at Fire Station #28, along with other regional growth in the vicinity, to a level that would require new facilities or substantial alterations to existing facilities; however, this is considered a cumulative impact.	LS	No mitigation is required.	N/A
Police Protection	As campus population increases as a result of implementation of the 2007 LRDP, UCI would increase the number of officers within the UCI Police Department, which may require the construction of additional police service facilities, which would undergo environmental review.	LS	No mitigation is required.	N/A
Public Schools	The increase of school-age children living on-campus as a result of implementation of the 2007 LRDP would not require the construction of additional schools because the increase attributable to the 2007 LRDP would be a small proportion to the number of children enrolled in the Irvine Unified School District.	LS	No mitigation is required.	N/A
4.12 Recreation				
Deterioration of Parks and Recreational Facilities	While implementation of the 2007 LRDP would increase the campus population and the use of on-campus recreational facilities, good management and active maintenance would minimize deterioration of facilities. Significant increase in use of off-campus facilities is not expected.	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
Construction of New Recreational Facilities	Implementation of the 2007 LRDP would include construction and expansion of recreational facilities that may have an adverse physical effect on the environment (Rec-2).	S	Implementation of applicable mitigation measures in other sections of this EIR including Aes-1A, Aes-2A, Aes-3B, Air-2A, Air-2B, Bio-1A, Bio-2A, Bio-2B, Bio-3A, Bio-3B, Bio-3C, Bio-3D, Bio-4A, Cul-1A, Cul-1B, Cul-2A, Cul-4A, Haz-6A, Hyd-1A, Hyd-2A, Hyd-2B, Lan-2A, Noi-2A, and Noi-4A would reduce impacts related to construction of new recreational facilities to a level below significance.	LS
4.13 Transportation, Traffic, and Parking				
Increases in Traffic	Implementation of the 2007 LRDP would result in significant direct traffic impacts at two off-campus intersections in Year 2025 and at two off-campus intersections Post-2025 (Tra-1A); and significant cumulative impacts at 11 off-campus intersections in Year 2025, and at one off-campus arterial roadway and 10 off-campus intersections Post-2025 (Tra-1B).	S	***Tra-1A*** To reduce on- and off-campus vehicle trips and resulting impacts, UCI will continue to implement a range of Transportation Demand Management (TDM) strategies. Program elements will include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking polices that reduce demand, and implement other administrative mechanisms that reduce vehicle trips to and from the campus. UCI shall monitor the performance of TDM programs through annual surveys. ***Tra-1B*** UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus. ***Tra-1C*** To enhance transit systems serving the campus and local community, UCI will work cooperatively with the City of Irvine, City of Newport Beach, OCTA and other local agencies to coordinate service and routes of the UCI Shuttle with existing and proposed shuttle and transit programs including the proposed Jamboree/IBC Shuttle, proposed Orange County Great Park Shuttle, Irvine Spectrum Shuttle, and other community transit programs. ***Tra-1D*** UCI will monitor campus trip generation and distribution and the performance of UCITP intersections in relationship to enrollment growth. Monitoring will be conducted in consultation with the City of Irvine and the City of Newport Beach, and will occur at each 3,000-student increase in enrollment (measured as General Campus three-term average headcount), above the 2007-08 General Campus enrollment level. If UCI monitoring determines that LRDP traffic results in significant traffic impacts at UCITP intersections, UCI will implement measures to reduce vehicle trips contributing to the impact or provide "fair share" funding for improvements at the impacted intersections as described in Mitigation Measures Tra-1E and Tra-1F. UCI's share of funding will be determined by the percentage of UCI traffic volumes compared to the total traffic volumes at the impacted intersections.	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			Tra-1E UCI will collect UCITP traffic fees from "for-profit" development projects on campus or other campus development as determined by the University. Fees will be provided to the City of Irvine, City of Newport Beach, or other public agencies to fund UCI's share of UCITP improvements when the improvements are implemented, as provided in mitigation measure Tra-1D. ***Tra-1F*** If the City of Irvine or City of Newport Beach proceeds with traffic improvements for UCITP intersections following UCI determination that LRDP traffic is causing a significant impact, and UCITP fees collected to date are insufficient to fund UCI's fair share, UCI shall identify and obtain funding for the fair share of identified improvements from an alternative source. ***Tra-1G*** UCITP fees established for future "for-profit" development on UCI's North Campus shall be commensurate with the traffic fees established in the City of Irvine's IBC Transportation Fee program. ***Tra-1H*** UCI will assess a San Joaquin Hills Transportation Corridor fee to future "for-profit" campus development projects in accordance with the development fee program established by the Joint Powers Agreement entered into by the City of Irvine, the County of Orange, and neighbor cities to help pay for the San Joaquin Hills Transportation Corridor. Future "for-profit" campus development shall be required to pay such fees prior to construction. UCI's obligation to pay its share of the costs of the San Joaquin Hills Transportation Corridor shall be satisfied upon the forwarding of these fees to the Transportation Corridor Agencies or other agency designated to collect such fees. ***Tra-1I*** UCI shall review individual projects proposed under the 2007 LRDP for consistency with UC Sustainable Transportation Policy and UCI Transportation Demand Management goals to ensure that bicycle and pedestrian improvements, transit stops, and other project features that promote alternative transportation are incorporated to the extent feasible. ***Tra-1J*** If a campus construction project or a specific campus event requires an on-campus lane or roadway closure, or could otherwise substantially interfere with campus traffic circulation, the contractor or other responsible party will provide a traffic control plan for review and approval by UCI. The traffic control plan shall ensure that adequate emergency access and egress is maintained and that traffic is allowed to move efficiently and safely in and around	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			the campus. The traffic control plan may include measures such as signage, detours, traffic control staff, a temporary traffic signal, or other appropriate traffic controls. If the interference would occur on a public street, UCI shall apply for all applicable permits from the appropriate jurisdiction.	
Parking Capacity	With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, the 2007 LRDP would not impact the on-campus parking supply.	LS	No additional mitigation is required.	N/A
Alternative Transportation Plans, Policies, and Programs	With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, the 2007 LRDP is not likely to conflict with adopted policies, plans, or programs supporting alternative transportation.	LS	No additional mitigation is required.	N/A
4.14 Utilities, Service Systems, and Energy				
Wastewater Treatment	The planned expansion of the Michelson Water Reclamation Plant (MWRP), which would undergo additional environmental review and continue to abide by Industrial User Discharge Permit regulations, would have sufficient capacity to accommodate increases in wastewater generation as a result of implementation of the 2007 LRDP.	LS	No mitigation is required.	N/A
New Water or Wastewater Facilities	Because implementation of the 2007 LRDP would increase the demand for water and waste water, implementation of the 2007 LRDP would require the construction of additional water and wastewater facilities, which could impact the physical environment (Utl-2).	S	Implementation of applicable mitigation measures in other sections of this EIR would reduce significant impacts associated with the construction of new facilities, including utility improvements, to below a level of significance. These measures include Aes-1A, Aes-2A, Aes-3B, Air-2A, Air-2B, Bio-1A, Bio-2A, Bio-2B, Bio-3A, Bio-3B, Bio-3C, Bio-3D, Bio-4A, Cul-1A, Cul-1B, Cul-2A, Cul-4A, Haz-6A, Hyd-1A, Hyd-2A, Hyd-2B, Lan-2A, Noi-2A, and Noi-4A.	LS
Impacts from New Storm Water Facilities	Because implementation of the 2007 LRDP would increase the amount of impervious surface, implementation of the 2007 LRDP would require the construction of additional storm water facilities, which could impact the physical environment (Utl-3).	S	Implementation of applicable mitigation measures in other sections of this EIR would reduce significant impacts associated with the construction of new facilities, including utility improvements, to below a level of significance. These measures include Aes-1A, Aes-2A, Aes-3B, Air-2A, Air-2B, Bio-1A, Bio-2A, Bio-2B, Bio-3A, Bio-3B, Bio-3C, Bio-3D, Bio-4A, Cul-1A, Cul-1B, Cul-2A, Cul-4A, Haz-6A, Hyd-1A, Hyd-2A, Hyd-2B, Lan-2A, Noi-2A, and Noi-4A.	LS
Water Supply Availability	Projected water demands as a result of implementation of the 2007 LRDP are consistent with Irvine Ranch Water District's recently adopted Urban Water Management Plan and would not change the Plan's conclusions with respect to water supply reliability.	LS	No mitigation is required.	N/A
Landfill Capacity	Because UCI would continue to administer its recycling and waste diversion program and because an expansion of the Frank R. Bowman Landfill is likely, the landfill would have sufficient permitted capacity to accommodate the increase in solid waste generation as a result of implementation of the 2007 LRDP.	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
Applicable Solid Waste Regulations	Because UCI would continue to adhere to the University of California Policy on Sustainable Practices which requires waste diversion and recycling on all UC Campuses, implementation of the 2007 LRDP would comply with applicable laws and regulation related to solid waste.	LS	No mitigation is required.	N/A
Energy Consumption	Compliance with UC's Policy on Sustainable Practices would increase energy efficiency and reduce inefficient consumption of energy; however, the development of additional electricity and natural gas facilities, which would undergo additional environmental review, would result in impacts to the physical environment (Utl-7).	S	Implementation of applicable mitigation measures in other sections of this EIR would reduce significant impacts associated with the construction of new facilities to below a level of significance. These measures include Aes-1A, Aes-2A, Aes-3B, Air-2A, Air-2B, Bio-1A, Bio-2A, Bio-2B, Bio-3A, Bio-3B, Bio-3C, Bio-3D, Bio-4A, Cul-1A, Cul-1B, Cul-2A, Cul-4A, Haz-6A, Hyd-1A, Hyd-2A, Hyd-2B, Lan-2A, Noi-2A, and Noi-4A.	LS

SU = Significant, unavoidable; S = Significant; LS = Less than Significant;
* Cumulative impacts and mitigation measure are summarized in Table 2-2.

Table 2-2. Cumulative Impacts and Mitigation Measures

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
4.1 Aesthetics					
Scenic Views and Visual Character: New development would not significantly alter the visual character because new development would be similar to existing development.	Vicinity of the UCI Campus. Specifically, from SR-73 to south of Bonita Canyon Drive to east of Culver Drive, along University Drive to east of Campus Drive to the intersection of Campus Drive and MacArthur Boulevard, along MacArthur Boulevard to SR-73.	Less than significant.	N/A	No mitigation is required.	N/A
Lighting and Glare: Because light pollution is not regulated within either the City of Irvine or the County of Orange, additional development may result in significant regional light pollution.	Vicinity of the UCI Campus. Specifically, from SR-73 to south of Bonita Canyon Drive to east of Culver Drive, along University Drive to east of Campus Drive to the intersection of Campus Drive and MacArthur Boulevard, along MacArthur Boulevard to SR-73.	Significant.	Not cumulatively considerable.	No mitigation is required.	N/A
4.2 Air Quality					
Consistency with Applicable Air Quality Plan: Because the 2007 LRDP would not conflict with the 2007 AQMP or the SIP, there is no analysis of cumulative impacts.	No project-level impact.	N/A	N/A	N/A	N/A
Construction and Operational Emissions: Air quality impacts from construction activities, area sources, new stationary sources and increased vehicular emissions that would exceed air quality standards for CO, VOCs, NO_x, PM_{10} and $PM_{2.5}$.	South Coast Air Basin	Significant.	Cumulatively considerable.	Implementation of mitigation measures Air-2A, Air-2B, and Air-2C.	Cumulatively considerable and unavoidable.
Sensitive receptors: Exposure of people to substantial carcinogenic, non-carcinogenic, and localized CO pollutant concentrations.	South Coast Air Basin	Significant (carcinogenic, non-carcinogenic pollutants); less than significant (CO "hot spots").	Cumulatively considerable for carcinogenic, non-carcinogenic pollutants; not cumulatively considerable for CO "hot spots".	Implementation of energy-saving projects and programs for carcinogenic, non-carcinogenic pollutants; no mitigation is required for CO "hot spots."	Not cumulatively considerable.

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
Objectionable Odors: Because the 2007 LRDP would not generate objectionable odors, there is no analysis of cumulative impacts.	No project-level impact.	N/A	N/A	N/A	N/A
4.3 Biological Resources					
Candidate, Sensitive, or Special Status Plant Species: Regional loss of sensitive plant species.	Subregional NCCP Reserve System for the sensitive plant species "covered" under the NCCP/HCP for the County of Orange Central and Coastal sub-region and the Orange County region for the sensitive plant species that are not covered under the NCCP	Significant.	Not cumulatively considerable with implementation of mitigation measure Bio-1A.	No mitigation is required.	N/A
Candidate, Sensitive, or Special Status Animal Species: Regional loss of sensitive animal species.	Subregional NCCP Reserve System for the sensitive plant species "covered" under the NCCP/HCP for the County of Orange Central and Coastal sub-region and the Orange County region for the sensitive plant species that are not covered under the NCCP	Significant.	Not cumulatively considerable with implementation of mitigation measures Bio-1A, Bio-2A, and Bio-2B.	No mitigation is required.	N/A
Riparian Habitat and Other Sensitive Natural Communities: Regional loss of sensitive habitats.	Orange County region	Significant.	Not cumulatively considerable with implementation of mitigation measures Bio-1A, Bio-3A, Bio-3B, Bio-3C, and Bio-3D.	No mitigation is required.	N/A
Wetlands: Regional loss of wetlands.	Orange County region	Significant.	Not cumulatively considerable with implementation of mitigation measure Bio-4A.	No mitigation is required.	N/A
Wildlife Movement Corridors: Because the project would not impact wildlife corridors, there is no analysis of the cumulative impact.	No project-level impact.	N/A	N/A	N/A	N/A
4.4 Cultural Resources					
Archaeological Resources: Regional loss of archeological resources.	Orange County region	Significant.	Not cumulatively considerable with implementation of mitigation measures Cul-1A through Cul-1C.	No mitigation is required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
Historic Resources: Regional loss of historical resources.	Orange County region	Significant.	Not cumulatively considerable with implementation of mitigation measures Cul-2A through Cul-2D.	No mitigation is required.	N/A
Human Remains: Regional disturbance of human remains.	Orange County region	Significant.	Not cumulatively considerable with implementation of mitigation measure Cul-3A.	No mitigation is required.	N/A
Paleontological Resources: Regional loss of paleontological resources.	Orange County region	Less than significant.	N/A	No mitigation is required.	N/A
4.5 Geology and Soils					
Seismic Related Hazards: Cumulative development in the region would expose a greater number of people and structures to seismic-related hazards.	Limited to the immediate area of the geologic constraint with the exception of some geologic impacts that are regional, such as regional earthquake risk.	Significant.	Not cumulatively considerable.	No mitigation is required.	N/A
Soil Erosion and Topsoil Loss: Cumulative development at UCI and throughout the City of Irvine could result in excessive erosions; however, development projects are subject to numerous regulations to prevent soil erosion.	San Diego Creek and Bonita Creek subwatersheds	Less than significant	N/A	No mitigation is required.	N/A
Soil and Slope Instability: Development occurring on unstable soils and slopes requires specific site preparation measures be applied to reduce hazards associated with unstable soils and slopes.	Limited to the immediate area of the geologic constraint with the exception of some geologic impacts that are regional, such as regional earthquake risk.	Less than significant	N/A	No mitigation is required.	N/A
Expansive Soils: Development occurring on expansive soils require specific site preparation measures be applied to reduce hazards associated with expansive soils.	Limited to the immediate area of the geologic constraint with the exception of some geologic impacts that are regional, such as regional earthquake risk.	Less than significant	N/A	No mitigation is required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
4.6 Hazards and Hazardous Materials					
Transport, Use, and Disposal of Hazardous Materials: Increased regional development that increases the amount of hazardous materials transported, used, and disposed would be subject to laws and regulations.	Ranges from the immediate surrounding area to the City of Irvine region	Less than significant.	N/A	No mitigation is required.	N/A
Accidental Releases: Increased regional development may increase the amount of hazardous materials transported in the region; however, laws and regulations would reduce the potential for accidental release.	Ranges from the immediate surrounding area to the City of Irvine region	Less than significant.	N/A	No mitigation is required.	N/A
Hazards to Nearby Schools: Laws and regulations would reduce or eliminate potential impacts to nearby schools associated with hazardous materials.	City of Irvine region	Less than significant.	N/A	No mitigation is required.	N/A
Listed Hazardous Materials Sites: Future development would comply with laws and regulations regarding hazardous materials sites.	City of Irvine region	Less than significant.	N/A	No mitigation is required.	N/A
Hazards from nearby airports: Future developments would be reviewed and regulated through the Land Use Plan for John Wayne Airport and the Airport Land Use Commission.	Limited to the immediate area dependent on location of airports	Less than significant.	N/A	No mitigation is required.	N/A
Emergency Response and Evacuation Plans: Future developments would undergo CEQA review and be required to implement measures to mitigate impacts.	City of Irvine region	Less than significant.	N/A	No mitigation is required.	N/A
Wildland Fires: Increase development in fire prone areas would subject additional structures And people to risks associated with wildland fires.	Orange County region	Significant.	Not cumulatively considerable.	No mitigation is required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
4.7 Hydrology and Water Quality					
Drainage and Hydrology: Increased development within the San Diego Creek Watershed would result in an increase of impervious surfaces and a potential increase of flooding and erosions.	San Diego Creek Watershed	Significant.	Not cumulatively considerable with implementation of mitigation measure Hyd-1A.	No mitigation is required.	N/A
Water Quality: Increased development within the San Diego Creek Watershed would result in increases in pollutant sources that could adversely affect receiving waters.	San Diego Creek Watershed	Significant.	Not cumulatively considerable with implementation of mitigation measure Hyd-2A and 2B.	No mitigation is required.	N/A
Seiches, Tsunamis, and Mudflows: These events are not likely to occur in the vicinity of the UCI campus and increased development in this area would not increase the likelihood of such events.	UCI Campus vicinity	Less than significant	N/A	No mitigation is required.	N/A
4.8 Land Use and Planning					
Applicable Land Use Plans, Policies, and Regulations: Future development project would be evaluated for consistency with applicable plans and policies; however, some future development projects may not be consistent.	City of Irvine General Plan and City of Newport Beach General Plan	Less than significant.	N/A	No mitigation is required.	N/A
Incompatibilities with Adjacent Land Uses: Development of mixed, urban, and industrial uses on the North Campus may be incompatible with the SJFM Reserve.	Vicinity of UCI Campus	Significant.	Not cumulatively considerable with implementation of mitigation measure Lan-2A.	No mitigation is required.	N/A
4.9 Noise					
Roadway Noise: Permanent traffic noise impacts along on- and off-campus roads due to increased traffic volumes.	UCI, adjacent uses, and affected roadways.	Significant.	Not cumulatively considerable.	No mitigation is required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
Operational Noise: Permanent noise impacts at noise-sensitive land uses on and adjacent to the campus from new stationary noise sources in both locations.	Vicinity of UCI Campus	Less than significant.	Not cumulatively considerable.	No mitigation is required.	N/A
Temporary Noise: Temporary noise impacts at noise-sensitive land uses on and adjacent to the campus from construction activities in both locations, including the possible increase of outdoor events at UCI.	Vicinity of UCI Campus	Less than significant.	Not cumulatively considerable.	No mitigation is required.	N/A
Airport Noise: Because noise-sensitive land uses on campus would not be affected by airport noise, there is no analysis of cumulative impacts.	No project-level impact.	N/A	N/A	N/A	N/A
Ground-Borne Vibration: Temporary ground-borne vibration impacts at vibration-sensitive land uses on and adjacent to the campus from construction activities in both locations.	Vicinity of UCI Campus	Less than significant.	Not cumulatively considerable.	No mitigation is required.	N/A
4.10 Population and Housing					
Direct Inducement of Substantial Population Growth: The population in Orange County is forecasted to increase by approximately 9.5 percent.	Orange County region	Significant.	Not cumulatively considerable.	No mitigation required.	N/A
Indirect Inducement of Substantial Population Growth: Much of the Orange County region is developed; therefore, it is unlikely that the future development would indirectly induce population growth.	Orange County region	Less than significant.	N/A	No mitigation required.	N/A
Displacement of Housing: Increases in infill and redevelopment projects may result in the displacement of existing housing.	Orange County region	Significant	Not cumulative considerable.	No mitigation required.	N/A
Displacement of People: Increase in infill and redevelopment projects may result in the displacement of people.	Orange County region	Significant	Not cumulatively considerable.	No mitigation required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
4.11 Public Services					
Fire Protection: Construction of new fire protection facilities would undergo environmental review to address impacts to the physical environment.	City of Irvine region including the UCI campus, Irvine Business Complex (IBC), and John Wayne Airport (JWA) area	Less than significant.	N/A	No mitigation required.	N/A
Police Protection: Construction of new police protection facilities would undergo environmental review to address impacts to the physical environment.	City of Irvine near the UCI campus	Less than significant.	N/A	No mitigation required.	N/A
Public Schools: Construction of new public schools would undergo environmental review to address impacts to the physical environment.	Irvine Unified School District	Less than significant.	N/A	No mitigation required.	N/A
4.12 Recreation					
Deterioration of Parks and Recreational Facilities: Future development would increase the amount of recreational facilities in the local area through in-lieu fees or through the donation of parkland.	City of Irvine	Less than significant.	N/A	No mitigation is required.	N/A
Construction of New Recreational Facilities: Future development of recreational facilities could result in significant unavoidable impacts.	City of Irvine	Less than significant.	N/A	No mitigation is required.	N/A
4.13 Transportation, Traffic, and Parking					
Traffic Increases: Regional decreases in traffic LOS.	LRDP traffic study area	Significant.	Not cumulatively considerable with implementation of mitigation measures Tra-1A through Tra-1J.	No mitigation is required.	N/A
Parking Capacity: Because the 2007 LRDP would not result in inadequate parking capacity in the surrounding vicinity, there is no analysis of cumulative impacts.	All available public parking areas in the developed communities surrounding UCI	Significant.	Not cumulatively considerable.	No mitigation is required.	N/A

Issue	Geographic Scope of Cumulative Impact Analysis	Significance of Cumulative Impact	2007 LRDP Contribution	Mitigation Measures	2007 LRDP Significance Considering Mitigation
Alternative Transportation Programs: Because the 2007 LRDP would not result in regional conflicts with alternative transportation plans and policies, there is no analysis of cumulative impacts.	LRDP traffic study area	Significant.	Not cumulatively considerable	No mitigation is required.	N/A
4.14 Utilities, Service Systems, and Energy					
Wastewater Treatment: Proposed expansion of IRWD facilities would accommodate projected population growth.	Irvine Ranch Water District service area	Less than significant.	N/A	No mitigation is required	N/A
New Water or Wastewater Facilities: Installation and construction of additional facilities could result in adverse physical impacts to the environment.	Irvine Ranch Water District service area	Significant.	Not cumulatively considerable.	No mitigation is required	N/A
Impacts from New Storm Water Facilities: The construction of additional storm water facilities could result in adverse physical impacts to the environment.	UCI Campus and vicinity	Significant.	Not cumulatively considerable.	No mitigation is required	N/A
Water Supply Availability: IRWD's recently adopted Urban Water Management Plan is projected to accommodate future growth and water demand.	Irvine Ranch Water District service area	Less than significant.	N/A	No mitigation is required	N/A
Landfill Capacity: A recently approved project will extend the life of the FRB landfill to 2053.	Orange County region	Less than significant.	N/A	No mitigation is required	N/A
Applicable Solid Waste Regulations: Previous difficulties in complying with AB 939 are likely to continue as population levels increase in Orange County.	Orange County region	Significant.	Not cumulatively considerable.	No mitigation is required	N/A
Energy Consumption: Increasing population would increase the demand for energy and energy facilities which would result in adverse physical impacts to the environment.	Southern California Edison (SCE) service area.	Significant.	Not cumulatively considerable.	No mitigation is required	N/A

Table 2-3. Summary of Analysis for Alternatives to the 2007 LRDP

2007 LRDP			Alternatives to the 2007 LRDP					
Issue Areas with Potential for Significant Impacts under the 2007 LRDP or its Alternatives	**Without Mitigation**	**With Mitigation**	**No Project**	**Reduced Student Enrollment Capacity (32,000 students)**	**Reduced Student Enrollment Capacity (35,000 students)**	**Reduced Development Footprint**	**Increased Campus Housing**	**Increased TDM**
4.1 Aesthetics								
Visual Character and Quality (Aes-1)	S	LS	▼	▼	▼	▲	▲	—
Lighting and Glare (Aes-2)	S	LS	▼	▼	▼	▲	▲	—
4.2 Air Quality								
Consistency with Applicable Air Quality Standards (Air-2)	S	SU						
Construction related impacts			▼	▼	▼	—	▲	—
Operational and vehicle related impacts			▼	▼	▼	—	▼	▼
Cumulative impacts from CO, NO_x, VOCs, PM_{10}, and $PM_{2.5}$ emissions	S	SU	▼	▼	▼	—	—	▼
4.3 Biological Resources								
Sensitive and Special Status Plant Species (Bio-1)	S	LS	▼	—	—	▼	—	—
Sensitive and Special Status Animal Species (Bio-2)	S	LS	▼	—	—	▼	—	—
Riparian Habitat and Other Sensitive Natural Communities (Bio-3)	S	LS	▼	—	—	▼	—	—
Wetlands (Bio-4)	S	LS	▼	—	—	▼	—	—
4.4 Cultural Resources								
Archeological Resources (Cul-1)	S	LS	▼	—	—	▼	—	—
Historical Resources (Cul-2)	S	LS	▼	—	—	▼	—	—
Paleontological Resources (Cul-4)	S	LS	▼	—	—	▼	—	—
4.6 Hazardous Materials								
Construction-related Road Closure Affecting Emergency Response (Haz-6)	S	LS	▼	—	—	—	—	—
4.7 Hydrology and Water Quality								
Site Drainage and Hydrology (Hyd-1)	S	LS	▼	—	—	▼	—	—
Water Quality (Hyd-2)	S	LS	▼	▼	▼	▼	—	—
4.8 Land Use								
Applicable Land Use Plans, Policies, and Regulations	LS*	-	—	—	—	▲	▲	—
Incompatibilities with Adjacent Land Uses (Lan-2)	S	LS	▼	—	—	▲	▲	—
4.9 Noise								
Exposure to Permanent Ambient Noise (Noi-1)	S	LS	▼	▼	▼	—	▼	▼
Temporary Increases in Ambient Noise (Noi-2)	S	LS	▼	—	—	—	—	—
Excessive Ground borne Vibration or Noise (Noi-4)	S	LS	▼	—	—	—	—	—
4.12 Recreation								
Deterioration of Parks and Recreational Facilities (Rec-1)	LS*	-	▼	▼	▼	—	▲	—
Construction of New Recreational Facilities (Rec-2)	S	LS	▼	—	—	—	—	—

Issue Areas with Potential for Significant Impacts under the 2007 LRDP or its Alternatives	2007 LRDP: Without Mitigation	2007 LRDP: With Mitigation	Alternatives to the 2007 LRDP: No Project	Reduced Student Enrollment Capacity (32,000 students)	Reduced Student Enrollment Capacity (35,000 students)	Reduced Development Footprint	Increased Campus Housing	Increased TDM
4.13 Transportation, Traffic, and Parking								
Increases in Traffic (Tra-1)	S	LS	▼	▼	▼	—	▼	▼
4.14 Utilities, Service Systems, and Energy								
Wastewater Treatment (Utl-1)	LS*	-	▼	▼	▼	—	▲	—
New Water or Wastewater Facilities (Utl-2)	S	LS	▼	▼	▼	—	▲	—
Impacts from New Storm Water Facilities (Utl-3)	S	LS	▼	—	—	▼	—	—
Water Supply Availability (Utl-4)	LS*	-	▼	▼	▼	—	▲	—
Landfill Capacity (Utl-5)	LS*	-	▼	▼	▼	—	▲	—
Energy Consumption (Utl-7)	S	LS	▼	▼	▼	—	▲	—

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project
— Alternative is likely to result in a similar impacts to issue when compared to proposed project
▼ Alternative is likely to result in less impacts to issue when compared to proposed project, however, impacts would still be significant before mitigation.
S Significant impact
LS Less than significant impact
SU Significant and unavoidable impact
* This less than significant impact was included in Table 6-1 because one or more of the alternatives would result in greater impacts to this issue area than the 2007 LRDP. The alternatives would result in similar or fewer impacts to the remaining less than significant impacts.