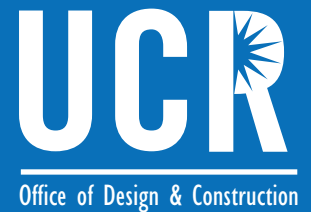


University of California Riverside
Glen Mor 2 Student Apartments Project
Final Environmental Impact Report
Volume 2 of 4 Draft Environmental Impact Report
SCH#2010081020



Prepared for:



Prepared by:



UNIVERSITY OF CALIFORNIA, RIVERSIDE GLEN MOR 2 STUDENT APARTMENTS PROJECT DRAFT ENVIRONMENTAL IMPACT REPORT

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Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
2005 LRDP	2005 Long-Range Development Plan
AB	Assembly Bill 32
ACBM	Asbestos-Containing Building Material
ADT	average daily trip
amsl	above mean sea level
AQMPs	air quality management plans
Basin	South Coast Air Basin
Basin Plan	Water Quality Control Plan
BAU	business as usual
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California EPA
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CH ₄	methane
Chambers	Chambers Group, Inc
CHASS	College of Humanities, Arts, and Social Sciences
CHHSLs	California Human Health Screening Levels
CHJ	C.H.J., Inc

CIMIS	California Irrigation Management Information System
City	City of Riverside
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CSOs	community service officers
dB	decibels
dba	A-weighted decibels
DWR	Department of Water Resources
EH&S	Environmental Health and Safety
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA's	Federal Highway Administration's
FIRMs	Flood Insurance Rate Maps
FLC	Flores Lund Consultants
FTA	Federal Transit Administration
gpm	Gallons per minute
HFCs	Hydrofluorocarbons
HUD	Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
IBC	International Building Code
KOP	Key Observation Points
Kunzman	Kunzman Associates
LBP	Lead-Based Paint
LEED	Leadership in Energy and Environmental Design
L _{eq}	Equivalent Sound Level
L _{max}	Maximum Sound Level

L_{\min}	Minimum Sound Level
LOS	level of service
LRDP EIR	LRDP Final Environmental Impact Report
LSTs	localized significance thresholds
LZ3	Lighting Zone 3
MATES III	Multiple Air Toxics Exposure Study III
MBTA	Migratory Bird Treaty Act
MM	mitigation measures
MMRP	mitigation monitoring and reporting program
MMT	million metric tons
MND	mitigated negative declaration
MPO	metropolitan planning organization
MSHCP	Multiple Species Habitat Conservation Plan
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO	nitric oxide
NO ₂	nitrogen dioxide
Noise Report	Noise Technical Report for the project
NOP	notice of preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
Pb	Lead
Perata	Senate Bill 1368
PFCs	Perfluorocarbons
Phase I ESA	Phase I Environmental Site Assessment and Limited Subsurface Investigation
PHMSA's	Pipeline and Hazardous Materials Safety Administration's
PM10	particulate matter

PM2.5	fine particulate matter
PP	programs and practices
ppm	parts per million
PRC	Public Resources Code
proposed project	Glen Mor 2 Student Apartments Project
PS	planning strategies
psi	pounds per square inch
PWA	Philip Williams & Associates
RCPG	Regional Comprehensive Plan and Guide
RFD	Riverside Fire Department
Riverside Flood Control	Riverside County Flood Control and Water Conservation District
ROG	reactive organic gases
RTA	Riverside Transit Agency
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF6	Sulfur hexafluoride
SKR-HCP	Stevens' Kangaroo Rat in Western Riverside County
SO ₂	sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasure Plan
SRA	Source Receptor Area
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TAPS	Transportation and Parking Services
TDS	total dissolved solids
The Regents	Board of Regents of the University of California
UC	University of California
UCPD	University of California Police Department
UCR	University of California, Riverside
UNET	University Neighborhood Enhancement Team

USACE	United States Army Corps of Engineers
V/C	vehicle to capacity
VdB	vibration decibels
Vdb	velocity in decibels
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WDRs	waste discharge requirements
WRC MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan

Executive Summary

ES.1 Introduction to Tiered EIR

This Environmental Impact Report (EIR) tiers from the programmatic EIR prepared for the University of California, Riverside (UCR), 2005 Long Range Development Plan (LRDP EIR). As defined in State CEQA Guidelines Section 15152, a Tiered Project EIR evaluates a specific project that is covered by a certified Program EIR. General information, cumulative analyses, etc., from the Program EIR are summarized or incorporated by reference so that the Tiered Project EIR can focus on project-specific issues. This tiering facilitates the environmental review of development proposals that are approved, constructed, or implemented at UCR. The LRDP EIR is intended to serve as the primary environmental document for all future entitlements associated with implementation of the LRDP. This project-level EIR discusses the impacts of the project and, for significant impacts, identifies mitigation measures that would reduce the impacts to less-than-significant levels. The EIR also presents alternatives to the project that should be considered when making the decision to approve the project.

ES.2 Project Description

The Glen Mor 2 Student Apartments project entails construction and long-term operation of a new apartment-style student housing complex on 21 acres in the northeastern portion of the UCR campus, providing a total of 810 student beds in 232 apartment-style units, which are intended to house graduate students and upper class undergraduates. The proposed building program would provide five residential buildings, a café and food/retail facility, a resident services office, a community building, and an executive retreat center. Associated improvements include a 597-space multi-level parking structure for campus residents, circulation improvements, and indoor and outdoor commons facilities. The project also entails restoration of a 0.4-mile stretch of the arroyo that runs through the northern part of the site. Construction is scheduled to begin in summer 2011, with units ready for occupancy in fall 2013.

ES.3 Project Objectives

UCR has identified the following objectives for the project:

- Progress toward the 2005 LRDP goal of providing on-campus housing for 50 percent of students by establishing a student housing community with approximately 800 beds for occupancy by fall 2013;
- Establish a clear network of non-vehicular connections, considering the site's location adjacent to an existing housing precinct and its relationship with the larger campus;
- Incorporate sustainable design strategies, with a target of LEED Gold certification;
- Protect and restore the on-site arroyo in furtherance of 2005 LRDP Planning Strategy Open Space 3;

- Provide proximate and secure parking consistent with 2005 LRDP ratios;
- Minimize potential adverse consequences to off-campus neighborhoods associated with development at the edge of the campus;
- Provide a convenient retail food market and café to serve residents of the housing precinct;
- Provide a controlled edge on the site's eastern boundary, minimizing interaction with the off-campus neighborhood on Valencia Hill Drive; and
- Take advantage of the "hill" with the creation of a small, special meeting place that includes a few hotel-style suites for visiting faculty, resident program presenters and housing guests.

ES.4 Areas of Known Controversy

Section 15123(b)(2) of the State CEQA Guidelines requires that an EIR summary identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public. This EIR addresses issues with respect to the project's environmental resources and impacts that are known or were raised by agencies or interested parties during the NOP public review period and two informational meetings held in April and May 2010. No areas of controversy have been raised by public agencies.

Known areas of controversy surrounding this project stem from the site's proximity to an off-campus residential neighborhood. Residents of the area east of the project site have expressed concern with the general compatibility of the project with the off-campus neighborhood, and more specifically with noise, traffic, and aesthetics impacts. Area residents have expressed concerns about noise from the parking structure and on-site activity, lights shining on the off-campus area, and project-related cars parking on off-campus streets. These nearby residents have also expressed interest in potential historic significance of the existing residential structure on the site and construction period impacts (noise, traffic and air quality).

ES.5 Alternatives

Chapter 4 of the EIR discusses and analyzes the effects of implementing a number of alternatives to the project that may be capable of attaining most of the basic project objectives while avoiding or substantially lessening the project's significant environmental impacts. These alternatives include the following:

- **Alternative 1: No-Build Alternative.** Under Alternative 1, none of the facilities proposed as part of the project would be constructed, and the project site would remain in its existing state. Parking Lot 14 would continue to operate with its existing capacity, and the on-site residence would remain on site, likely remaining vacant and unused. Unpaved pedestrian paths would continue to cross the site. None of the arroyo improvements would be implemented, including the hydrological improvements and the Arroyo enhancement program. All existing vegetation would remain on the project site.
- **Alternative 2: LRDP Alternative.** Under Alternative 2, the project would be developed as anticipated in the LRDP. The LRDP anticipated that the project site would be developed with facilities conforming to the *Family, Apartment Housing and Related Support* and *Athletics and*

Recreation land uses, with preservation of the on-site arroyo as *Naturalistic Open Space*. This alternatives analysis assumes that Alternative 2 would entail construction of student apartments, a parking structure for campus residents, and associated facilities similar to those proposed in the Glen Mor 2 project; that the proposed arroyo improvements would be implemented; and that athletics fields similar to those north of the site would be constructed in the southeastern portion of the site.

- **Alternative 3: Reduced Project Alternative.** Under Alternative 3, the site would be developed with facilities similar to those proposed in the Glen Mor 2 project, but the apartment buildings would be smaller in scale such that they would house half the number of students. The alternatives analysis assumes that the development footprint would be similar to that of Glen Mor 2, but that the residential buildings would be three levels rather than five levels, with the buildings reduced in height, accordingly. The arroyo improvements would be implemented as in Glen Mor 2.

ES.6 Impacts and Mitigation

Significant direct and cumulative environmental impacts are discussed and analyzed in detail in Chapter 3, “Environmental Analysis,” of this EIR. Technical reports were prepared to determine potential impacts on air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, public services, and transportation and traffic. Their findings have been incorporated into this document, and copies of these reports are provided as Appendices G–S of this EIR. Because this EIR tiers from the LRDP EIR, the impact analysis also includes consideration of the impact conclusions of the LRDP EIR, and assumes that various Planning Strategies, Programs and Practices, and Mitigation Measures set forth in the LRDP and the LRDP EIR are incorporated into the project. Appendix F presents a table listing the measures from the LRDP EIR Mitigation Monitoring and Reporting Program and discussing the applicability of each measure to the project. Appendix F provides a resource to ensure implementation of the applicable program-level provisions in detailed design and construction of the Glen Mor 2 project.

Project implementation would result in significant direct impacts on aesthetics, air quality, biological resources, cultural resources, land use, noise, and transportation and traffic. All of the impacts caused by the proposed project can be mitigated to reduce the impacts to less-than-significant levels except for certain direct impacts pertaining to air quality, noise, and transportation and traffic. Significant and unavoidable impacts have been identified for the following: (1) air quality related to construction-period equipment emissions and pollutant concentrations; (2) noise related to excessive groundborne vibration received by on-campus residences and construction-related noise received by on- and off-campus residences; and (3) transportation and traffic related to increased delays at the Watkins Drive/Big Springs Road intersection. Cumulative impacts on air quality associated with localized construct-related emissions and a cumulative temporary construction noise impact would also result. In addition, the project would contribute to cumulative impacts on traffic. Table ES-1 presents a summary of the impact analysis presented in Chapter 3 of this document, including the mitigation measures that will reduce or avoid the significant impacts.

Table ES-1. Summary of Environmental Effects and Mitigation Measures

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics				
Impact 3.1-1: Implementation of the proposed project would alter scenic focal views of the Carillon Tower from publicly accessible off-campus locations.	Significant		AES 1: Design Detailed Planting Plan to Maintain Existing View Corridor. Detailed planting plans for Reach 1 of the Arroyo enhancement program and the planting areas north of the executive retreat (Building J) and residential buildings D and H shall be designed to preserve the existing scenic focal views of the Carillon Tower and associated campus core from Valencia Hill Drive. Strategically placed trees that, at maturity, would not block the view corridor may be included. The Campus Landscape Architect shall be responsible for review and approval of the detailed plan prior to installation of the landscape treatments.	Less than significant
Impact 3.1-2: Implementation of the proposed project would alter scenic panoramic views of the Box Springs Mountains from publicly accessible on-campus locations.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.1-3: Implementation of the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.1-1 PS Campus and Community 1 PS Conservation 1 PS Open Space 3 PS Open Space 4	No project-level mitigation is required	Less than significant
Impact 3.1-4: Development of the Glen Mor 2 project would not create new sources of light or glare that would adversely affect daytime or nighttime views in the area.	Less than Significant with Implementation of LRDP EIR Measures	MM 4.1-3(c) PS Campus and Community 1 PS Open Space 4	No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Air Quality				
Impact 3.2-1: The project would not conflict with or obstruct implementation of the applicable air quality plan.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.2-2: Project construction activities would emit pollutants in an area with applicable standards.	Significant	MM 4.3-2 PP 4.3-2(a) PP 4.3-2(b)	<p>AQ 1: Construction-period engine/ equipment emissions.</p> <p>The UCR Office of Design and Construction will ensure that all construction contracts specify that all internal combustion engines/construction equipment operating on the project site will meet EPA-certified Tier 2 emissions standards or higher.</p> <p>AQ 2: Construction-period engine/equipment oxides catalyst.</p> <p>The UCR Office of Design and Construction will ensure that all construction contracts specify that all off-road equipment operating on the project site, as well as all on-road heavy-duty vehicles (including hauling and material delivery trucks) traveling to and from the site, will be fitted with an oxides catalyst.</p>	Less than significant
Impact 3.2-3: Project operation would emit pollutants in an area with applicable standards.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.2-4: The proposed project would result in a cumulatively considerable net increase in a criteria pollutant for which the project region is in nonattainment status.	Significant	MM 4.3-2 PP 4.3-2(a) PP 4.3-2(b)	<p>AQ 1: Construction-period engine/equipment emissions.</p> <p>(see above)</p> <p>AQ-2: Construction-period engine/equipment oxides catalyst.</p> <p>(see above)</p>	Significant and unavoidable

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.2-5: Project construction would expose sensitive receptors to substantial pollutant concentrations.	Significant	PP 4.3-2(b)	AQ 1: Construction-period engine/equipment emissions. (see above) AQ 2: Construction-period engine/equipment oxides catalyst. (see above)	Significant and unavoidable
Impact 3.2-6: Project operation would not expose sensitive receptors to substantial pollutant concentrations.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.2-7: Project operation would not expose sensitive receptors to toxic air contaminants.	Less than Significant		No project-level mitigation is required	Less than significant
Biological Resources				
Impact 3.3-1: Project construction would impact potentially suitable habitat for Parry's spineflower, long-spined spineflower, and San Bernardino aster.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.3-2: Project construction would impact suitable habitat for burrowing owl.	Significant	MM 4.4-1(a) MM 4.4-1(b)	BIO 1: Pre-Construction Surveys for burrowing owl. In compliance with LRDP mitigation measures 4.4-1(a) and 4.4-1(b), a burrowing owl preconstruction survey shall be performed by a qualified biologist not more than 30 days prior to ground disturbance and/or construction-related activities. The survey shall cover suitable habitat within the project footprint and a 300-foot buffer. The survey will include the peak activity period for the species (1 hour before sunrise to 2 hours after, or 2 hours before sunset to 1 hour after). Burrowing owls will be sought visually and aurally, along with sign (i.e., pellets, tracks, feathers, and active burrows). If no burrowing owls are found during the	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
			<p>preconstruction survey, no further actions are required.</p> <p>If burrowing owls are found outside the project footprint and it is outside the species nesting window of February 1 through August 31, no action is needed. If owls are present within the project footprint and thus direct removal of an occupied burrow would occur outside of February 1 through August 31, passive relocation by a qualified ornithologist shall be conducted.</p> <p>If an owl is found present during February 1 through August 31 and the occupied burrows are within 300 feet of project activities, a qualified ornithologist will assess whether the species is nesting or not. If burrowing owls are nesting within 300 feet of the limits of disturbance, a 300-foot avoidance buffer shall be flagged by the ornithologist and no construction will occur within the flagged off area until it has been determined by the ornithologist that the pair is no longer nesting and young (if present) have fledged.</p>	
Impact 3.3-3: Project construction would impact suitable habitat for rosy boa.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.3-4: Project construction would impact suitable habitat for coastal western whiptail.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.3-5: Project construction would impact suitable habitat for Los Angeles pocket mouse, Dulzura pocket mouse and Northwestern San Diego pocket mouse.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.3-6: Project construction would impact suitable habitat for San Diego black-tailed jack rabbit.	Less than Significant		No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.3-7: Project construction may result in impacts on nesting birds, including loggerheaded shrike.	Significant	MM 4.4-4(a) MM 4.4-4(b)	BIO 2: Pre-Construction Nesting Bird Surveys. In compliance with LRDP Mitigation Measures 4.4-4 (a) and (b), when vegetation removal will occur between February 15 and September 15, nesting bird surveys shall be conducted by a qualified biologist a maximum of 7 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone. Nesting bird surveys shall be conducted for all vegetation communities including annual grassland, ruderal, riparian, riparian-walnut woodland, landscape, and trees within developed portions of the site. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.	Less than significant
Impact 3.3-8: Proposed project improvements within the Arroyo would result in temporary and permanent impacts on riparian habitat.	Significant	PP 4.4-2(a) MM 4.4-3(b)	BIO 3: Minimize Temporary Impacts. Prior to initiation of ground disturbance activities, disturbance limits adjacent to or within the Arroyo shall be clearly staked, including disturbance limits associated with Arroyo improvements. Access to the Arroyo shall be limited to existing roads and shall be fenced to ensure unnecessary encroachment to the Arroyo does not occur. Prior to initiation of ground disturbance activities within the Arroyo (excluding Arroyo enhancement), a qualified biologist (defined as a biologist with demonstrated experience with the resources being avoided) will identify biological resources to be avoided during construction, including jurisdictional streambeds and riparian habitat. The qualified biologist should review the final design plan and	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
			<p>conduct a site visit to all areas within and adjacent to the Arroyo where construction activities would take place. Silt fencing or similar avoidance fencing shall be placed around the disturbance limits required for each project component within or adjacent to the Arroyo. No impacts on the Arroyo shall occur outside of staked disturbance limits. CDFG jurisdictional streambed at the tree removal area for Bridge 1 shall be avoided if practicable. At a minimum, the following areas shall be avoided:</p> <ul style="list-style-type: none"> • riparian vegetation adjacent to the path/culvert removal; • riparian vegetation located at the northwest side of the south abutment temporary work area for Bridge 2; • CDFG jurisdictional streambed located on the south side of the bank recontouring area. • The mature cottonwood tree near the Valencia Hill culvert extension work limit. <p>BIO 4: Prepare and Implement Revegetation Plan. All areas identified as temporarily affected by construction activities shall be revegetated with native vegetation. All areas with riparian habitat shall be revegetated with similar riparian vegetation. Other vegetated areas (i.e., ruderal and annual grassland communities) that are temporarily affected shall be revegetated with native vegetation suitable to that location. If trees/riparian vegetation cannot be replanted within the disturbance limits of the respective project component, a suitable area within the Arroyo shall be selected for restoration. The restoration location will, at a minimum, provide replacement habitat of equal acreage as the affected location.</p>	

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.3-9: The project would impact areas designated as <i>Naturalistic Open Space</i> under the LRDP.	Significant	PP 4.4-1(b)	<p>Prior to removal of vegetation, a qualified biologist shall conduct an assessment of functions and values for the Arroyo, including all areas where vegetation removal will be conducted. Areas assessed will be of sufficient area and number to assess functions and values of the entire Arroyo to demonstrate success of the Arroyo enhancement program. The monitoring component of the revegetation plan shall include functions and values that are of equal or greater value than existing conditions as performance criteria.</p> <p>Prior to initiation of ground disturbance activities, a revegetation plan shall be prepared and submitted to the relevant agencies (i.e., USACE, CDFG). The revegetation plan should be sufficient to meet agency requirements and at a minimum shall include the following:</p> <ul style="list-style-type: none"> • a map and acreage of vegetation to be temporarily affected, • location of revegetation area, • functions and values assessment of areas to be affected, • functions and values assessment of entire Arroyo within the project footprint, • plant palette, • performance criteria, and • monitoring guidelines. <p>BIO 3: Minimize Temporary Impacts. (see above)</p> <p>BIO 4: Prepare and Implement Revegetation Plan. (see above)</p>	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
			<p>BIO 5: Conduct Worker Education Program. To ensure compliance with best management practices identified in LRDP Program and Practice 4.4-1(b), a biologist shall conduct a worker education program for all construction personnel prior to personnel initiating ground disturbance activities. The education program will include a discussion of the importance of the Arroyo and areas within the Arroyo to be avoided (including parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.</p> <p>BIO 6: Conduct Biological Monitoring During Construction. A qualified biologist shall monitor the project for compliance with best management practices outlined in LRDP Program and Practice 4.4-1(b). Monitoring will occur as determined necessary by the biological monitor but will occur at a minimum of one time per 5 working days when work is located in or adjacent to the Arroyo. The limits of areas considered “adjacent to the Arroyo” will be determined by a qualified biologist in conjunction with the impact minimization planning under Mitigation Measure BIO 3.</p> <p>BIO 7: Remove Exotic Species. To minimize potential indirect impacts on <i>Naturalistic Open Space</i>, during vegetation removal during construction, any exotic species removed shall be properly handled to prevent sprouting or re-growth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area during</p>	

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.3-10: The proposed project would impact areas that meet the definition of “waters of the U.S.” and jurisdictional “streambed”.	Significant	PP 4.4-2(a) MM 4.4-3(b)	<p>the course of construction. Cleaning of any equipment shall occur at least 300 feet from the Arroyo.</p> <p>BIO 3: Minimize Temporary Impacts. (see above)</p> <p>BIO 4: Prepare and Implement Revegetation Plan. (see above)</p> <p>BIO 5: Conduct Worker Education Program. (see above)</p> <p>BIO 6: Conduct Biological Monitoring During Construction. (see above)</p> <p>BIO 7: Remove Exotic Species. (see above)</p>	Less than significant
Impact 3.3-11: The project would not conflict with the Western Riverside County MSHCP.	Significant		<p>BIO 1: Pre-Construction Surveys for burrowing owl. (see above)</p> <p>BIO 3: Minimize Temporary Impacts. (see above)</p> <p>BIO 4: Prepare and Implement Revegetation Plan. (see above)</p> <p>BIO 5: Conduct Worker Education Program. (see above)</p> <p>BIO 6: Conduct Biological Monitoring During Construction. (see above)</p> <p>BIO 7: Remove Exotic Species. (see above)</p>	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Cultural Resources				
Impact 3.4-1: Demolition of the on-site residence would not cause a substantial adverse change in the significance of a historical resource.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.4-2: Project earthwork would not cause a substantial adverse change in the significance of an archeological resource.	Significant		<p>CULT 1: Protection and Recovery of Buried Artifacts.</p> <p>If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease. The University shall contact a qualified archaeologist within 24 hours to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by CEQA), the University shall devote adequate time and funding to salvage the material. Any archaeologically important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of finding that meets professional standards.</p>	Less than significant
Geology And Soils				
Impact 3.5-1: The proposed project would not place people or structures at risk because of strong seismic ground shaking.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.6-1(a) PP 4.6-1(c)	No project-level mitigation is required	Less than significant
Impact 3.5-2: The proposed project would not expose people or structures to significant hazards involving seismically related ground failure.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.6-1(a)	No project-level mitigation is required	Less than significant
Impact 3.5-3: The proposed project would not expose people or structures to significant hazards involving landslides.	Less than Significant		No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.5-4: The project would not be located on a potentially unstable geologic unit.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.6-1(a)	No project-level mitigation is required	Less than significant
Impact 3.5-5: The proposed project would not create substantial risk to life of property as a result of expansive soils.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.6-1(a)	No project-level mitigation is required	Less than significant
Greenhouse Gas Emissions				
Impact 3.6-1: The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.6-2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.	Less than Significant		No project-level mitigation is required	Less than significant
Hazards And Hazardous Materials				
Impact 3.7-1: Project-related ground disturbance would not expose construction workers, campus occupants, area residents, or the environment to significant hazards.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.7-2 PP 4.7-4	No project-level mitigation is required	Less than significant
Impact 3.7-2: Project-related building demolition would not create a significant hazard to construction workers, campus occupants, area residents, or the environment.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.3-2(c) PP 4.7-2	No project-level mitigation is required	Less than significant
Impact 3.7-3: Project-related storage of diesel fuel would not create a significant hazard to campus occupants, area residents, or the environment through the routine transport, use, or disposal of hazardous materials.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.7-1	No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.7-4: Project construction in the vicinity of the fuel pipeline within Valencia Hill Drive would not result in a significant hazard to the public or the environment.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.7-5: Increasing the residential population in the vicinity of the fuel pipeline within Valencia Hill Drive would not result in a significant hazard to residents.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.7-6: Project-related storage of diesel fuel would not create a significant hazard to campus occupants, area residents, or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant with Implementation of LRDP EIR Measure	MM 4.7-7(b)	No project-level mitigation is required	Less than significant
Impact 3.7-7: Operation of the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.7-8: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evaluation plan.	Less than Significant with Implementation of LRDP EIR Measures	MM 4.7-7(a) MM 4.7-7(b)	No project-level mitigation is required	Less than significant
Hydrology And Water Quality				
Impact 3.8-1: Project construction would not violate water quality standards and or waste discharge requirements.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.8-3(b) PP 4.8-3(d)	No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.8-2: Operational stormwater discharges would not violate water quality standards or waste discharge requirements.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.8-3(d)	No project-level mitigation is required	Less than significant
Impact 3.8-3: Implementation of the project would not substantially alter the existing drainage pattern of the site area in a manner that would result in substantial erosion or siltation on or off site.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.8-3(d)	No project-level mitigation is required	Less than significant
Impact 3.8-4: The project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.	Less than significant	PP 4.8-3(e)	No project-level mitigation is required	Less than significant
Impact 3.8-5: Proposed permanent and temporary encroachments into mapped floodplains would not impede or redirect flows in a manner that would adversely affect existing or proposed buildings or sensitive resources.	Less than Significant		No project-level mitigation is required	Less than significant
Land Use And Planning				
Impact 3.9-1: The Glen Mor 2 project is consistent with the SCAG Regional Comprehensive Plan.	Less than Significant		No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.9-2: The Glen Mor 2 project is consistent with the UCR Long Range Development Plan.	Significant	PP 4.9-1(a) PP 4.9-1(b) PP 4.9-1(d) PS Open Space 4 PS Campus and Community 1 PS Open Space 3 PS Conservation 1	Mitigation Measures BIO 3 through 7 (see above)	Less than significant
Impact 3.9-3: Implementation of the Glen Mor 2 project will establish multiple-family style student apartment buildings and associated support facilities, including a parking structure, at a campus edge location adjacent to an established residential neighborhood.	Less than Significant	PS Campus and Community 1 PS Open Space 4 PP 4.9-1(a) PP 4.9-1(b)		Less than significant
Impact 3.9-4: Implementation of the Glen Mor 2 project will reduce the amount of land designated for <i>Athletics and Recreation</i> uses under the LRDP.	Less than Significant			Less than significant
Noise				
Impact 3.10-1: The project would not result in interior noise levels at the proposed student apartments in excess of the State's 45 dBA CNEL interior noise standard.	Less than Significant with Implementation of LRDP EIR Measures	PP 4.10-1(b)(i) PP 4.10-1(b)(iv)	No project-level mitigation is required	Less than significant
Impact 3.10-2: Project construction would exceed LRDP standards for groundborne vibration as received by on-campus residences.	Significant	PP 4.10-2 MM 4-10-2	NOI 1: Use of high-vibration construction equipment near Lothian Residence Hall. To the extent feasible, schedule construction activity entailing use of high-vibration generating equipment within 75 feet of Lothian Residence Hall during periods when students are not in residence.	Significant and unavoidable

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.10-3: Project construction would not exceed LRDP EIR standards for groundborne vibration as received by off-campus residences.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.10-4: The project would generate increased local traffic volumes, but would not cause a substantial permanent increase in noise received at on- and off-campus locations.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.10-5: The project parking structure would increase noise levels on and near the site, but would not cause a substantial permanent increase in noise received at on- and off-campus locations.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.10-6: The project would install new stationary equipment and other stationary noise sources that would not cause a substantial permanent increase in on- and off-campus ambient noise.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.10-7: Project construction would result in a substantial temporary increase in on- and off-campus ambient noise.	Significant	PP 4.10-2 PP 4.10-7(a) PP 4.10-7(b) PP 4.10-7(c) PP 4.10-7(d) PP 4.10-8	NOI 2: Restrict construction hours. The Office of Design and Construction will ensure that all construction contracts will limit exterior construction activities to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on Saturday. Construction will not be allowed on Sunday or federal holidays. NOI 3: Appoint construction noise liaison. The Office of Design and Construction will appoint a campus liaison for the project who will be available to respond to community concerns regarding construction noise, and will establish a clear appeal process to another designated campus representative that will allow resolution of noise problems that	Significant and unavoidable

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
			<p>cannot be solved immediately by the appointed liaison.</p> <p>NOI 4: Require mufflers and other noise attenuators on project construction equipment. The Office of Design and Construction will ensure all construction contracts specify that noise-producing construction equipment and vehicles using internal combustion engines will be equipped with mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) will be equipped with shrouds and noise-control features that are readily available for that type of equipment.</p> <p>NOI 5: Require use of electrically powered equipment. The Office of Design and Construction will ensure all construction contracts specify that work use electrically powered equipment instead of pneumatic or internal combustion-powered equipment, where feasible.</p> <p>NOI 6: Specify construction site speed limit. The Office of Design and Construction will ensure all construction contracts specify that construction site and access road speed limits will be established and enforced during the construction period.</p> <p>NOI 7: Prohibit noise-producing signals. The Office of Design and Construction will ensure all construction contracts prohibit the use of noise-producing signals, including horns, whistles, alarms, and bells, except for safety purposes only. Public address or music systems will also be prohibited.</p>	

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.10-8: Construction haul traffic would result in a temporary increase in on- and off-campus ambient noise.	Less than Significant		No project-level mitigation is required	Less than significant
Public Services				
Impact 3.11-1: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for fire protection services.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.12-1(a)	No project-level mitigation is required	Less than significant
Impact 3.11-2: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for fire prevention services.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.12-1(a)	No project-level mitigation is required	Less than significant
Impact 3.11-3: Implementation of the Glen Mor 2 Student Apartments Project would increase building area on the campus, potentially increasing demand for fire flow.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.12-1(a)	No project-level mitigation is required	Less than significant
Impact 3.11-4: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for police protection services.	Less than Significant	PP4.12-2(a)	No project-level mitigation is required	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Recreation				
Impact 3.12-1: The project-related increase in campus population would not increase the use of existing active recreational facilities on campus such that substantial physical deterioration of the facilities would occur or be accelerated.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.12-2: The project-related increase in campus population would not increase the use of existing off-campus neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	Less than Significant		No project-level mitigation is required	Less than significant
Impact 3.12-3: Implementation of the proposed Glen Mor 2 Student Apartments Project includes recreational facilities that would not have adverse physical effects on the environment.	Less than Significant		No project-level mitigation is required	Less than significant
Transportation and Traffic				
Impact 3.13-1: The project would contribute traffic to the intersection of Watkins Drive and Big Springs Road, which would degrade service at that intersection from an acceptable level to an unacceptable level.	Significant		<p>TR 1: Contribute a proportional share of funds to the City of Riverside to install a traffic signal at the intersection of Watkins Dr and Big Springs Rd</p> <p>The University will pay the City the proportional share of the actual cost of the traffic signal at the time that the implementation of the traffic signal is reasonably certain, and no later than the start of construction of the traffic signal. The University's proportional share will be based on the Glen Mor 2 project's total traffic contribution to the intersection of Watkins Drive and Big Springs Road, which is currently anticipated to be 6.6 percent, as determined by the traffic impact analysis prepared</p>	Significant and unavoidable

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.13-2: Project construction would generate construction-related vehicle trips that would result in a temporary impact on traffic conditions in the local circulation system.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.14-2	No project-level mitigation is required	Less than significant
Impact 3.13-3: The project would not construct any permanent features or contribute incompatible uses that would cause a traffic-related hazard.	Less than Significant with Implementation of LRDP EIR Measure	PP 4.14-4	No project-level mitigation is required	Less than significant
Impact 3.13-4: Project construction would result in short-term hazards due to temporary lane closures on Big Springs Road and Valencia Hill Drive and the presence of construction vehicles and equipment on local roads.	Significant	PP 4.14-5 PP 4.14-6 PP 4.14-8	<p>TR 2: Prepare a traffic control plan for project construction.</p> <p>Prior to commencement of construction, the project construction contractor will prepare a traffic control plan for the project and submit it to the UCR Office of Design and Construction for approval. As part of its review of the traffic control plan, the UCR Office of Design and Construction will consult with UCPD, EH&S, RFD, and RPD to disclose roadway closures and identify alternative travel routes, if necessary. The UCR Office of Design and Construction will consult with the City Public Works Department for their concurrence regarding the adequacy of traffic control within off-campus roads. The traffic control plan will identify lane closures and show the limits of construction work, areas with temporary restriping of lanes and crosswalks, flagging operations, signage, alternate routes, and other actions necessary to maintain safe traffic conditions for vehicles, bicyclists, and pedestrians. The plan shall include consideration of emergency vehicle use of the paved drive along the north side of the Great Glen Arroyo, adjacent to the Pentland Hills and Glen Mor 1</p>	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
Impact 3.13-5: Project construction would result in a short-term pedestrian hazard due to closure of pathways through the project site.	Significant	PP 4.14-6	complexes. Any lane closures specified in the traffic control plan will be announced on UCR's web site (www.community.ucr.edu). TR 2: Prepare a traffic control plan for project construction. (see above) TR 3: Prepare a pedestrian access plan for project construction. Prior to commencement of construction, the project construction contractor will prepare a pedestrian access plan for pathways through and adjacent to the project site that are affected by project construction activities and submit it to the UCR Office of Design and Construction for review and approval. The pedestrian access plan will show alternate routes for all affected pathways and signage announcing closures and alternate routes to pedestrians.	Less than significant
Impact 3.13-6: Project construction may entail short-term use of emergency access routes.	Significant	PP 4.14-8	TR 2: Prepare a traffic control plan for project construction. (see above)	Less than significant
Impact 3.13-7: The project would provide an adequate number of parking spaces to serve the proposed facilities.	Significant		TR 4: Balance housing precinct occupancy and parking supply. The UCR Office of Housing Services will establish a reporting program to document conformance to LRDP parking ratios for the housing precinct, including Aberdeen-Inverness, Lothian, Pentland Hills, Glen Mor 1, and Glen Mor 2. Compliance documentation shall disclose (1) bed counts for the fall quarter for residence halls and apartments, (2) the corresponding number of parking spaces required (at ratios of one for every four residence hall beds and one for every two apartment beds), and (3) the number of parking spaces provided.	Less than significant

Environmental Effects	Level of Significance Prior to Mitigation	2005 LRDP EIR Measures	Glen Mor 2 Student Apartments Project-Level Mitigation Measure(s)	Level of Significance After Mitigation
			Compliance documentation shall be filed with the Office of Design and Construction on an annual basis, within two weeks of the fall quarter move-in. No parking permits will be issued beyond the number of spaces available.	
Impact 3.13-8: The project would provide adequate parking for construction workers during the construction period.	Less than Significant with LRDP EIR Measure	MM 4.14-11	No project-level mitigation is required	Less than significant
Impact 3.13-9: The project would not conflict with plans, policies, or programs regarding public transit and would not affect transit facilities.	Less than Significant		No project-level mitigation is required	Less than significant
Utilities and Service Systems				
Impact 3.14-1: The existing campus domestic water system has adequate storage and conveyance capacity to serve the incremental demand of the Glen Mor 2 project.	Less than Significant	PP 4.15-1(a)	No project-level mitigation is required	Less than significant
Impact 3.14-2: The existing on-campus sewer main has adequate conveyance capacity to serve the incremental demand of the Glen Mor 2 project.	Less than Significant.		No project-level mitigation is required	Less than significant

Chapter 1

Introduction

This draft environmental impact report (EIR) for the University of California, Riverside (UCR) Glen Mor 2 Student Apartments Project (project or proposed project) has been prepared in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.), and the UC CEQA Handbook. This chapter provides introductory information regarding the project and the CEQA process.

1.1 Project Background

UCR is proposing construction of a student housing community on approximately 21 acres of university-owned property on the eastern edge of campus. The UCR 2005 Long-Range Development Plan (2005 LRDP), the guiding document for future development on campus, identifies a goal of housing 50 percent of students in campus housing (both on-campus housing and nearby campus-controlled housing). The proposed project would help implement this aspect of campus development by constructing an apartment-style housing facility that would accommodate 810 students in 232 apartment-style units. Associated improvements would include a parking structure for residents, circulation improvements, indoor and outdoor commons facilities, a café and food/retail facility (referred to throughout this EIR as the Food Emporium), and an executive retreat center. The proposed apartment units are intended to house graduate students and upper-class undergraduates. The project would also entail restoration of a 0.4-mile stretch of an arroyo that runs through the northern part of the site (referred to throughout this EIR as the Great Glen Arroyo), thereby implementing UCR's goals and planning strategies for resource conservation, as stated in the 2005 LRDP.

1.2 CEQA and the EIR Process

CEQA requires public agencies and jurisdictions to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects (Public Resources Code [PRC] 21000 et seq.). An EIR is an informational document prepared pursuant to CEQA to inform the agency's decision makers, responsible or interested agencies, and the general public of a project's environmental effects. This EIR has been prepared by UCR for consideration by the Board of Regents of the University of California (The Regents), which has discretionary authority to approve the project design and authorize construction of this project.

1.2.1 Intent and Scope of a Tiered EIR

This EIR, prepared pursuant to Section 15152 of the State CEQA Guidelines, is a tiered EIR. *Tiering* is defined as a process that uses "the analysis of general matters contained in a broader EIR (such as one prepared for a general plan...)," with later EIRs concentrating "solely on the issues specific to the later project."

This EIR is tiered under UCR's 2005 LRDP Final Environmental Impact Report (LRDP EIR) (State Clearinghouse No. 2005041164), which is a program EIR that provides broad analysis of the environmental effects of implementing the 2005 LRDP.¹

The LRDP EIR acknowledges that programmatic analysis provides broad coverage of the plan's impacts, which may be adequate for analyzing individual campus projects, but that subsequent CEQA documents may also be required. Section 1.3 of the LRDP EIR states that

As future projects are proposed, UCR will determine whether additional environmental review is required. As required by Section 15168(c) of the [State] CEQA Guidelines, subsequent projects would be examined in light of this program EIR to determine whether the potential environmental effects of the project were adequately addressed in this EIR, and whether any additional mitigation measures are required.

UCR has determined that this project requires a project-level tiered EIR given the findings of the initial study, which evaluated the project in the context of the impact analysis in the LRDP EIR. The initial study, which was included as part of the notice of preparation (NOP) package, discussed in Section 1.2.3, below, concluded that while some impacts are covered by the analysis and mitigation measures included in the LRDP EIR, many project-specific impacts are not covered in that previous document and require additional analysis in a tiered EIR. The initial study identified certain impacts related to the following environmental issue areas that would need project-level analysis:

- Aesthetics
- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Mandatory Findings of Significance

This EIR provides project-level analysis of these issues and other issues that arose during the scoping period, discussed below in Section 1.2.3.

1.2.2 Intended Uses of the EIR

This EIR gives decision makers, representatives of agencies affected or otherwise concerned by the project, and the general public an opportunity to understand the project and the environmental impacts that may result from implementing the project.

Prior to approving the project, The Regents must consider all the information included in the final EIR (see Section 1.2.6, below) and certify that it reflects the lead agency's independent judgment and analysis. In the event that the project is approved by The Regents, the EIR will be used as the basis for obtaining any additional entitlements, permits, or approvals necessary to construct and operate the project. Under CEQA, public agencies other than the lead agency that may have discretionary

¹ The LRDP EIR was certified by The Regents on November 17, 2005, the same day The Regents adopted the 2005 LRDP. Section 15168 of the State CEQA Guidelines defines a program EIR as one "prepared on a series of actions that can be characterized as one large project." CEQA Section 21080.09 and State CEQA Guidelines Section 15081.5(b) specifically acknowledge the use of tiered environmental analyses for specific campus projects based on a long-range development plan EIR.

authority over the project or aspects of the project are called responsible agencies or trustee agencies. These agencies will use this EIR when considering whether to issue discretionary permits or approvals. The agencies and the permits/approvals involved in this project are listed below in Section 1.3.

1.2.3 Notice of Preparation and Public Scoping Meeting

In accordance with CEQA requirements, UCR prepared and circulated an NOP for the project. The NOP notified agencies, organizations, and individuals that an EIR is being prepared, introduced the project, and solicited comments regarding the scope of the project's environmental review. The NOP included a brief description of the project, figures depicting the project site and proposed site plan, and an initial study checklist that identified environmental impacts that would be discussed in the EIR. The NOP was circulated on August 6, 2010, via a direct mailing to relevant agencies, publication in the *Press Enterprise*, posting on UCR's web site, and filing with the Riverside County Clerk, the Southern California Association of Governments (SCAG), and the State Clearinghouse. Distribution also included direct mailing to one individual and one tribal entity with requests on file at the UCR Office of Design and Construction.

The NOP is included as Appendix A of the EIR. Written responses to the NOP were received from the California Department of Fish and Game, the Native American Heritage Commission, the South Coast Air Quality Management District, the Riverside County Flood Control and Water Conservation District, and the City of Riverside (City) Community Development Department. Copies of the letters written in response to the NOP are also provided in Appendix A of the EIR.

UCR's scoping process for the EIR also included a scoping meeting, which was held on campus on August 25, 2010. At the scoping meeting, UCR officials and project consultants introduced the project and fielded comments regarding the scope of environmental review. A transcript of the scoping meeting is provided in Appendix A of the EIR.

As required under CEQA, UCR has considered all comments received in response to the NOP, including all written comments and verbal comments submitted during the scoping meeting.

In addition to the scoping meeting held pursuant to the requirements of CEQA, the campus convened two public meetings prior to initiating the CEQA review process to provide the public with a preview of the proposed project and obtain community input. These meetings were held on April 7 and May 12, 2010.

1.2.4 Draft EIR

This EIR is organized into the chapters listed below, which present project information and environmental impact analysis, as required by CEQA.

- Chapter 1, Introduction, provides background information regarding CEQA and the environmental review process for the project.
- Chapter 2, Project Description, explains the project objectives, summarizes the environmental setting of the project site, and describes the components of the proposed development and its associated construction process. This chapter also explains the project's relationship to the 2005 LRDP and EIR and introduces the project alternatives analyzed in the EIR.

- Chapter 3, Environmental Setting, Impacts, and Mitigation, provides impact analysis for each of the environmental issues requiring project-level evaluation. This chapter discusses the existing conditions at the project site as they relate to each environmental resource and discusses the various direct, indirect, short-term, long-term, and unavoidable consequences of the action that would occur with development. Mitigation measures that reduce or avoid significant impacts are also identified.
- Chapter 4, Alternatives Analysis, describes the project alternatives and presents a discussion of their environmental impacts compared with those of the proposed project.
- Chapter 5, Other CEQA Considerations, provides miscellaneous information and analyses required by CEQA, including a summary of the project's significant impacts, analysis of the project's growth-inducing impacts, and a discussion of any irreversible environmental changes that would result from project implementation.
- Chapter 6, EIR Preparers and Contributors, lists the people who authored or contributed to the EIR.

The EIR also contains technical appendices, the detailed analyses referenced in the EIR and prepared as part of the project's environmental review.

1.2.5 Public Review Process

As required under Section 15105 of the State CEQA Guidelines, this draft EIR will be made available for public review and comment for a period of 45 days. Copies will be sent to the State Clearinghouse for circulation to interested state agencies, and copies will also be sent directly to other responsible and trustee agencies that may be interested in the project. During the public review period, copies of the draft EIR will be available for review at the UCR Office of Design and Construction, 3615-A Canyon Crest Drive. An electronic version of the draft EIR will be made available for download on UCR's web site at <http://odc.ucr.edu> (select the "Notices" link under "Environmental Services/CEQA," then see the project link listed under "Notice of Completion").

UCR will accept written comments on the draft EIR during the public review period. Written comments can be mailed to

Tricia D. Thrasher, ASLA, LEED AP
Principal Environmental Project Manager
Attn: Glen Mor 2 Student Apartments Project
UCR Office of Design and Construction
3615-A Canyon Crest Drive
Riverside, CA 92507

Comments can also be sent electronically via email to tricia.thrasher@ucr.edu.

UCR will host a public meeting regarding the draft EIR, during which time UCR will present the conclusions of the draft EIR and receive verbal comment from agencies and members of the public. Details regarding the location and time will be posted on UCR's web site at <http://odc.ucr.edu> (select the "Community Announcements and Meetings" link).

1.2.6 Final EIR

After the close of the public review period for the draft EIR, UCR will compile and review all comments from agencies, organizations, and individuals pertaining to the draft EIR or the project's environmental impacts. UCR will then prepare a final EIR for the project, which will include

comments received on the draft EIR, a list of commenting parties, written responses to all comments, and, if necessary, a discussion of revisions or additions made to the draft EIR in response to public comments or other information made apparent during the review period.

1.3 List of Responsible/Trustee Agencies and Required Permits

The following is a list of responsible and trustee agencies involved in this project and the associated discretionary actions required prior to project implementation:

- University of California Board of Regents,
 - Design Approval and Authorization to Construct;
- U.S. Army Corps of Engineers,
 - Clean Water Act Section 404 Authorization;
- California Department of Fish and Game,
 - Streambed Alteration Agreement per California Fish and Game Code Section 1600. et seq.;
- Santa Ana Regional Water Quality Control Board,
 - Clean Water Act Section 401 Water Quality Certification; and
- South Coast Air Quality Management District,
 - Permit to Construct/Operate (for emergency generators).

In addition to these permits from the responsible and trustee agencies, the project would likely require ministerial permits from the City for encroachment into a City right-of-way for gas line connections, culvert construction, and improvements along Valencia Hill Drive.

1.4 Areas of Known Community/Agency Concern

During the scoping period, residents of the area directly east of the project site expressed concern about how the adjacent community would be affected by the presence of new buildings and the resultant increase in student activity. Some were concerned about the visibility of the buildings and the effect on existing sight lines as well as light generated on the site that may be visible from off-site residences. Others expressed concern about noise generated on the project site. Others mentioned the potential increase in automobile traffic on nearby off-campus roadways as well as students parking in the residential neighborhood. Residents also expressed concern about construction-period impacts, particularly those related to noise from construction equipment and truck traffic on local streets.

The agency comment letters received during the scoping period did not indicate any significant matters of concern but delineated environmental issue areas for which impact analysis will need to be presented in the EIR.

Chapter 2

Project Description

2.1 Introduction

UCR is proposing construction of a student housing community on approximately 21 acres of university-owned property on the eastern edge of campus. The 2005 LRDP identifies a goal of housing 50 percent of students in campus housing (both on-campus housing and nearby campus-controlled housing). The proposed project would help implement this important aspect of campus development by constructing an apartment-style housing facility that would accommodate 810 students in 232 apartment-style units. Associated improvements would include a parking structure for residents, circulation improvements, indoor and outdoor commons facilities, a café and food/retail facility (referred to throughout this EIR as the Food Emporium), and an executive retreat center. The proposed apartment units are intended to house graduate students and upper-class undergraduates. The project would also entail restoration of a 0.4-mile stretch of an arroyo that runs through the northern part of the site (referred to throughout this EIR as the Great Glen Arroyo), thereby implementing UCR's goals and planning strategies for resource conservation, as stated in the 2005 LRDP.

The project description presented in this draft EIR has been updated from that provided in the August 2010 NOP. The updates reflect refinements resulting from the continuing design process, including changes to address design suggestions made by local residents during the informational meetings on the project, and changes to reduce environmental impacts as additional information about site resources became available. The updated project elements include the following:

- Addition of sidewalk and fencing along the Valencia Hill Drive frontage, with associated extension of the existing storm drain culvert;
- Modifications to the retained portion of Parking Lot 14;
- Refinements, including the addition of building pad elevations and roof heights, to the Building Program Statistical Summary (Table 2-1);
- Clarification regarding modifications to the median in Big Springs Road;
- An option for photovoltaic panels on the parking structure roof;
- Addition of solar hot water systems for residential buildings;
- Additional detail regarding the arroyo improvements;
- Naming of the on-site arroyo as the Great Glen Arroyo;
- Additional detail regarding storm drain and water quality improvements associated with on-site discharges to the arroyo;
- Additional detail regarding tree removal;
- Updated estimate regarding earthwork, including details regarding the disposal site and haul route for excess material;
- Addition of stand-by generators for emergency power;
- Upgrade of Leadership in Energy and Environmental Design (LEED) objective from Silver to Gold; and
- Updated information regarding enrollment and existing campus housing occupancy (for fall 2010).

Table 2-1. Glen Mor 2 Student Apartments Project Building Program Statistical Summary

Building	Use	GSF ¹	ASF ²	Occupants	Footprint (sf)	Floors	Height ³ (ft)	Pad Elevation (ft ASL ⁴)	Roof Elevation ⁵ (ft ASL ⁴)
A	Food Emporium	7,960	4,600	120	7,000	1	23	1,088	1,104 ⁶
B	Housing	67,400	46,000	160 ⁷	13,100	5	55	1,094	1,144
C	Housing	61,720	42,600	140	12,550	5	55	1,093	1,143
D	Housing	77,420	55,370	182	12,950	5 ⁸	55	1,093/1,104	1,155
E	Resident Services	11,500	4,520	85	5,575	2.5	30	1,094/1,115	1,133 ⁹
F	Community Building	5,540	3,825	65	3,010	2	32	1,114/1,126	1,146 ¹⁰
G	Housing	57,370	42,525	140 ⁷	7,475	5	55	1,114/1,126	1,166 ¹¹
H	Housing	75,750	53,800	188	13,850	5	55	1,125/1,135	1,175/1,185
J	Executive Retreat	4,060	3,220	102	4,060	1	20	1,136	1,153 ¹²
Parking Structure	Parking	191,800		597	66,910	3 ¹³	21	1,094	1,115

Notes:

¹ GSF stands for gross square footage. This reflects the total building area encompassed by the exterior building walls.

² ASF stands for assignable square footage. This reflects the total useable building area but excludes space devoted to walls, columns, corridors, restrooms, and similar building support spaces.

³ Average height, considering extensions for parapets, stair enclosures, and elevator penthouses.

⁴ ASL stands for above sea level.

⁵ As measured at roof level of the upper floor. Residential buildings include parapets extending 4 feet above roof level. Taller projections occur within small footprints on the roof of each building for mechanical equipment screens (10 feet above roof level) as well as elevator penthouses and stairwell enclosures (12.5 feet above roof elevation).

⁶ The upper roof line for the Food Emporium is on an angle, with the upper point at the southwest corner of the building approximately 8 feet above the indicated roof elevation.

⁷ Buildings Band G each include two Resident Director units, which are not included in the 810-student bed count.

⁸ Building has partial basement. East end of building on upper pad is four stories.

Notes (cont'd.):

⁹ Building transitions from lower pad to upper pad with complex architectural form. Indicated elevation is maximum overall height.

¹⁰ Building transitions from lower pad to upper pad with complex architectural form. Indicated elevation is maximum overall height.

¹¹ North side of building on higher pad is four stories.

¹² Building form is complex. Indicated roof height is overall maximum height.

¹³ First level is at ground level, with two raised decks. A 3.75-foot-high parapet extends around the upper deck perimeter. The stairwell enclosure at the northeast corner of the structure extends approximately 10 feet above the upper deck. The entire building height is exposed along the south and west elevations. From the east, ground levels within the adjacent landscape setback rise from south to north, placing the lower level below grade at the northeast corner of the building. From the north, the structure is primarily below finished grade, with only the parapet and elevator/stair penthouses exposed. At the east end of the north elevation, finished ground levels drop toward the landscaped buffer along Valencia Hill Drive; the exterior wall between the second and third parking decks and the stairwell enclosure is visible in this area.

2.2 Project Location and Environmental Setting

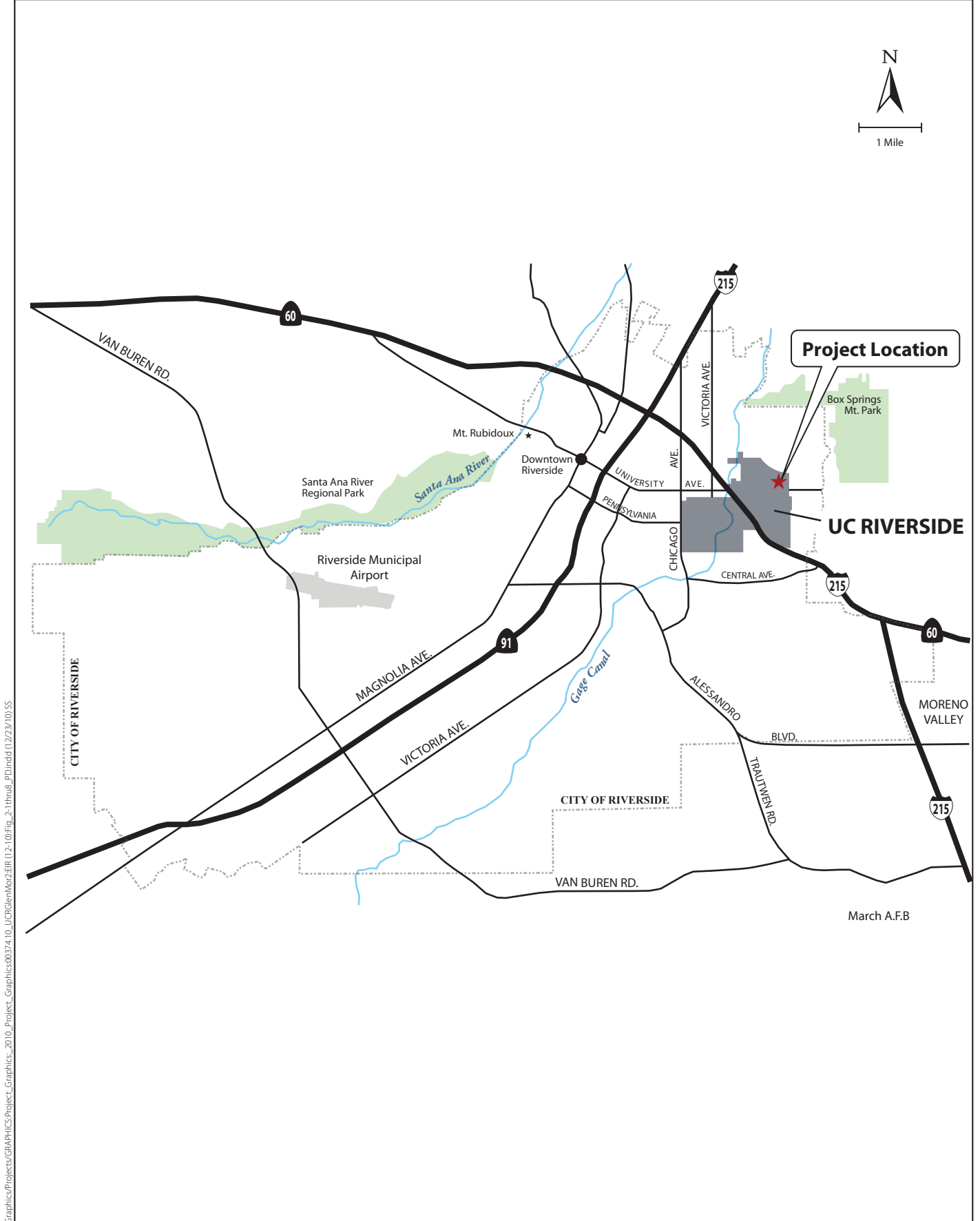
The project site is located within the UCR campus, which is in the northeastern part of the City, approximately 2.5 miles southeast of the State Route 91/Interstate 215/State Route 60 interchange. Located on nearly 1,200 acres at the foot of the Box Springs Mountains in western Riverside County, the campus is bisected by State Route 60/Interstate 215, creating West Campus and East Campus areas. The West Campus is currently dominated by agricultural teaching and research fields, but it also supports the University Extension facility, administrative offices, and parking uses. The East Campus supports the historic campus core and a variety of academic, housing, administrative, and athletic and recreational uses. Regionally, the project area is approximately 50 miles east of Los Angeles, with access from State Route 60/Interstate 215 at University Avenue. Figure 2-1 identifies the campus location in the regional context.

The project site consists of approximately 21 acres on the East Campus, just northwest of the Valencia Hill Drive/Big Springs Road intersection. Campus housing developments (Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills)¹ and associated recreational fields border the site to the north and west. Big Springs Road borders the site to the south. Valencia Hill Drive forms the eastern site boundary, with off-campus single- and multiple-family residential development situated across that street. Figure 2-2 identifies the project site in the context of existing campus facilities and adjacent uses. The larger surrounding area can be described using a boundary that follows Valencia Hill Drive and Watkins Drive, with the area west and south of this boundary characterized by largely developed campus lands and the area east and north characterized by established off-campus residential neighborhoods. A small commercial center is located at the intersection of Watkins Drive and Big Springs Road, with a church and the City's Islander Park situated beyond along the north side of Watkins Drive. The Box Springs Mountains lie beyond the developed area east of the campus and form a dramatic backdrop to the campus and the adjacent community.

The project site is partially developed with an existing surface parking lot (Parking Lot 14) and a vacant single-family residence, which will be removed as part of the project. Parking Lot 14 currently provides 482 parking spaces for residents of the housing precinct. It is located partially within the project boundaries and partially west of the project boundaries. The lot is divided into areas, upper Parking Lot 14, which is adjacent to the Lothian residence hall and provides 78 spaces, and lower Parking Lot 14, which is east of the west driveway and provides 404 spaces. Parking Lot 14 also provides several dedicated spaces for disabled residents. These are located in upper Parking Lot 14. There are two access driveways to Parking Lot 14 from Big Springs Road. A paved driveway to the residence is located off Valencia Hill Drive, just south of Goins Court. A temporary wireless service antenna, which is adjacent to the residence, is being relocated independent of the proposed improvements. Expansive, mature landscape elements are present along the Big Springs Road frontage and at the Big Springs Road/Valencia Hill Drive intersection.

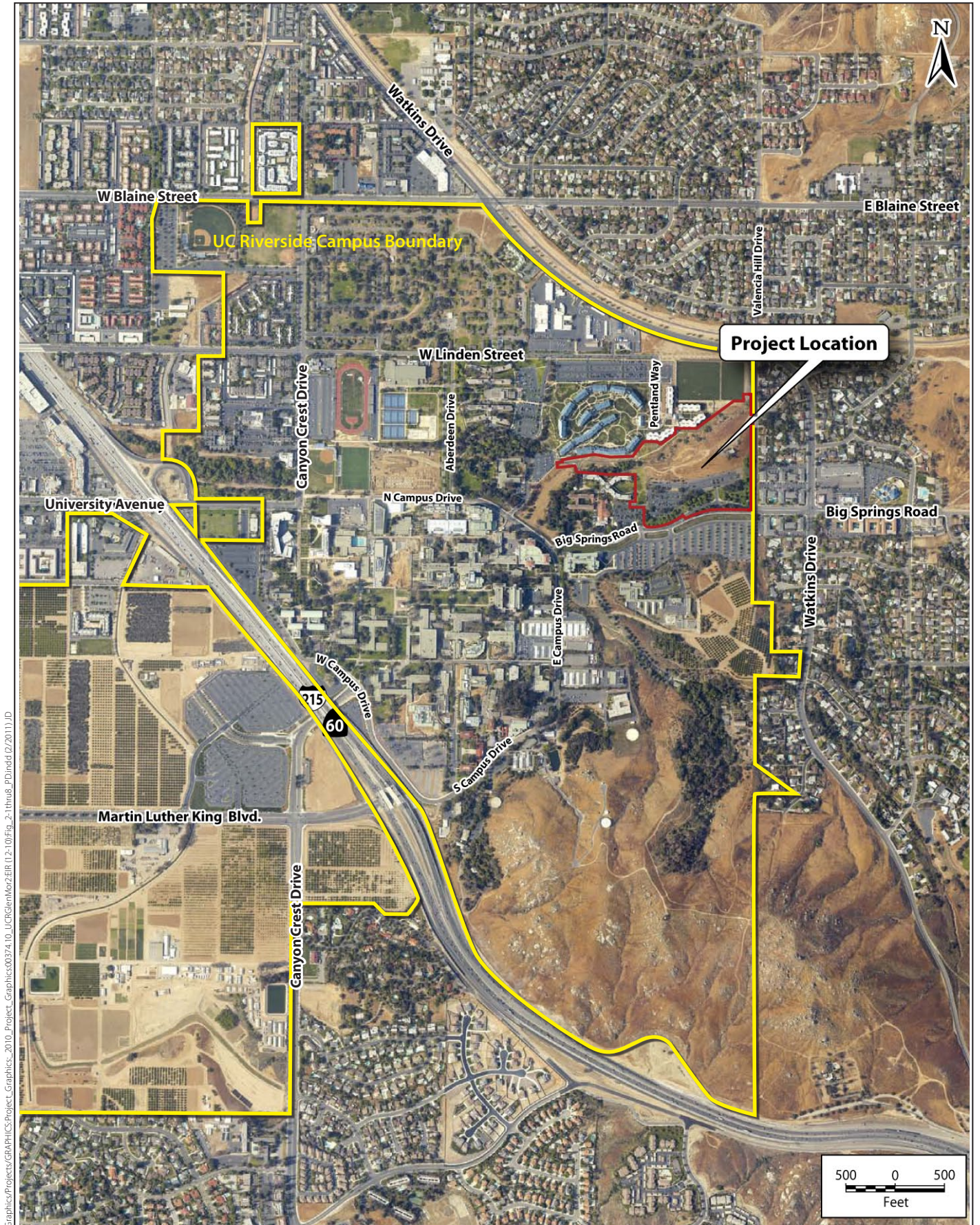
Site topography is varied, with the dominant features being a ridge that runs generally parallel to Big Springs Road and a natural drainage feature that runs along the north edge of the site. The ridge rises approximately 35 to 50 feet above Big Springs Road and a generally level portion of the site, which is currently occupied by Parking Lot 14. From Valencia Hill Drive, the ridge lies perpendicular

¹ These developments make up the housing precinct, of which the Glen Mor 2 apartments would be a part.



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Figure 2-1
Regional Location Map
Glen Mor 2 Student Apartments



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Figure 2-2
Project Location Map
Glen Mor 2 Student Apartments

to the street, with site grades ranging from at grade to approximately 20 feet above ground level on Valencia Hill Drive. The vacant residence is located at the uppermost elevation of this ridge, approximately 120 feet west of Valencia Hill Drive.

The Great Glen Arroyo is a tributary of the University Arroyo system, which flows east to west through campus. This on-site feature carries runoff from the residential area northeast of the project site to the main branch of the University Arroyo, with the confluence located west of the Lothian residence hall and adjacent to North Campus Drive. The on-site portion of the Great Glen Arroyo is characterized by steeply incised banks and a meandering flow line in the eastern portion of the site, broadening to more gently sloping banks and a more uniform, broader bottom in the reach adjacent to the existing Lothian residence hall. The arroyo reflects a variety of disturbances resulting from current and historic uses on adjoining campus lands and development in off-campus tributary areas.

2.3 Project Objectives

State CEQA Guidelines Section 15124 establishes the requirement to address project objectives in an EIR project description. In addition to addressing the underlying project purpose, the objectives are also relevant to the development of the alternatives that will be considered in the EIR and in the preparation of findings or a statement of overriding considerations, if necessary, in support of the decision-making action by The Regents.

The following objectives have been established for the Glen Mor 2 Student Apartments Project:

- Progress toward the 2005 LRDP goal of providing on-campus housing for 50 percent of students by establishing a student housing community with approximately 800 beds for occupancy by Fall 2013;
- Establish a clear network of non-vehicular connections, considering the site's location adjacent to an existing housing precinct and its relationship with the larger campus;
- Incorporate sustainable design strategies, with a target of LEED Gold certification;
- Protect and restore the on-site arroyo in furtherance of 2005 LRDP Planning Strategy Open Space 3;
- Provide proximate and secure parking consistent with 2005 LRDP ratios;
- Minimize potential adverse consequences to off-campus neighborhoods associated with development at the edge of the campus;
- Provide a convenient retail food market and café to serve residents of the housing precinct;
- Provide a controlled edge on the site's eastern boundary, thereby minimizing interaction with the off-campus neighborhood on Valencia Hill Drive; and
- Take advantage of the "hill" with the creation of a small, special meeting place that includes a few hotel-style suites for visiting faculty, resident program presenters, and housing guests.

2.4 Proposed Project

The project entails construction and long-term operation of a new apartment-style student housing complex in the northeastern portion of the UCR campus, providing a total of 810 student beds in 232 apartment-style units. The proposed building program would provide five residential buildings,

a café and food/retail facility (Food Emporium), a resident services office, a community building, and an executive retreat center (see Table 2-1 for a statistical summary pertaining to the proposed buildings and Figure 2-3 for the proposed site layout).

The following sections offer further explanation of each component of the proposed project, including the parking structure and landscaping.

2.4.1 Project Features

The project proposes a series of buildings that would be designed as a cohesive whole, with aesthetic reference to the Glen Mor 1 project to the north. Figure 2-4 shows two oblique views of the proposed buildings, one from a point near the southwest corner of the site and the other from a point near the northeast corner of the site. Figure 2-3, above, shows the building lettering scheme, as referenced in the descriptions below (see Appendix B for the preliminary elevation drawings for the proposed buildings). Building materials will comply with the UCR Campus Design Guidelines. The exterior of the residential and accessory buildings will feature brick, stucco, cement board, prefinished metal panels, glass, and wood. The exterior of the parking structure will feature concrete, stainless steel cables, and some precast decorative panels.

Residential Buildings

The five residential buildings (Buildings B, C, D, G, and H) would be arranged on terraces around a series of connected plazas. The buildings would be five stories tall, with an average height of 55 feet. In response to existing site topography, the proposed grading design incorporates split building pads that result in partial basements and four-story elements for some buildings. Individual building footprints would range from 7,475 to 13,850 square feet, accommodating 140 to 188 beds per building. The residential buildings would have two- and four-bedroom apartments, with common living and kitchen facilities for each suite. Four additional beds would be provided for professional staff (such as resident directors or faculty in residence). Stepped grades, elevators, ramps, and stairs would be incorporated into the design to facilitate movement within and between buildings.

Roof-mounted solar water heating units are proposed for the residential buildings. The equipment, which has a low profile, would be screened by parapets that would be incorporated into the proposed building design.

Two emergency generators are proposed to provide back-up power for safety lighting at the residential buildings and the parking structure, as well as the refrigeration equipment in the Food Emporium. One generator (250 kilowatts, with a 472-gallon fuel tank) would be located near the northeast corner of the parking structure, and the other (400 kilowatts, with a 898-gallon fuel tank) would be located near the southwest corner of Building C. Generator size and fuel storage volumes are based on a 24-hour backup time. Commercially available integrated generators with double-walled subbase fuel tanks and sound-attenuated weatherproof housings would be installed. The units would be situated within enclosures constructed of concrete masonry units. These enclosures, which would be 10 feet tall, would have 4 feet of metal louver material above the concrete, for a total height of 14 feet.

Resident Services Office

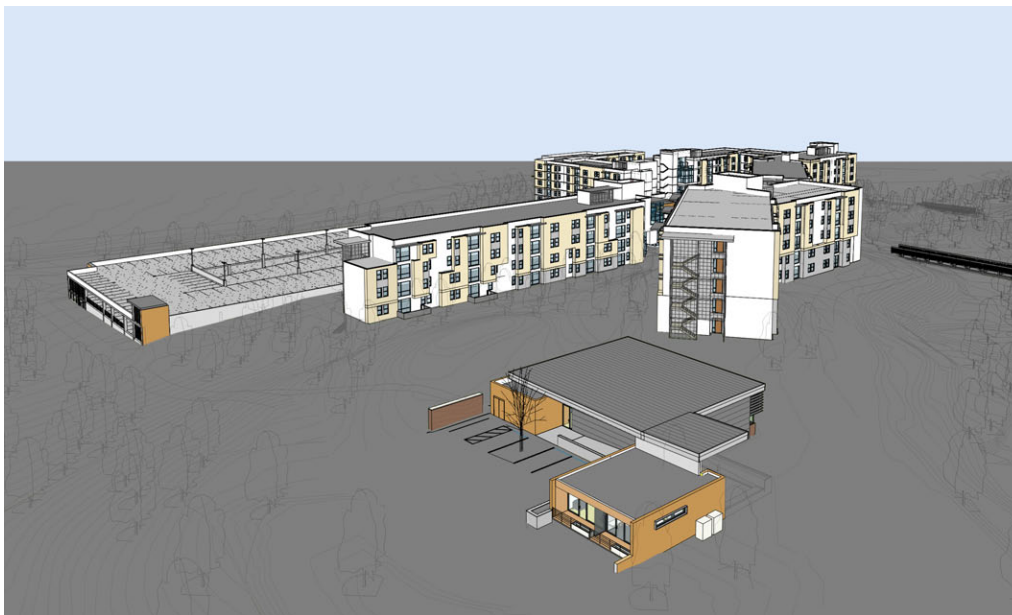
The Resident Services Office (Building E) would be located in the center of the site, at the arrival court. This facility would house reception and administrative support spaces (including resident services staff, resident life staff, and conference staff) as well as resident mailboxes. This building



Figure 2-3
Project Site Plan and Landscape Plan
Glen Mor 2 Student Apartments



Oblique view as seen from southwest



Oblique view as seen from northeast

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would be 30 feet tall (two and a half stories), with a footprint of 5,575 square feet and an overall area of 11,500 square feet (4,520 assignable square feet). The building would be accessible from multiple levels on the terraced site.

Community Building

The Community Building (Building F) would provide meeting rooms, fitness facilities, an academic resource center, laundry and vending services, and an outdoor pool for use by residents of the surrounding residential precinct. Centrally located, this building would have two levels (with an overall height of 32 feet) and 5,540 square feet of gross floor area (3,825 assignable square feet). The building footprint would be approximately 3,010 square feet. The building would be accessible from the lower level, at the pool deck, and the upper ground-floor level of the adjoining residential building (Building G).

Food Emporium

The Food Emporium (Building A) would provide café-style food service along with limited convenience retail services in a single-story structure at the southwest corner of the site. The 7,960-square-foot facility (4,600 assignable square feet) would serve not only the on-campus community but the off-campus community as well.

Executive Retreat

The Executive Retreat is proposed in the vicinity of the existing single-family residence on the project site. The existing vacant structure would be demolished as part of the project. The proposed one-story Executive Retreat, approximately 4,060 square feet (3,320 assignable square feet), has been designed to relate to the scale of the single-family residences in the off-campus neighborhood east of the project site. This facility would include a meeting room for campus retreats and meetings, accommodating up to 102 attendees. The structure would include two studio apartments (approximately 400 square feet each) for short-term use by visiting staff and faculty. Four parking spaces would be provided adjacent to the building.

Parking Structure

Project improvements would also include a new multi-level parking structure to serve student residents of the surrounding housing precinct. It would be constructed on the eastern portion of Parking Lot 14 and displace a portion of the existing landscape element along Big Springs Road. The structure would provide 597 parking spaces (primarily for residents)² and replace the 408 existing surface spaces within Parking Lot 14.

The proposed structure would provide parking on the ground level as well as the two decks above. The finished surface of the second deck would be 21 feet above ground level. The structure would be designed with three parking bays and a central ramp. Pole-mounted light fixtures (18 feet tall) would be provided along the center bay on the roof of the structure. A 200-kilowatt photovoltaic system is being considered for the roof of the parking structure. The proposed design would require multiple photovoltaic panels on 25- by 48-foot carport-like structures that would be supported on a single 14-foot-tall steel post. The stationary panels would be angled toward the southern exposure.

² Up to 18 spaces would be assigned to visitors.

With the photovoltaic system, the pole-mounted roof lights, discussed above, would be replaced with the integrated lighting on the underside of the panel structures. Illustrations of the proposed system are provided in Appendix C.

Arroyo Improvements

The Great Glen Arroyo defines the north boundary of the Glen Mor 2 project site. In accordance with LRDP objectives for this naturalistic open space feature, the project would include an enhancement program to improve the condition of the arroyo and integrate it into the overall aesthetic and functional design of the surrounding residential precinct, with two bridges providing a pedestrian connection between the project site and the existing student housing developments north of the arroyo. An illustration depicting the proposed arroyo improvements is provided as Figure 2-5. The proposed arroyo improvements would include the items outlined below.

- Bank stabilization at two locations along the north bank. Stabilization would entail the placement of rock or commercial stabilization materials, with soil overfill to accommodate planting. At the location closest to the easternmost bridge, the stabilization effort would encourage a shift in the stream flowline away from the northern arroyo bank and the engineered slope associated with the Glen Mor 1 apartments.
- Recontouring of the north bank, from the downstream project limits to the shorter of the two new bridges.
- Removal of exotic plant species and revegetation to create an arroyo zone that would be representative of ephemeral riparian features in this region. Vegetation removal would include the removal of eight trees (palms, other nonnative species, and dead trees). The restoration plan would include a buffer zone with native upland plantings adjacent to the arroyo and a transition zone beyond, incorporating native plant species in the traditional landscape elements at the interface with the residential developments. The arroyo has four reaches, which are defined by existing topography and vegetation. A specific planting program has been developed for each reach. Appendix D includes the proposed planting palettes for the arroyo, the buffer zone, and the development transition zone.
- Two bridges to accommodate pedestrian circulation. With these bridges in place, current foot traffic along the bottom of the arroyo would be eliminated. The proposed bridges would be supported on concrete abutments at the arroyo edge (four abutments total) and able to accommodate golf cart-type service vehicles.
- Culvert modifications, including an extension of the existing culvert at Valencia Hill Drive, removal of the culvert and fill associated with the existing path within the arroyo north of Lothian Hall, and the clearing of accumulated debris and sediment at the existing culvert at the downstream limits of the project.
- A water quality feature and associated outlet adjacent to the south bank at the shorter bridge.

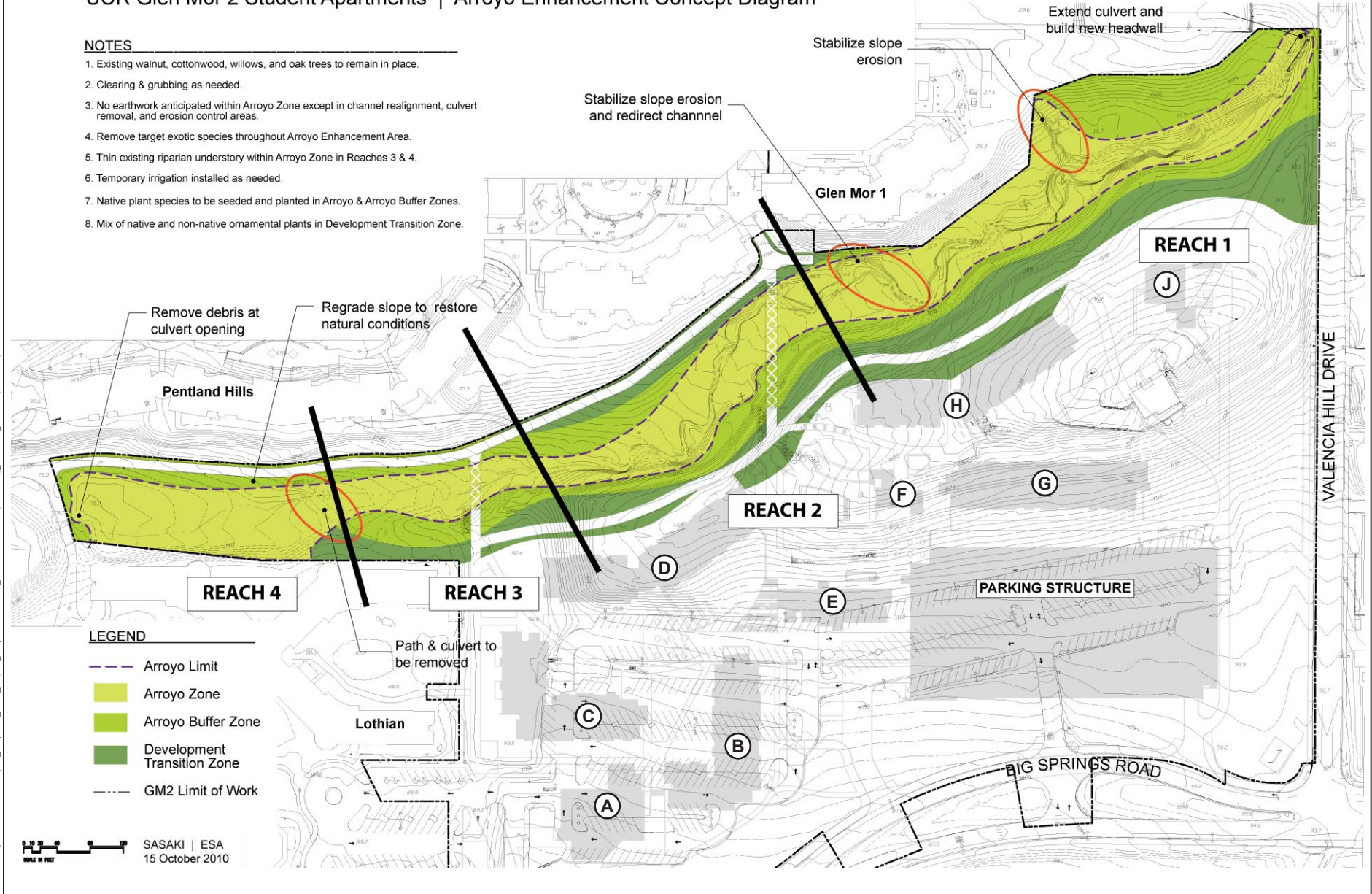
Access and Circulation

The access and circulation plan for the project, shown in Figure 2-6, considers pedestrian movement, emergency/maintenance access, and parking access. Pedestrian movement would be accommodated by a network of walks and plazas throughout the site, including two pedestrian bridges across the arroyo. Emergency/maintenance access would be accommodated by a perimeter drive; however, emergency/maintenance personnel may also use elements of the pedestrian network. Access to the parking structure would be provided from two locations on Big Springs Road, one off the arrival court at the west end of the structure and the other at the southeast corner (an entry-only access point). Associated improvements would include modifications to the median along

UCR Glen Mor 2 Student Apartments | Arroyo Enhancement Concept Diagram

NOTES

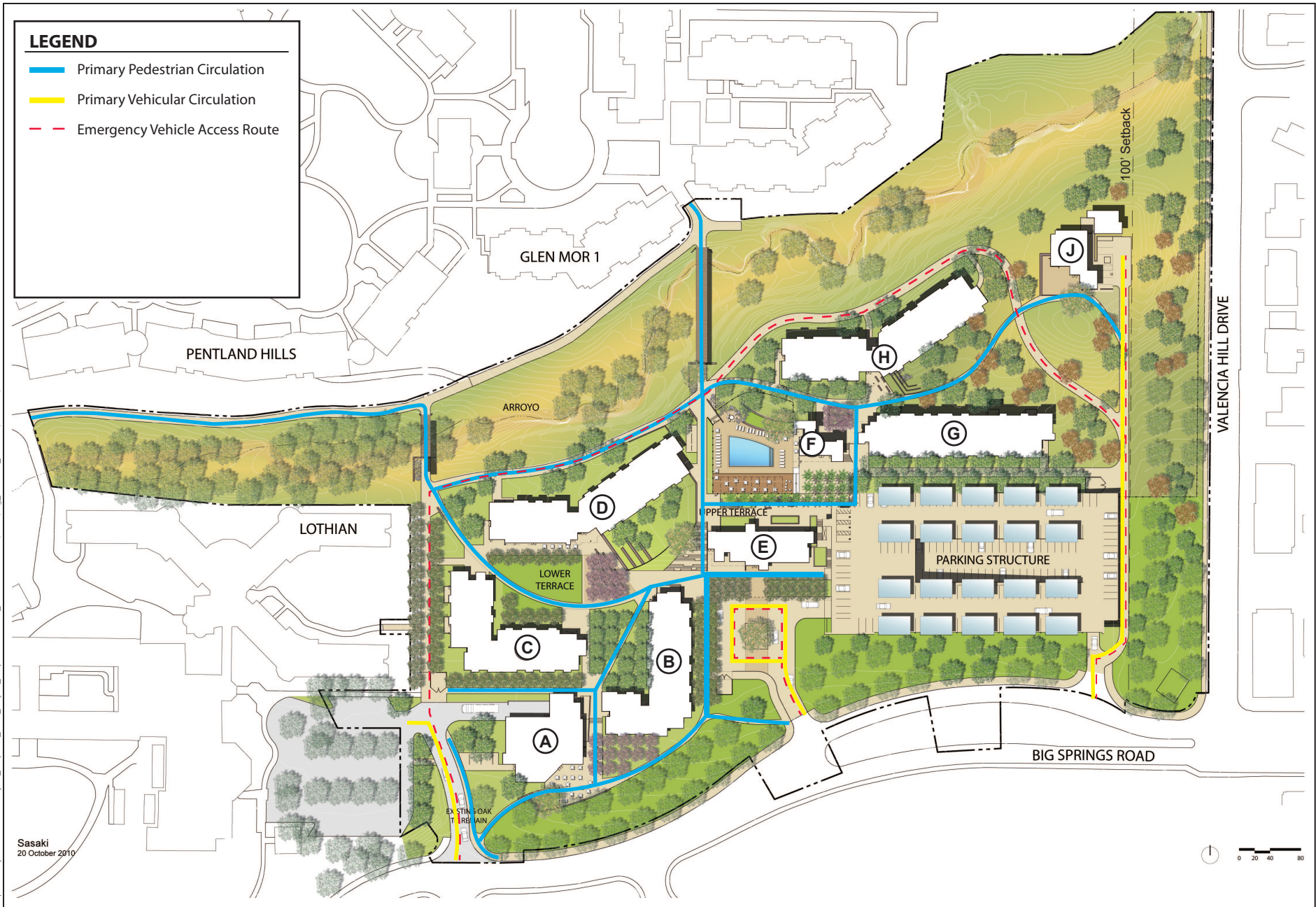
- Existing walnut, cottonwood, willows, and oak trees to remain in place.
- Clearing & grubbing as needed.
- No earthwork anticipated within Arroyo Zone except in channel realignment, culvert removal, and erosion control areas.
- Remove target exotic species throughout Arroyo Enhancement Area.
- Thin existing riparian understory within Arroyo Zone in Reaches 3 & 4.
- Temporary irrigation installed as needed.
- Native plant species to be seeded and planted in Arroyo & Arroyo Buffer Zones.
- Mix of native and non-native ornamental plants in Development Transition Zone.



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Figure 2-5
Proposed Arroyo Improvements
Glen Mor 2 Student Apartments



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Figure 2-6
Access and Circulation Plan
Glen Mor 2 Student Apartments

the on-campus segment of Big Springs Road. These improvements would close the existing opening at the exit from Parking Lot 14 and shorten the western end of the median to accommodate left turns at the arrival court.

The existing driveway at the west end of Parking Lot 14 would be modified slightly to improve access to the Food Emporium's service areas. While the intersection with Big Springs Road would not be altered, the adjusted alignment of the driveway would result in the removal of 16 parking spaces, leaving 62 spaces in the retained section of Parking Lot 14.

The existing driveway on Valencia Hill Drive would be eliminated. Vehicular access to the Executive Retreat would be accommodated from a new limited-access driveway parallel to Valencia Hill Drive, located outside the 100-foot setback. In response to comments received in community meetings and from the City, a curbside sidewalk and wrought-iron fence would be provided along the campus frontage on Valencia Hill Drive. The proposed layout would extend the recently completed fence around the Glen Mor 1 recreational fields, with the intent of reinforcing student respect of the community interface while continuing to accommodate community access to campus amenities by way of the campus entrance at Valencia Hill Drive and Big Springs Road.

Landscaping

In addition to the arroyo improvements described above, site landscaping would be included along the streetscapes and within the housing site, as shown above in Figure 2-3. The streetscape along the Valencia Hill Drive frontage would include a 100-foot (minimum) landscape buffer with tree plantings of mixed species, retaining the turf groundcover at the campus entrance and transitioning to shrubs and native grasses at the arroyo interface. The existing formal double row of ash trees, as well as turf, would remain in place along the Big Springs Road frontage, west of the new parking structure. Between the parking structure and Big Springs Road, a single row of ash trees would be retained, with a dense backdrop of mixed evergreen trees to provide year-round screening. A turf groundcover treatment would be retained in this section of the Big Springs Road frontage.

The housing site area would receive traditional treatments, incorporating both landscape and hardscape elements. Landscape treatments would include trees, shrubs, turf, native grasses, and groundcover plantings consistent with the UCR Campus Design Guidelines. Hardscapes would include concrete paving, unit paving, and hardwood decking within gathering areas.

2.4.2 Project Construction

Construction is scheduled to begin in Summer 2011, with units ready for occupancy in Fall 2013. Construction would commence with a demolition phase, during which time the existing residence would be removed. At that time, most of the existing vegetation on the site (outside the arroyo boundaries) would also be removed. Figure 2-7 depicts the location of existing trees and identifies those to remain and those to be removed. A total of 121 trees outside the arroyo would be removed.

With the initial site preparation complete, the contractor would proceed with grading. Geotechnical investigations in support of the project design have identified soils on the site that, under existing conditions, would be unable to support appropriate foundations for the proposed facilities. The project design team has determined that these soils could be reworked on the site through a process called overexcavation and recompaction to create conditions suitable for project foundations. Given the current understanding of site soil conditions, it is estimated that up to 88,000 cubic yards of soil would be reworked on the site.

The bridges over the Great Glen Arroyo would be supported on concrete abutments at each end of the bridges (four abutments total). Each abutment would require drilling for two supporting piers (eight piers total). Cranes would place the pre-fabricated bridges on the abutments. All work could be conducted from the upland areas outside the defined arroyo boundaries. A limited amount of arroyo improvement work is proposed in and adjacent to the stream channel. None of this work would be conducted when flowing water is present in the channel.

Because of the time required for construction of the parking structure, the design team proposes that initial site grading take place in this area. Construction of the parking structure would then proceed concurrently with the balance of the site grading. Once the parking structure is completed, the project contractor would use the structure for employee parking and equipment staging, to the extent feasible, with temporary noise attenuation measures (such as temporary closure of openings in exterior walls that are oriented toward sensitive receptors) incorporated.

Construction would require a wide assortment of heavy equipment. Inventories of the equipment required for each phase of construction are presented in Appendix E. The air quality analysis also provides a detailed characterization of the vehicle trips associated with the construction phase, including trips associated with disposal of excess soil material (estimated at 30,000 cubic yards). Excess soil would be transported and stockpiled on campus lands at the northeast corner of Martin Luther King Boulevard and Canyon Crest Drive for use as fill material on future on-campus projects. The campus has defined a haul route, which would proceed west through the campus, then continue along Linden Street and Iowa Avenue to Martin Luther King Boulevard. This same route would be used for all construction deliveries.



Several limited elements of project construction (i.e., demolition of the on-site residence, the extension of the culvert at the upstream end of the arroyo, and construction of the proposed sidewalk and fence along Valencia Hill Drive) may entail use of Valencia Hill Drive. The design team construction management specialist indicates that remediation and demolition activities involving the existing residence would span a timeframe of two weeks, with a maximum of 4 to 5 truck loads of debris removed per day. Construction traffic would use Valencia Hill Drive north of the existing barricades and Watkins Drive, west of Valencia Hill Drive. The culvert extension will entail a partial closure of the adjacent limits of Valencia Hill Drive for a portion of one day to accommodate staging of concrete pumping equipment and maneuvering of the culvert extension into place. Additionally, the provision of natural gas service to the project would entail trenching work within Valencia Hill Drive by the Southern California Gas Company. This may entail a temporary lane closure on the southern portion of Valencia Hill Drive.

2.5 Relationship to 2005 LRDP and LRDP EIR

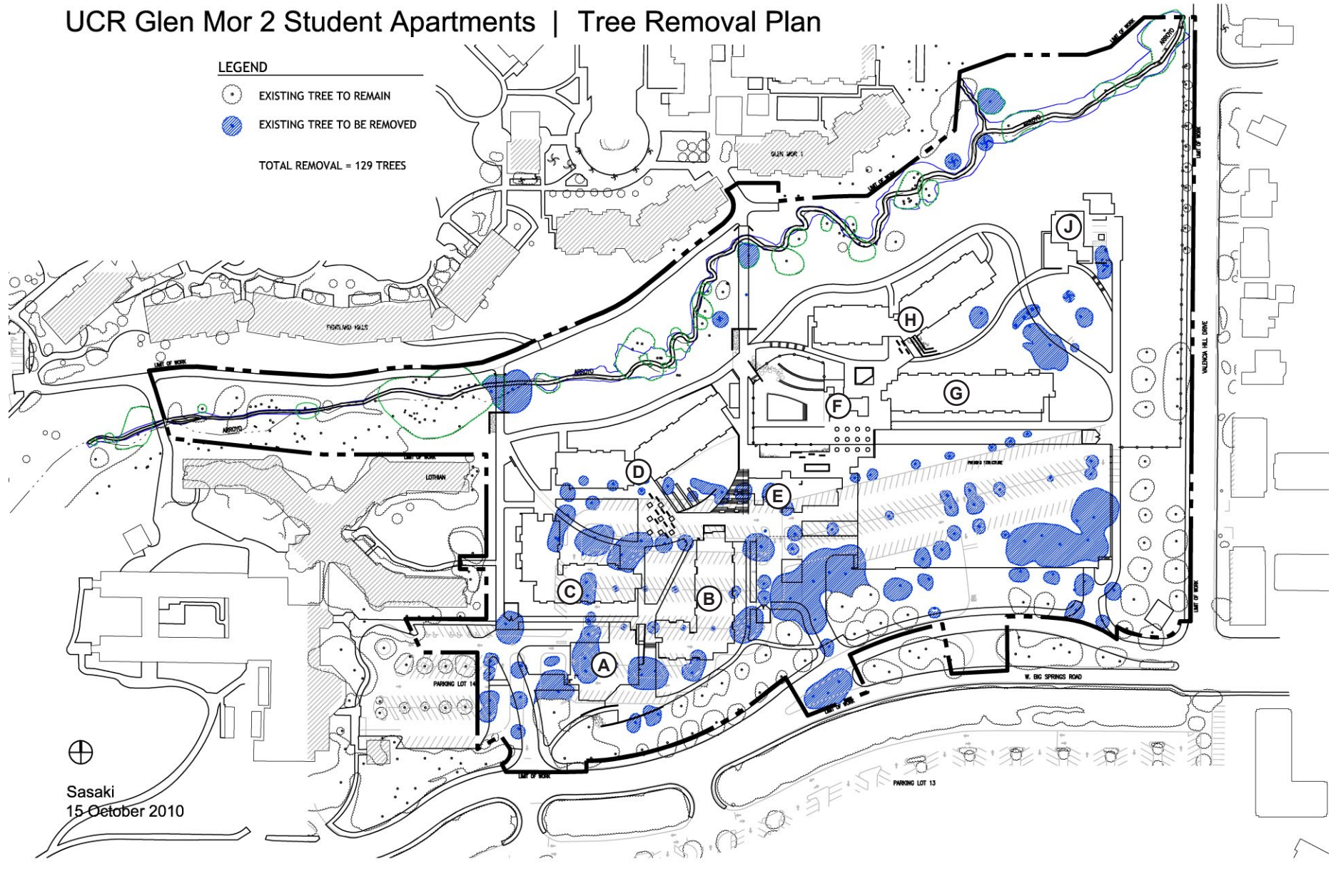
California law requires all University of California campuses to prepare an EIR for LRDPs to define the “physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education” (PRC Section 21080.09). UCR’s 2005 LRDP projected an increase in campus attendance through planning year 2015/2016, along with campus development to accommodate that increase. UCR prepared a program EIR to analyze the environmental effects of the 2005 LRDP (State Clearinghouse No. 2005041164). The LRDP EIR was certified by The Regents on November 17, 2005, the same day The Regents adopted the 2005 LRDP.

UCR Glen Mor 2 Student Apartments | Tree Removal Plan

LEGEND

-  EXISTING TREE TO REMAIN
-  EXISTING TREE TO BE REMOVED

TOTAL REMOVAL = 129 TREES



Sasaki
15 October 2010

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Figure 2-7
Tree Removal Plan
Glen Mor 2 Student Apartments

The 2005 LRDP projects an enrollment of 25,000 students for the 2015/2016 academic year. As stated above, the 2005 LRDP identified a goal of housing 50 percent of student enrollment in on-campus or campus-controlled housing. The latest student population is approximately 20,750 (according to fall 2010 statistics), which is consistent with the projections contemplated in the 2005 LRDP and EIR. Considering the enrollment increase projected to occur by 2015, the 2005 LRDP estimated that an additional 8,621 beds would be required to meet the campus housing goal by that planning horizon. Since adoption of the 2005 LRDP, the campus has constructed housing to provide approximately 500 beds in apartment-style accommodations (Glen Mor 1) and acquired two apartment complexes on Canyon Crest Drive near Linden Street, providing another 660 beds in the Falkirk complex (416 beds) and the Oban complex (244 beds). With the proposed Glen Mor 2 project, the total campus housing inventory would be 6,180 units, increasing the on-campus housing inventory to a level that would accommodate 30 percent of the student population compared with the current 26 percent (based on Fall 2010 enrollment). The scale and timing of this proposed housing development is consistent with that contemplated under the LRDP EIR.

The LRDP EIR analyzed the impacts of implementation of the 2005 LRDP on a programmatic basis, with recognition that long-term implementation of the campus-wide program would be subject to subsequent reviews to (1) assess site-specific impacts of better defined individual construction projects, (2) verify incorporation of the program-level mitigation measures adopted for the LRDP EIR, and (3) evaluate any changes in project definition, location, or setting from those assumed in the LRDP EIR. The EIR for the Glen Mor 2 Student Apartments Project has been prepared as a tiered document under the LRDP EIR. It examines the project in the context of the LRDP EIR, including its mitigation program, identifying areas where the project's environmental impacts are adequately covered by the programmatic analysis and mitigation measures presented in the program EIR and providing additional analysis of areas where project-specific analysis is needed to achieve proper CEQA environmental review for the project. In this regard, all applicable LRDP mitigation measures have been incorporated into the project, and the impact analysis assumes implementation of relevant LRDP mitigation.

2.5.1 2005 LRDP Planned Land Use and Proposed Amendment

The majority of the project site is designated for *Family, Apartment Housing and Related Support; Open Space*; and *Athletics and Recreation* uses under the 2005 LRDP Land Use Plan (Figure 2-8). A small portion of the site—the western portion of Parking Lot 14—is designated for *Residence Hall and Related Support*; this is associated with the adjacent Lothian residence hall. The type and general location of the housing proposed under the Glen Mor 2 Student Apartments Project is consistent with the existing *Family, Apartment Housing and Related Support* designation. Similarly, the arroyo restoration and Valencia Hill buffer aspects of the proposed improvements are consistent with the existing *Open Space* designation. The proposed parking use, the modifications within the western area of the existing Parking Lot 14, and the Executive Retreat use are considered support uses and allowed uses within the housing designation.

The *Athletics and Recreation* designation under the adopted LRDP is intended to serve recreational demand by students residing in the East Campus housing precinct. The proposed project would include an LRDP amendment to change the land use designation of the area (approximately 4.8 acres), which is currently designated *Athletics and Recreation*, to *Family, Apartment Housing and Related Support*.

2.5.2 Applicability of LRDP EIR Mitigation Program

The mitigation program presented in the LRDP EIR (Chapter D of the final EIR) presents the planning strategies (PS), programs and practices (PP), and mitigation measures (MM) that would apply to various campus undertakings during implementation of the 2005 LRDP. Some of these measures are broad administrative policies or planning goals that apply to strategic decisions about campus development, and some are more concrete practices or actions that must be accounted for or implemented when individual projects are undertaken. The discussion below summarizes the planning strategies, programs and practices, and mitigation measures that may be applicable to the project. A measure-by-measure evaluation of project conformance to the LRDP EIR Mitigation Monitoring and Reporting Program is provided in Appendix F.

- Planning Strategies – The proposed project would directly implement 2005 LRDP PS Land Use 4, which promotes the goal of housing 50 percent of students in campus-controlled housing, and conform to PS Land Use 7 by replacing surface parking with a parking structure. Project design would conform to PS Open Space 3 and Conservation 1, which call for protection of the remnant arroyos and native habitats, and PS Open Space 4 and Campus and Community 1, which call for landscaped buffers and general site design considerations at campus edges. While the proposed design entails removal of many of the existing trees on the site, the campus Landscape Architect has determined that the proposed removals are consistent with PS Conservation 1 and 2. The project would incorporate bicycle parking facilities and connections to existing pedestrian and bicycle routes pursuant to PS Campus & Community 4, Transportation 3 and Transportation 5. Resident parking permits will be restricted pursuant to PS Transportation 6.
- Programs and Practices – LRDP EIR programs and practices that are applicable to and included as part of the proposed project are identified in the individual analysis sections of this EIR and are summarized in Appendix F. These measures recognize established campus programs for considerations such as design development, contract award and administration, compliance with the numerous state and federal regulatory programs, expansion of campus-controlled housing opportunities, transportation demand management, energy conservation, water conservation, solid and hazardous waste management and minimization, sensitive resource avoidance and minimization, noise control, and public safety.
- Mitigation Measures – LRDP EIR mitigation measures that are applicable to and included as part of the proposed project are identified in the individual analysis sections of this EIR and summarized in Appendix F. These measures relate to project design and contracting practices, air emission minimization provisions in construction contracts, avoidance and minimization of impacts on sensitive wildlife resources, compliance with regulatory programs governing jurisdictional waters and wetlands, energy conservation, transportation system improvements, transportation demand management, public service/utility adequacy, and public safety considerations in project design and construction. For purposes of EIR analysis, implementation of these measures is assumed as part of the project.

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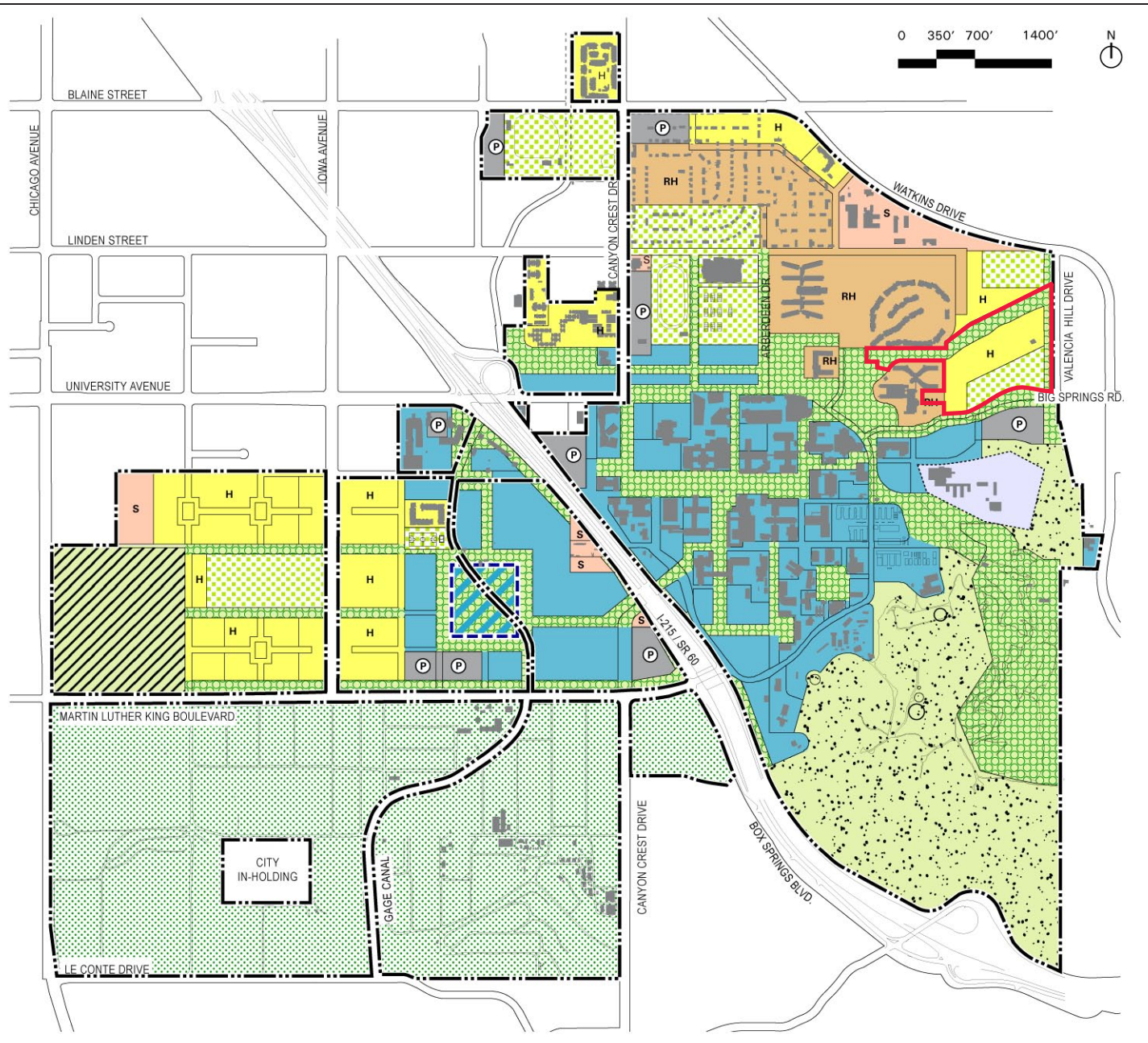


Figure 2-8
2005 LRDP Land Use Plan
Glen Mor 2 Student Apartments

Chapter 3
Environmental Setting, Impacts, and Mitigation

3.0 Introduction to the Environmental Analysis

Sections 3.1 through 3.14 of Chapter 3 of this EIR present the analysis of potential environmental effects that could result from implementation of the project. Each section is dedicated to one of the environmental issue areas outlined in Section 3.3.5 of the 2001 UC CEQA Handbook, which are based on Appendix G of the State CEQA Guidelines. The State CEQA Guidelines have been updated since publication of the UC CEQA Handbook, and all updates to environmental analysis requirements have been incorporated into this EIR. For each issue area, the respective section includes an overview of existing conditions, an analysis of the type and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid any significant environmental impacts identified in the respective sections.

3.0.1 Scope of the Environmental Analysis

As discussed in Chapter 1, this EIR tiers off of the LRDP EIR, the latter of which provides a broad analysis of the environmental effects of implementing the 2005 LRDP and acknowledges that more focused CEQA environmental review will be necessary for many individual projects to be implemented pursuant to the 2005 LRDP. UCR determined that the Glen Mor 2 Student Apartments Project would require a project-level tiered EIR given the findings of the initial study to evaluate the project in the context of the impact analysis in the LRDP EIR. The initial study, which was included as part of the NOP, concluded that while some impacts were covered by the analysis and mitigation measures included in the LRDP EIR, many project-specific impacts were not covered in that previous document and will require additional analysis in a tiered EIR. The initial study identified certain impacts related to the following environmental issue areas that will need project-level analysis:

- Aesthetics
- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Mandatory Findings of Significance

This EIR provides a project-level analysis of these issues and other issues that arose during the scoping period discussed previously in Section 1.2.3.

Environmental impacts are analyzed in relation to the “baseline condition” of the project site and surrounding area, which is typically the physical condition that exists when the project’s NOP is published. The NOP for this project was published in July 2010; therefore, 2010 is the baseline year used for the majority of this environmental impact analysis. One exception is the traffic analysis, for which the baseline condition is the project’s anticipated opening year, 2013. This is an appropriate

approach because it allows a good estimate of traffic conditions as they would occur when the project is occupied and beginning to contribute to local traffic conditions. Using 2010 as a baseline condition for this analysis would not reflect realistic conditions and could present a skewed image of the project's actual impacts. The 2013 baseline conditions were estimated by adding the number of traffic trips to the 2010 volumes and assuming a 1.7 ambient annual traffic growth factor, which is based on the rate used in the traffic analysis in the LRDP EIR.

3.0.2 Format of the Environmental Analysis

Each section of this chapter is dedicated to one of the environmental issue areas listed above. Within each section, the analysis is divided into subsections (i.e., Environmental Setting, Regulatory Framework, and Impact Analysis).

The Environmental Setting portion of these sections establishes the baseline condition against which project-related impacts are compared. The Regulatory Framework sections summarize the regulations, plans, policies, and laws that are relevant to the respective environmental issue area. The Impact Analysis sections present the methodology of the respective analyses, thresholds used to identify significant impacts, and a discussion of the impacts resulting from project implementation, including a brief summary of the impacts that were scoped out of further review in the EIR pursuant to the NOP. These sections also list the relevant planning strategies, programs and practices, and mitigation measures from the LRDP EIR, implementation of which is assumed in the impact analysis. Each impact analysis section also includes a discussion of the cumulative impacts that may occur with respect to each environmental issue area and the project's potential to contribute to those cumulative impacts, as described below.

3.0.3 Campus Population Assumptions

Where impact analysis in this EIR requires consideration of campus population without and with the project, the analysis assumes the project would increase student population by 810 students because the proposed student apartments would provide 810 beds. This is a conservative assumption, as it is reasonable to assume that some proportion of the initial Glen Mor 2 residents will come from the existing student body.

Because the campus population also consists of faculty and staff, an increase in student enrollment entails a commensurate increase in the number of faculty and staff positions. Campus statistics for Fall 2010 (20,746 students; 4,294 faculty and staff) indicate there are currently approximately 0.2 faculty and staff positions for each student. In comparison, the LRDP EIR considers a faculty and staff ratio of 0.4 per student. For an increase in the campus population of 810 students, this then suggests associated growth in faculty and staff ranging from 162 to 324 positions.

It is also important to remember that this growth in student, faculty, and staff is entirely consistent with the projections set forth in the LRDP, and this project would not represent or induce growth beyond that anticipated in the LRDP EIR analysis.

3.0.4 Cumulative Impact Analysis Introduction

Section 15130 of the State CEQA Guidelines provides guidance for analyzing cumulative impacts, which are defined as the impacts of a project that may not be considerable when viewed individually but that combine with the impacts of other projects to produce more substantial impacts on the

environment. According to this section of the State CEQA Guidelines, the discussion of cumulative impacts “...need not provide as great a detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness.” The discussion should also focus only on significant impacts resulting from the project’s incremental impacts and the impacts of other projects. If the environmental conditions would essentially be the same with or without the proposed project’s contribution, then it may be concluded that the impact is not significant. According to Section 15130(a)(1), “an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.”

Cumulative impact analysis may be conducted and presented by either of two methods: 1) listing past, present, and reasonably foreseeable future project activities that produce related or cumulative impacts or 2) summarizing projections contained in an adopted general plan or related planning document that describe or evaluate regional or area conditions that contribute to the cumulative impact. The cumulative analysis presented in this EIR uses primarily the list method because the project area is primarily built out. The exception to this is the cumulative element of the operational traffic analysis, which was conducted using the projections method. For the traffic analysis, the projections method informed an ambient annual growth factor of 1.7 percent, which was applied to the studied circulation system to estimate future traffic levels. This factor is based on the rate calculated for the traffic impact study that was completed for the LRDP EIR, which was determined by analyzing SCAG modeling data from the vicinity of the campus. The LRDP Traffic Impact Study is included as Appendix H of the LRDP EIR.

List of Cumulative Projects

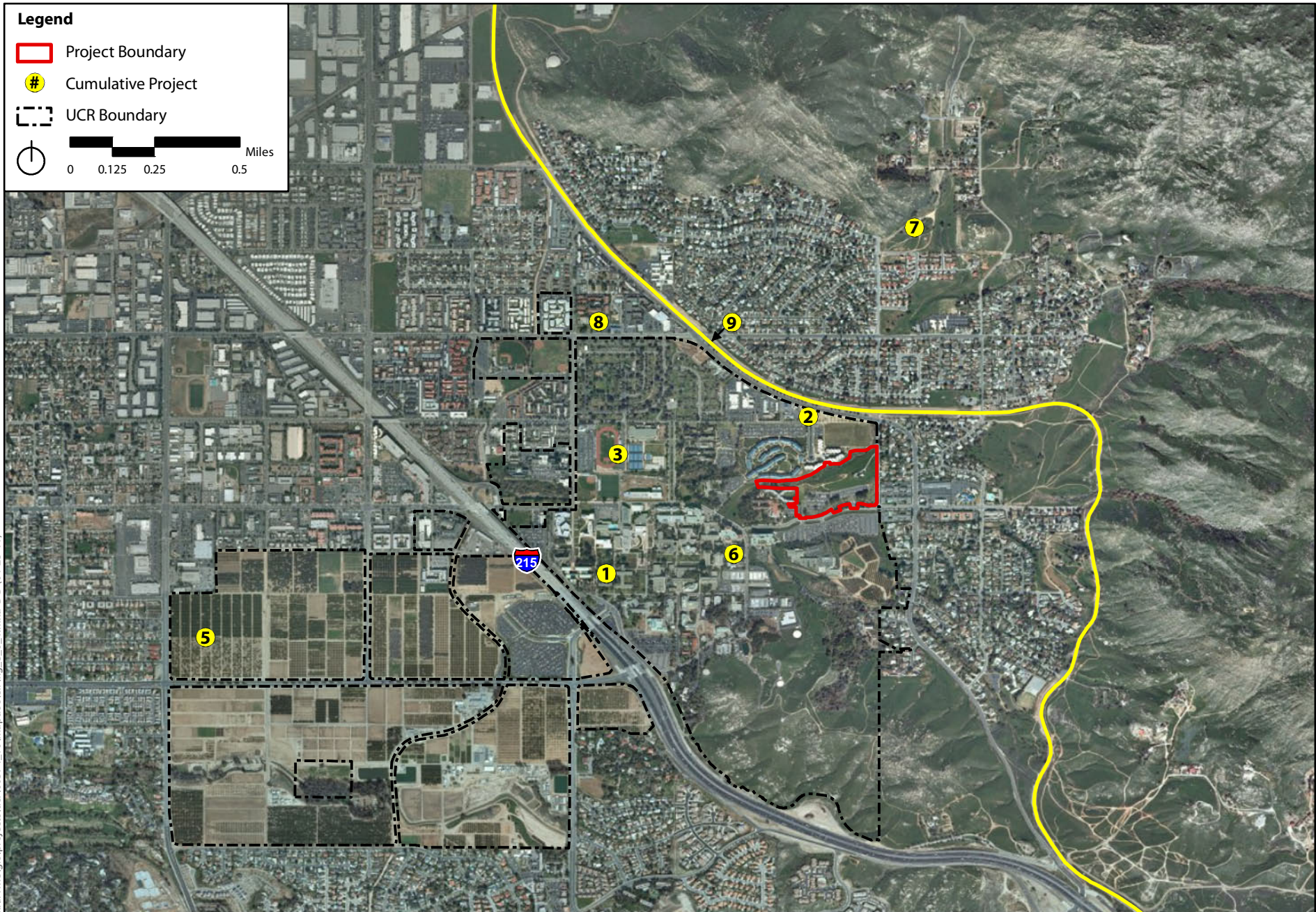
UCR reviewed an internal list of on-campus projects, consulted with the City, and conducted additional research to develop a list of cumulative projects for consideration in the impact analysis for this project. The cumulative projects are described below and shown in Figure 3.0-1, with numbers corresponding to the projects. Please note that project #4, the East Campus Infrastructure project, is not shown on the map because it is composed of many small projects throughout East Campus.

UCR Projects

1. The **Barn Project** is a three-phase redevelopment on the southwestern edge of the campus that is intended to create a dining and entertainment center for students and a pedestrian-based gateway between the East Campus and West Campus. The project entails renovation of, additions to, and relocation of existing structures on a 9-acre site associated with UCR’s origin as the University of California Citrus Experiment Station. New outdoor courtyards, patios, and pedestrian linkages would be constructed, along with a new facility for the KUCR student radio station. UCR is currently in the planning stages for the first two phases, which collectively include approximately 9,000 square feet of renovations/additions to existing structures, construction of a new 3,000-square-foot structure, and improvements to approximately 13,500 square feet of outdoor space. UCR is in the early stages of the CEQA environmental review process for the project, construction of which is currently anticipated to begin in the winter quarter of 2013 and last approximately 78 weeks.
2. **Environmental Health and Safety Expansion** entails relocation and expansion of UCR’s existing facility to store and handle chemical waste, biological and biomedical waste, and low-level radiation waste generated by on-campus instruction and research activities. The

Environmental Health & Safety (EH&S) facility also deals with materials and wastes related to general operation and maintenance of campus facilities, such as cleaning products, pool chemicals, batteries, electronic waste, and light bulbs. The existing EH&S building, located in the southern portion of the campus, south of South Campus Drive and east of Interstate 215, would be renovated for use by the UCR Mail Services and Printing and Reprographics departments. A new building would be constructed on an approximately 2.7-acre site on the northeastern portion of the campus. The proposed project site is bounded by Watkins Drive on the north, Linden Street and the Glen Mor 1 recreation fields on the south, and the existing Transportation and Parking Services (TAPS) area on the west. The project would provide a consolidated 30,089-gross-square-foot facility for all EH&S functions, including administration, safety, training, and hazardous materials assessment, mitigation, and storage. The primary campus access route for pedestrians and visitors would be from the south, along Linden Street. The main building entry would be at the intersection of Linden Street and Pentland Way at a controlled lobby. Vendor access to the secure EH&S yard area would be from Watkins Drive, and authorized EH&S employee access would be from Linden Street. UCR is in the early stages of the CEQA environmental review process for the project. Construction is currently anticipated to commence in December 2012 and last 18 months.

3. The **Student Recreation Center Expansion** entails renovating, expanding, and improving the on-campus student recreational facility located south of Linden Street and west of Aberdeen Drive. The existing main building would be renovated and expanded by approximately 2,800 square feet to the northwest, with a new building of approximately 66,420 square feet constructed south of the existing building and linked by a pedestrian bridge. An outdoor pool would be constructed adjacent to the new building. The new building and pool would be constructed on an area with a recreational field and outdoor tennis courts, the latter of which would be relocated south of the project. UCR is in the early stages of the CEQA environmental review process for the project, which is currently anticipated to begin construction in fall 2012. New construction is estimated to last 16 months, and remodeling will require another 4 months (the two stages would not be concurrent).
4. The **East Campus Infrastructure, Phase 2** project entails installing new infrastructure and upgrading existing infrastructure to improve electrical service, heating capacity, chilled water capacity, and utility distribution for a portion of East Campus west and southwest of the Glen Mor 2 project site. Improvements include installing new boilers, chillers, and pumps; extending piping; and laying new electrical circuits in existing duct banks. A Mitigated Negative Declaration (MND) was prepared for the project. The MND identified significant impacts related to geology/soils and transportation/traffic that would be reduced to a less-than-significant level by incorporating mitigation measures. The geology/soils impacts were related to improvements to the satellite chiller plant, located approximately 0.3 mile southwest of the project site. Seismic hazards and the potential for liquefaction and deep-seated landslides would be avoided by implementing measures stated in the LRDP EIR and following recommendations specified in prior geotechnical investigations. The transportation/traffic impact was identified because of the temporary loss of parking at on-campus lots, none of which are near the Glen Mor 2 project site. These impacts are location specific and have no bearing on Glen Mor 2 impacts. This project does not have the potential to result in any other cumulative impacts to which the Glen Mor 2 project would contribute. The project, which was approved in November 2010, is anticipated to start construction in spring 2011.



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Source: Riverside County 2007



Figure 3.0-1
Cumulative Projects Map
Glen Mor 2 Student Apartments

5. The **UCR School of Medicine** project proposes development of a new 400-student medical school on a 38.7-acre site located at the northeast corner of Iowa Avenue and Martin Luther King Boulevard, approximately 1 mile southwest of the project site. The current development program proposes a medical administration and education building, medical research laboratories, medical offices, surface parking and a parking structure, and other associated buildings. Buildout of the school is anticipated to occur over time, potentially reaching full buildout by 2025. In November 2010, UCR released an NOP for an EIR that will analyze the effects of amending the 2005 LRDP to incorporate changes in land use designation for the UCR School of Medicine project area.¹ This EIR will provide a programmatic analysis of this development, but the project-level impacts on the physical environment will be determined through subsequent EIRs at a later date. Initial construction of the School of Medicine facilities is not anticipated for several years, with the specific schedule unknown at this time.
6. The **Health Sciences Teaching Center** project consists of renovating and reconfiguring the existing Computer Statistics Building, which is located along East Campus Drive, southwest of the Glen Mor 2 site, to accommodate interim School of Medicine programs. The renovation will consist of remodeling 24,751 assignable square feet of space, along with a seismic retrofit of the building and an upgrade of the building's primary utilities. A small 310-square-foot expansion to the entry and lobby area is included, and the exterior landscaping will be renewed. The changes will result in an ultimate reduction in the building's assignable square footage and the building's anticipated occupancy. The project is categorically exempt from CEQA because it entails a minor alteration of an existing facility, and no significant environmental effects would result from project construction or operation. Renovation work is anticipated to occur between March 2011 and July 2012.

In addition to these projects, UCR has identified other prospective future projects whose implementation is uncertain because of a lack of funding. These include the Engineering Building Unit 3 Project, the West Campus Professional and Graduate Center Phase 1 Project, and the West Campus Infrastructure Improvements. Because of their uncertainty or lack of progress to date, these projects will not be considered in the cumulative impact analysis in this EIR.

City of Riverside Projects

The City identified two cumulative projects within a 1-mile radius of the project site, which are listed below.

¹ The official project title associated with this NOP is UC Riverside LRDP Amendment 2. In addition to the land use changes to incorporate the 38.7-acre precinct planned for the UCR School of Medicine, this LRDP amendment will revise the land use map to 1) change the location of two future parking facilities and delete one parking facility in the West Campus academic core, 2) modify the West Campus's open space configuration, 3) extend the Northwest and Southwest Malls (also on the West Campus), and 4) incorporate previously approved land use amendments, including the revisions associated with the Glen Mor 2 project. Several text changes are also proposed, including extending the LRDP horizon year to 2020/2021, increasing the maximum square footage accommodated in the LRDP, providing design criteria for the UCR School of Medicine precinct, updating transit program discussions, updating the discussion of University of California and UCR sustainability policies, allowing retail and office uses within on-campus parking structures, and updating the Resource Conservation and Environmental Stewardship section. None of the changes to the land use map or the LRDP text proposes physical development, and none would have a considerable effect on the physical environment that would relate to the Glen Mor 2 project's impacts. Therefore, they are not considered in the cumulative analysis presented in the Glen Mor 2 EIR.

7. An **eight-lot residential subdivision** of a 20-acre parcel in the Residential Conservation zone (Planning Case P07-0508, Tentative Tract Map 34345), accessed via an extension of Celeste Drive and located approximately 0.75 mile north of the project site, with 13.25 acres dedicated as Open Space. The project proposes subdivision and construction of the on-site roadway extension but would not grade pads or construct homes until sometime in the future, as determined by residential market forces. A MND was prepared for the project and adopted by the city council on December 4, 2007. This project is temporarily on hold, and the construction schedule is unclear. The MND identified significant impacts related to biological resources, land use, and noise, all of which would be reduced to a less-than-significant level by incorporating mitigation measures. Impacts on California gnatcatcher would be mitigated by paying the Multiple Species Habitat Conservation Plan (MSHCP) fees required by the county. Impacts on nesting raptors would be mitigated by conducting bird surveys in on-site trees prior to any construction activity proposed during the breeding season. Construction noise impacts on nearby residences would be mitigated by complying with the restrictions pertaining to hours in the City Noise Ordinance. Finally, impacts on a 100-foot easement for a Department of Water Resources pipeline would be mitigated by directing drainage from future residential pads away from the easement. With the exception of the biological resources impacts, these impacts are site-specific and would not combine with potential impacts of the proposed project because of the subject site's distance from this subdivision. Because the project is consistent with growth projected in the City General Plan, the project would not contribute to cumulative increases in traffic and associated noise and air quality impacts. Furthermore, it is not likely that the timing of the construction of the subdivision pads and homes would overlap with construction of the Glen Mor 2 project. The City project would, however, cause an incremental increase in demand for public services, including police and fire protection, and a similar increase in utility demands, and these will be considered in the cumulative analysis of the proposed project.
8. A **55-unit multi-family residential project** (Planning Case P09-0717 and 0718) located approximately 0.75 mile northwest of the project site at 807 Blaine Street. The project entails demolishing an existing but vacant child day care facility on the site and constructing one 55-unit multi-family residential building with surface parking and outdoor common areas. An MND was prepared for the project and adopted by the city council on April 6, 2010. The construction schedule is unclear for this project. The MND identified one significant impact: interior noise levels exceeding established thresholds due to the site's proximity to the active Burlington Northern Santa Fe railroad tracks. Mitigation was identified to reduce this impact to a less-than-significant level, with the City requiring use of noise-reducing building materials. This impact is particular to this multi-family residential project and would not combine with any of the Glen Mor 2 impacts to cause cumulatively considerable impacts. Because the project is consistent with growth projected in the City General Plan, the project would not contribute to cumulative increases in traffic and associated noise and air quality impacts. However, several less-than-significant impacts identified in the MND will be considered in the cumulative analysis provided below. The City project would cause an incremental increase in demand for public services, including police and fire protection, and a similar increase in utility demands. Additionally, the MND concluded that this development was likely to be inhabited by UCR students because of its proximity to the campus and, as a result, indicated that the project may cause an increase in the number of cars parking on nearby streets. The construction schedule is currently unknown. Considering the current economic environment, this analysis assumes that construction will not overlap with Glen Mor 2 construction.

Other Regional Projects

9. The Riverside County Transportation Commission **Perris Valley Line** project is a 24-mile extension of commuter rail service in western Riverside County, from the existing Riverside downtown station to the cities of Moreno Valley and Perris. The proposed line would use the existing Burlington Northern Santa Fe and the San Jacinto Branch Line rail corridors, with a small span of new track constructed in the northern portion of the City to connect the two lines. The Burlington Northern Santa Fe line runs adjacent to Watkins Drive north of the Glen Mor 2 project site, continues on this alignment east of Valencia Hill Drive, and then turns toward the south in the foothills approximately 0.5 mile east of the site. This line would be rehabilitated as part of the project. Track improvements proposed in the vicinity of the Glen Mor 2 project site would include new ties and rails as well as new ballast. The project would also entail an increase in rail traffic on this line, identified as 12 additional trains per day. Impacts identified in the EIR that are near the Glen Mor 2 project site or otherwise relevant to the Glen Mor 2 project are hydrology/water quality impacts associated with construction work adjacent to the flood plain that flows down to Big Springs Road and noise and vibration impacts associated with the increased train traffic from operation of the project. The project would also generate noise and air pollutant emissions during project construction that may overlap with the Glen Mor 2 construction impacts. Construction of the Perris Valley Line is anticipated to begin in January 2012, with completion in June of 2013; a schedule specific to the work adjacent to Watkins Drive and in the hills east of the Glen Mor 2 project site has not been established (Rosso pers. comm.).

These nine projects and their potential to result in cumulative impacts to which the project may contribute have been considered in the analyses of cumulative impacts that appear in each section of Chapter 3.

Section 3.1

Aesthetics

3.1.1 Introduction

This section describes the affected environment and regulatory setting pertaining to aesthetics and describes the impacts on aesthetics that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts. The aesthetics analysis is based on various sources, including site visits, a photographic survey, the LRDP EIR, and other campus data sources.

During the August 25, 2010 scoping meeting, local residents expressed concern regarding proposed landform alterations and changes in views from off-campus areas. Such changes have been considered in the impact analysis provided in this section.

3.1.2 Environmental Setting

The LRDP EIR presents a detailed description of the campus in relation to the city of Riverside, describing the location and layout of the campus (e.g., East Campus and West Campus), the visual characteristics of the campus and surrounding areas, existing scenic vistas, off-campus views, and light and glare conditions. Please see section 4.1.2 of the LRDP EIR for a complete discussion of the aesthetic setting.

Setting and Visual Characteristics of the Project Site

The project site is located within the East Campus and bounded by Big Springs Road to the south, campus housing developments (Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills) and associated recreational fields to the north and west, and Valencia Hill Drive to the east. The project site is generally undeveloped, with the exception of Parking Lot 14 (an existing surface parking lot that occupies the southern half of the site); a small, vacant single-family residence; some electrical distribution lines and a pole; and a radio tower. The surrounding vegetation and topography generally obscure direct views of Parking Lot 14. Although the residential structure, electrical infrastructure, and radio tower sit atop a small hill, their scale does not make them dominant features of the project site. As such, the general visual character of the project site is defined by varying topography and natural features. The gently rolling topography combines with other natural features on the project site, including the arroyo, trees, bushes, and other vegetation, to establish the partially developed and natural open-space character of the site. The project site and its surroundings, with their partially developed and natural open-space character, exhibit moderate visual quality (see photos 1 through 4 in Figure 3.1-1).

Visual Characteristics of the Surrounding Area

The areas surrounding the project site include developed campus lands to the north, west, and south as well as off-campus single- and multi-family residential developments to the east, northeast, and southeast.

The general visual character of the on-campus areas surrounding the project site is defined by student housing uses and academic buildings, which are separated by surface parking lots and natural and landscaped areas. The general visual character of the off-campus areas surrounding the site to the east, northeast, and southeast is suburban in nature, with low-scale one-story single-family residential structures forming the predominant feature. In addition, two- and three-story multi-family residential structures are located near the southeastern portion of the site. These residential structures are set back from surrounding roadways and have heavily landscaped yards and perimeters. As a result, the natural vegetation and trees hide the structures. Overall, the general visual character of the areas surrounding the site is defined by low-scale development that is somewhat obscured by natural features, including mature trees and other vegetation.

As identified in the LRDP EIR, the Box Springs Mountains are the most prominent visual feature in the vicinity of the campus, with elevations ranging from approximately 2,200 to 2,800 feet above mean sea level to the east and up to 1,541 feet in the hills to the south. The Box Springs Mountains rise approximately 1,700 feet within 2 miles of the project site, which has an average elevation of approximately 1,100 feet. One segment of the Box Springs Mountains, located south of the project site, rises 300 to 500 feet above the surrounding ground plane and is visible from several off-site public viewing areas when looking toward the site.

Scenic Vistas

The LRDP EIR identified two types of scenic vistas: panoramic views and focal views. Recognition of scenic vistas in the LRDP EIR was limited to panoramic views of the Box Springs Mountains from publicly accessible viewpoints. For purposes of this EIR, scenic vistas also include focal views of the Carillon Tower from publicly accessible viewpoints because the Carillon Tower was identified in the LRDP as a visual landmark.

Scenic vistas are available along the western border of the project site when looking east (toward the Box Springs Mountains). In addition, views of the site and surrounding area (a segment of the Box Springs Mountains and the Carillon Tower) are generally available along Valencia Hill Drive. Two scenic vistas, described under “Key Observation Points,” below, were identified during the photographic survey.

Key Observations Points

Key observation points (KOPs) are project-specific viewpoints. KOPs identified during the photographic survey will be used to assess visual impacts. For this project, the assessment and selection of KOPs considered existing on- and off-site scenic vistas as well as the visual character and quality of the site and its surroundings. Figure 3.1-2 shows the location and “view cone” of four project-specific KOPs in relation to the project site.

KOP 1

KOP 1 is located at the southeast corner of Big Springs Road and Valencia Hill Drive, which is the primary eastern portal to the campus and the project site. The foreground of this view is currently occupied by a heavily landscaped surface parking area. Middleground and background views from this vantage point are constrained by tall, mature trees (see Photo 1 in Figure 3.1-3). This KOP is not



Photo 1 – Northern portion of the Project Site. The arroyo is in the foreground, and the vacant residential structure with the incongruent vertical form of the cellular tower are the primary anthropogenic elements in the middleground. The jagged silhouette of the Box Springs Mountains defines the view's background.



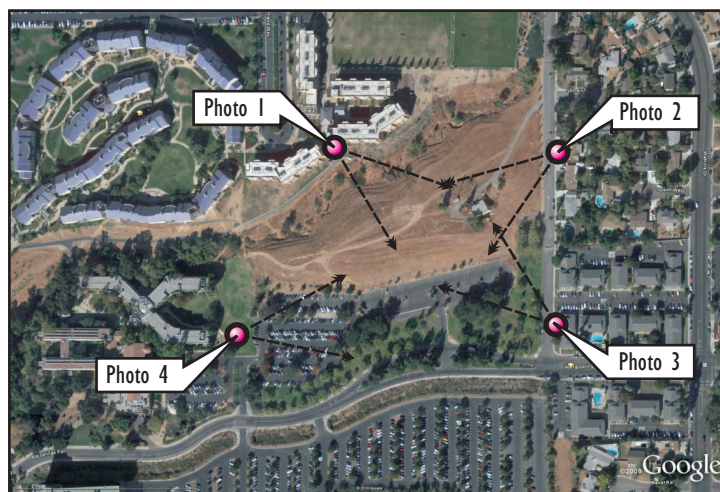
Photo 2 – Northern portion of the Project Site. Valencia Hill Drive is in the foreground, and the vacant residential structure with the incongruent vertical form of the cellular tower are the primary anthropogenic elements in the middleground. The jagged silhouette of the southeastern hills defines the view's background.



Photo 3 – Southeast portion of the Project Site. The landscape buffer with its mature trees is the dominant foreground feature. Parking Lot 14 is a discernable element beyond the extensive turf area. The middleground is dominated by the ridge that trends east-west through the center of the site and obscures background views from this vantage point.



Photo 4 – Southwest portion of the Project Site. Parking Lot 14 is the dominant feature of this view's foreground. The mature trees in the lot's planting areas obscure middleground views. The background is the jagged silhouette of the Box Springs Mountains.





Source: Google Earth Pro, Sasaki Associates, & ICF International



Figure 3.1-2
Key Observation Points Locator Map
Glen Mor 2 Student Apartments



Source: Sasaki Associates, ICF International

Photo 3: KOP 1 – Design Visualization of Project

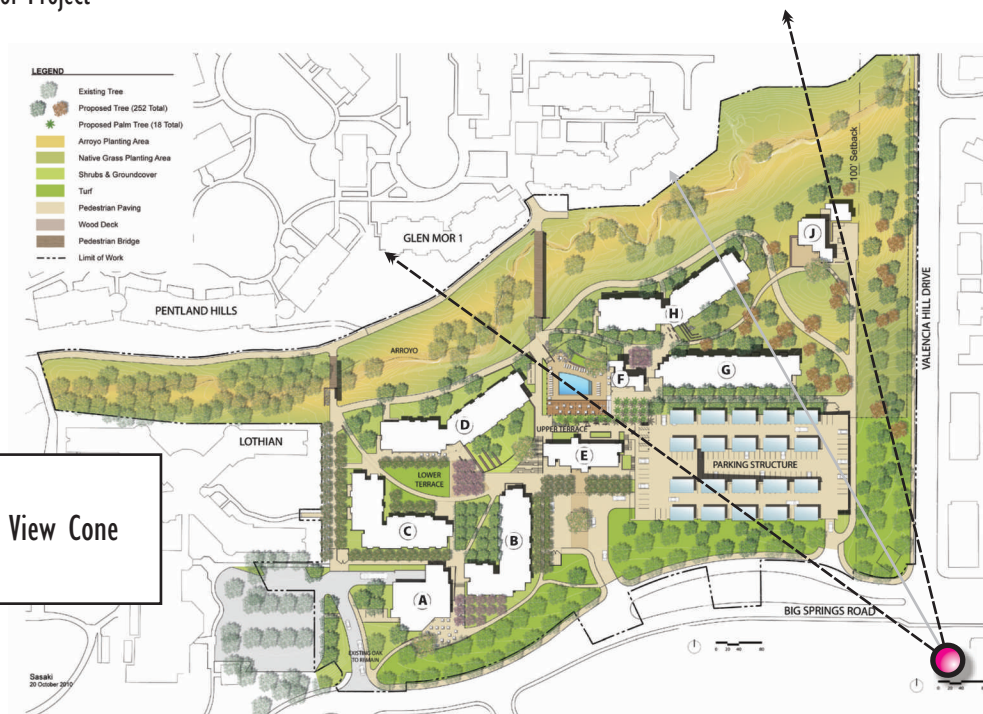


Exhibit I: KOP 1 – Viewshed and Project Perspective



Photo 2: KOP 1 – Camera Location



Photo 1: KOP 1 – Existing Visual Conditions

considered a scenic vista because of the absence of prominent visual features, such as the Box Springs Mountains or the Carillon Tower; however, the viewshed for this KOP generally represents the existing visual character and quality of the site and its surroundings.

KOP 7

KOP 7 is located in front of 3642 Valencia Hill Drive, a single-family residential structure that is representative of several of the available residential viewpoints along the southern half of Valencia Hill Drive. The foreground of this view is occupied by a roadway, hilly topography, existing vegetation and trees, an existing on-site residential structure, electrical distribution lines and a pole, and a radio tower. Middleground views are blocked by the knoll in the foreground of this view. A small portion of the ridgeline in the southeastern hills of the campus is visible to the southwest in the background of this view (see Photo 1 in Figure 3.1-4). This KOP is not considered a scenic vista because of the absence of prominent visual features, such as the Box Springs Mountains or the Carillon Tower; however, the viewshed for this KOP generally represents the existing visual character and quality of the site and its surroundings.

KOP 8

KOP 8 is located in front of 3592 Valencia Hill Drive, a single-family residential structure that is representative of several of the available residential viewpoints along the northern half of Valencia Hill Drive. The foreground of this view is occupied by roadways, a sidewalk, a mailbox, vegetation, hilly topography, and the Glen Mor 1 residential buildings. Middleground views include university buildings; however, the Carillon Tower is the prominent focal feature in the middleground of this view (see Photo 1 in Figure 3.1-5). This KOP is considered a scenic vista because it affords visual receptors focal views of the Carillon Tower, a prominent LRDP-identified visual landmark.

KOP 11

KOP 11 is located on a grassy area east of the southeast wing of Lothian Hall, which is representative of east-facing views from the western boundary of the project site. The foreground of this view is currently occupied by a heavily landscaped surface parking area. Middleground views are dominated by views of the Box Springs Mountains; background views are blocked by this dominant topographic element (see Photo 1 in Figure 3.1-6). This KOP is considered a scenic vista because it affords visual receptors panoramic views of the jagged silhouette of the Box Springs Mountains to the east.

Light and Glare

On-Site

The project site is partially developed with Parking Lot 14, a surface parking lot on Big Springs Road, and a vacant single-family residential structure. Parking Lot 14 is a source of on-site light and glare. Light and glare from parking lots is associated with light standards (used to illuminate the lots) and headlights on vehicles as well as reflections from car windshields. The single-family residential structure is vacant; therefore, it is not a source of light. Glare, in the form of light reflecting off of the structure's windows, is minimal.

Off-Site

Several sources of light and glare surround the project site. The Glen Mor 1 outdoor fields, located north of the project site, use stadium-style sports lighting. In addition, lights associated with academic buildings, research buildings, Parking Lot 13, student housing developments, and campus walkways are other existing sources of light and glare. Additional sources of light and glare in the existing setting include headlights on vehicles traveling on nearby roadways, reflections from car windshields, and reflections from residential structures just east of the project site.

3.1.3 Regulatory Framework

There are no federal, state, or local regulations pertaining to aesthetics that would be applicable to this project.

3.1.4 Impact Analysis

This section presents a discussion of the potential aesthetics impacts associated with construction and operation of the proposed project.

Methodology

For the purposes of this discussion, the analysis of scenic vistas considered both panoramic and focal views. Panoramic views provide visual access to a large geographic area that extends into the distance from a publicly accessible viewpoint, such as a road or a public gathering place. A focal view provides visual access to an identified landmark from a publicly accessible viewpoint. A substantial adverse effect on a scenic vista would occur if the project would result in substantial obstruction of a panoramic or focal view from a publicly accessible gathering place. For the purposes of this analysis, views from private property, including residences, are not considered scenic vistas. (Changes to those views are addressed as a change in visual character in Impact 4.1-2, below.)

Degradation of the visual character of the campus and its surroundings is evaluated by determining if a substantial adverse change would occur. This includes changes in land use, development of currently undeveloped land, or the removal of a substantial number of mature trees. Visual change that is compatible with existing patterns of development would not constitute a significant impact.

Potential effects from new sources of light and glare are evaluated by determining if daytime glare (from reflective surfaces, such as glass) or night lighting (and associated glare) would affect views from land uses adjacent to the campus adversely.

Significance Criteria

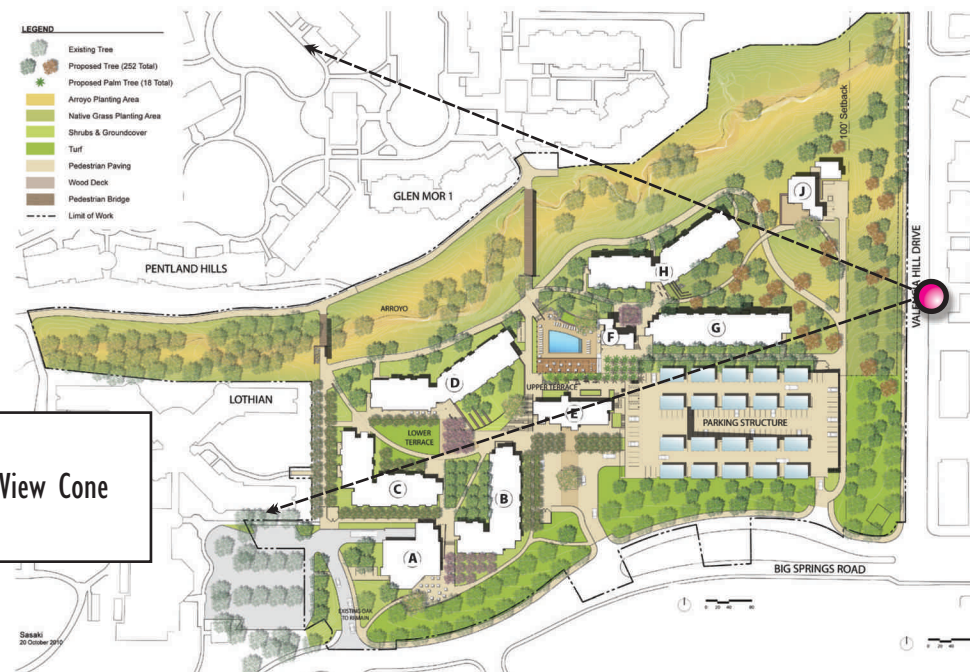
The criteria for analyzing the project's impacts on aesthetics are based on Appendix G of the State CEQA Guidelines. Given the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and the available relevant information pertaining to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the following significance criterion:

- Would the project substantially damage scenic resources, including trees, rock outcroppings, and historic buildings, within a state scenic highway?



Source: Sasaki Associates, ICF International

Photo 3: KOP 7 – Design Visualization of Project



Source: Sasaki Associates

Exhibit I: KOP 7 – Viewshed and Project Perspective



Photo 2: KOP 7 – Camera Location



Photo 1: KOP 7 – Existing Visual Conditions

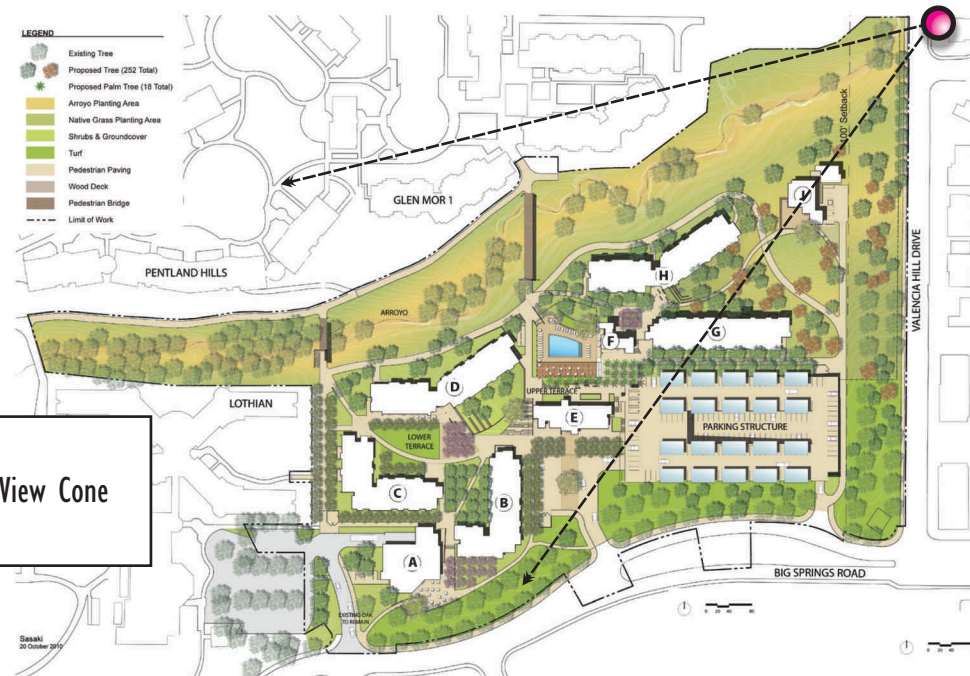


Source: Sasaki Associates, ICF International

Photo 3: KOP 8 – Design Visualization of Project



Photo 2: KOP 8 – Camera Location



Source: Sasaki Associates

Exhibit 1: KOP 8 – Viewshed and Project Perspective



Photo 1: KOP 8 – Existing Visual Conditions



Source: Sasaki Associates, ICF International

Photo 3: KOP 11 – Design Visualization of Project

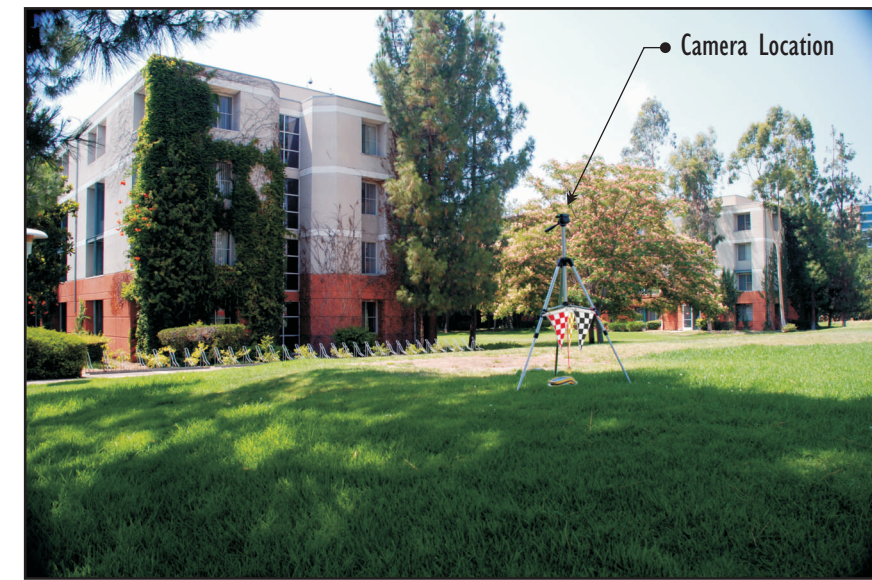
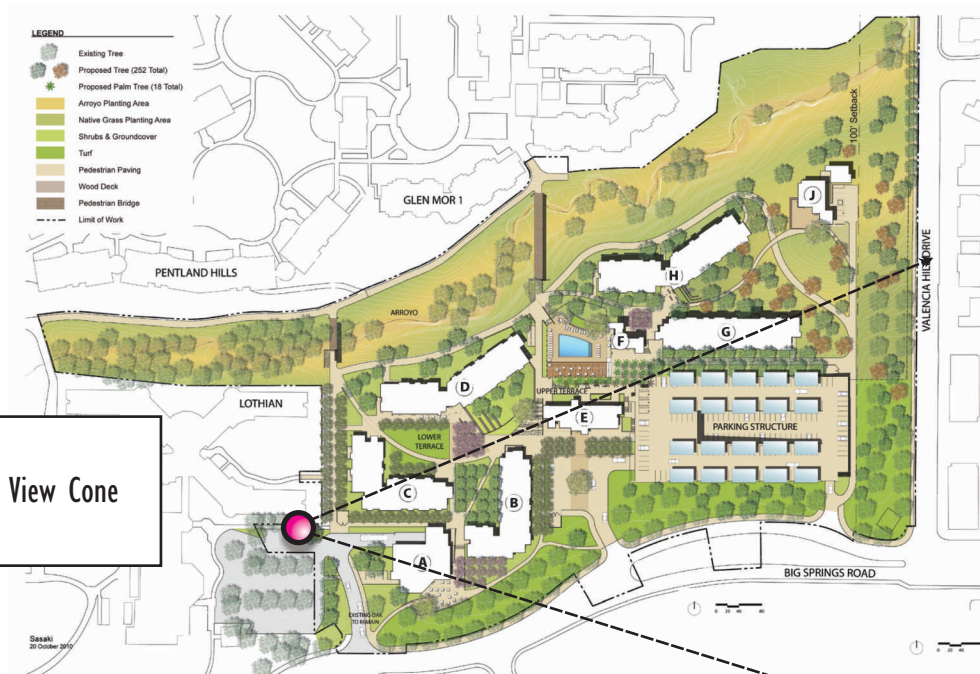


Photo 2: KOP 11 – Camera Location



Photo 1: KOP 11 – Existing Visual Conditions



Source: Sasaki Associates

Exhibit 1: KOP 11 – Viewshed and Project Perspective

The project is not located within the vicinity of any officially designated or identified eligible state scenic highways. No analysis is required.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. have a substantial adverse effect on a scenic vista,
2. substantially degrade the existing visual character or quality of the site and its surroundings, or
3. create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to aesthetics. The applicable measures are identified in Appendix F of this EIR. These applicable measures are considered part of the project for purposes of this analysis. In general, the measures call for campus design and landscaping guidelines for use in the development of individual projects; the use of non-mirrored, non-reflective building materials; project-specific review of lighting plans; and consideration of headlight light and glare in the design of parking facilities. Where necessary, project-specific measures related to LRDP EIR measures that must be implemented in the final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project have a substantial adverse effect on a scenic vista?

Impact 3.1-1: Implementation of the proposed project would alter scenic focal views of the Carillon Tower from publicly accessible off-campus locations. *Impact Determination: Less than Significant with Mitigation Incorporated*

The LRDP EIR (pages 4.1-17 through 4.1-20) noted that implementation of the LRDP would result in future development of new buildings and facilities with the potential to block or obstruct, partially, scenic vistas from publicly accessible gathering places with access to scenic vistas; however, the LRDP EIR concluded that, with implementation of the LRDP planning strategies and continued implementation of campus programs and practices, implementation of the LRDP would not have a substantial adverse impact on a scenic vista.

Construction of the Glen Mor 2 project would result in the development of five residential apartment buildings, associated support buildings and facilities, and a parking structure in the northeast corner of the UCR campus. The project would have the potential to partially block or obstruct focal views from publicly accessible places located off-campus with access to scenic vistas (identified under "Key Observation Points," above).

KOP 8

As noted under “Key Observation Points,” above, KOP 8 is representative for viewers with access to focal views of the Carillon Tower. Such views are available from several viewpoints along the northern half of Valencia Hill Drive, which borders the site to the east (see Figure 3.1-5). Existing views toward the site from KOP 8 include vegetation associated with the on-site arroyo, a few trees, and open space. Additionally, views of the Glen Mor 1 student apartments and other campus buildings are visible from KOP 8 in the northern (right) frame of the view. However, the linear prominence of the Carillon Tower in the central view corridor makes it a focal feature in this view. As such, the view is considered a scenic vista.

As shown in Figure 3.1-5, implementation of the proposed project would introduce development into the foreground view from KOP 8 that would generally detract from the existing scenic nature of the view. However, minor changes to the existing sloping ground plane would not substantially degrade the scenic nature of the view from KOP 8. While the proposed building locations would retain an open view corridor to the campus core and the Carillon Tower, the height and visual prominence of the residential apartment building (Building G) and executive retreat (Building J) in the foreground would detract from the scenic nature of this focal view. The proposed fence would partially obscure views of the Carillon Tower’s lower elevation from this viewpoint but would not significantly obstruct visibility of this feature. With the object of the focal view preserved, the potential degradation of the scenic nature would not constitute a significant impact.

Figure 3.1-5 reflects proposed landscape screening elements and a fence in the foreground of the view along Valencia Hill Drive according to the conceptual landscape plan (see Figure 2-3) and preliminary landscape plans developed by the architectural design team. While the landscape elements would not obscure scenic focal views of the Carillon Tower from KOP 8 during the initial years following completion of the project, as the foreground vegetation matures, it would partially obscure or completely block direct views of the Carillon Tower from several viewpoints along the northern half of Valencia Hill Drive. Thus, the project could ultimately veil scenic focal views of the Carillon Tower from KOP 8, resulting in a significant impact. Mitigation Measure AES 1 commits the campus to strategic placement of trees within the existing view corridor to maintain existing scenic views of the Carillon Tower from Valencia Hill Drive.

AES 1: Design Detailed Planting Plan to Maintain Existing View Corridor

Detailed planting plans for Reach 1 of the Arroyo enhancement program and the planting areas north of the executive retreat (Building J) and residential buildings D and H shall be designed to preserve the existing scenic focal views of the Carillon Tower and associated campus core from Valencia Hill Drive. Strategically placed trees that, at maturity, would not block the view corridor may be included. The campus landscape architect shall be responsible for review and approval of the detailed plan prior to installation of the landscape treatments.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.1-2: Implementation of the proposed project would alter scenic panoramic views of the Box Springs Mountains from publicly accessible on-campus locations. *Impact Determination: Less than Significant*

The LRDP EIR (pages 4.1-17 through 4.1-20) noted that implementation of the LRDP would result in future development of new buildings and facilities with the potential to block or obstruct scenic vistas from publicly accessible gathering places. The LRDP EIR concluded that implementation of the LRDP would not have a substantial adverse impact on a scenic vista. This program-level determination was made with the understanding that implementation of the proposed open space network would create and maintain public accessibility and that implementation of LRDP Program and Practice 4.1-1 would ensure consideration of potential effects on scenic vistas in the siting and design of future building projects. The LRDP EIR acknowledged that future campus development projects would be subject to project-level review to evaluate potential impacts on scenic vistas.

Construction of the Glen Mor 2 project would result in the development of five residential apartment buildings, associated support buildings and facilities, and a parking structure in the northeast corner of the UCR campus. The project would have the potential to partially block or obstruct panoramic views from publicly accessible places along the east edge of the existing student housing precinct (identified under “Key Observation Points,” above).

KOP 11

As noted under “Key Observation Points,” above, KOP 11 is an on-campus location that is representative for viewers with access to panoramic views of the Box Springs Mountains. Such views are available from landscaped areas and walkways associated with the existing Lothian residence hall at the western boundary of the project site (see Figure 3.1-6). Existing views toward the Glen Mor 2 site from KOP 11 include Parking Lot 14, a heavily landscaped paved parking lot, and associated security lighting. Because the Box Springs Mountains rise up above the mature landscaping, scenic panoramic views are available from several viewpoints within publicly accessible areas along the western boundary of the project site. As such, this is considered a scenic vista.

Implementation of the proposed project would result in the removal of the existing mature trees associated with Parking Lot 14, which, on its own, would reveal a larger portion of the Box Springs Mountains in the view from KOP 11 (see area to the right of the building in the center of the design visualization image in Figure 3.1-6). However, the project would also introduce development into the foreground view from KOP 11 that would generally detract from the existing scenic nature of the view. The bulk, scale, and visual prominence of the residential apartment buildings would block a portion of the mountain face, similar to the portion blocked by the mature trees under current conditions. Figure 3.1-6 shows that partially obscured views of the Box Springs Mountains’ ridgeline would be maintained from KOP 11 because the visual receptor would be looking through a view corridor where buildings are in the distant foreground. From other locations along the western boundary of the site, the effect on the existing panoramic view would range from no change (i.e., views would be retained along the Great Glen Arroyo open space) to complete obstruction (i.e., the north-south wing of Building C would be in proximity to the pedestrian walk at the western edge of the site).

While scenic views of the Box Springs Mountains would be completely or partially obstructed from various perspectives within the developed Glen Mor 2 site, the newly developed site would also create new publicly accessible locations within the upper and lower terraces and along many

segments of the proposed pedestrian paths (see the Viewshed and Project Perspective inset in Figure 3.1-6). These newly created opportunities within the Glen Mor 2 site would provide equivalent or enhanced panoramic views of the Box Springs Mountains from the student housing precinct. Considering the preservation of existing views and creation of new publicly accessible viewpoints, on balance, the potential impact of the Glen Mor 2 project on scenic vistas is less than significant. No mitigation is necessary.

Criteria 2: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Impact 3.1-3: Implementation of the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

The LRDP EIR (pages 4.1-20 through 4.1-29) anticipated that development in the northeastern portion of campus would result in the conversion of undeveloped open space into a developed area featuring mid-rise multi-family residential structures (e.g., two or three stories, with integrated or adjacent parking). Existing views from Valencia Hill Drive of large areas of undeveloped open space as well as grassy lawns and mature trees, with campus buildings in the background, would be replaced by views of student housing. The LRDP EIR anticipated that the loss of undeveloped open space as well as the loss of views across the site from Valencia Hill Drive had the potential to degrade visual character and quality at this location. However, the LRDP EIR concluded that, with implementation of LRDP planning strategies and continued implementation of campus programs and practices, development of new housing in the northeastern portion of the campus would not substantially degrade the visual character or quality at this location.

Construction of the Glen Mor 2 project would result in the development of five five-story residential apartment buildings, associated support buildings and facilities, and a parking structure in the northeast corner of the UCR campus. While generally comparable with the anticipated nature of development considered in the LRDP EIR, the proposed five-story residential buildings represent an intensification of development compared with the two- to three-story buildings, with integrated parking, considered in the program-level review. Because the project would convert a generally undeveloped open space area to a developed area and remove existing landscaping and mature trees, it would have the potential to degrade the existing visual character and quality of the site and its surroundings. As stated under “Key Observation Points,” above, the viewshed from KOPs 1 and 7 generally represents the existing visual character and quality of the site and its surroundings. As such, the analysis below focuses on the visual changes that would occur at these two identified viewpoints.

KOP 1

KOP 1 is the primary eastern portal to the campus and the project site. The foreground of this view is currently occupied by Big Springs Road, the landscaped campus entry, and a heavily landscaped surface parking area. Partial middleground views of open space areas are visible, but most of the middleground and background views from this vantage point are constrained by tall, mature trees in the foreground. Existing views from KOP 1 are characterized as partially developed open space with an overall moderate visual quality (see Figure 3.1-3).

As shown in Figure 3.1-3, implementation of the proposed project would increase the visible built environment in the foreground views from KOP 1 by removing some existing landscaping and developing a parking structure and residential apartment buildings. However, no visible alterations to the existing ground plane would occur. A proposed photovoltaic system for the roof of the parking structure would establish multiple photovoltaic panels on 25- by 48-foot carport-like structures that would be supported on a single 14-foot-tall steel post (see Appendix C). Although the LRDP EIR did not address development of a parking structure or photovoltaic system at the proposed location, it did address development of a parking structure in the southeastern portion of campus (Parking Lot 13), just south of the project site. As such, the new Glen Mor 2 parking structure and associated photovoltaic system would be comparable with development anticipated in the LRDP EIR.

The proposed parking structure and photovoltaic system would be almost completely blocked from view by the existing mature trees in the immediate foreground of the view, which are being retained in furtherance of LRDP Planning Strategy Conservation 1 (protect native habitat, remnant arroyos, and mature trees). In accordance with LRDP Planning Strategy Open Space 4 and Planning Strategy Campus and Community 1, the proposed landscape design would provide a 100-foot landscaped buffer (minimum) along the Valencia Hill Drive frontage and include enhanced screening through the planting of additional trees in the retained turf areas south and east of the parking structure (see Figure 2-3). Although the easternmost portion of the photovoltaic system may be visible through the landscaping, it would be compatible in scale and design with the new built environment proposed by the project.

The new residential apartment buildings present the potential for a more prominent visual intrusion than the parking structure. In accordance with LRDP Program and Practice 4.1-2(b) and Planning Strategy Conservation 1, the project would preserve mature trees along the Big Springs Road and Valencia Hill frontages (see Figures 2-3 and 2-7). As such, the remaining mature trees would continue to be the most dominant feature in the view, and the view would maintain its existing heavily landscaped visual character (see Figure 3.1-3). The existing landscaping would serve as a visual buffer that would screen a large portion of both the parking structure and the residential apartment buildings proposed by the project.

Ultimately, the visual character would change from a partially developed open space area, with visible roadways and a surface parking lot, to a moderately developed area featuring student housing and associated parking. While altered, the visual character of the developed site would be consistent with the visual character of existing development throughout the campus, with the existing and enhanced landscaping serving to buffer direct views of the new structures.

Overall, the Glen Mor 2 project would be generally consistent with development that was anticipated to occur in the northeastern portion of the campus by the LRDP EIR, and it would be compatible in size, scale, and design with existing development in the balance of the campus housing precinct. Although the apparent intensity of development would increase, the underlying aesthetic character of the developed portions of the campus would be retained. The visual quality of the site and surrounding area would not be substantially degraded. With implementation of the LRDP planning strategies and programs and practices noted above, development of the Glen Mor 2 project would not substantially degrade visual character or quality at this location. Impacts would be less than significant.

KOP 7

KOP 7 is representative of off-campus viewpoints available along the southern half of Valencia Hill Drive. The foreground of this view is occupied by a roadway, hilly topography, existing vegetation and trees, an existing on-site residential structure, electrical distribution lines and a pole, and a radio tower. Middleground views are blocked by the knoll in the foreground of this view. A small portion of the ridgeline in the southeastern hills of the campus is visible to the southwest in the background of this view. Existing views of the site and surrounding area from KOP 7 are characterized as partially developed open space that exhibits a moderate visual quality (see Figure 3.1-4).

As shown in Figure 3.1-4, implementation of the proposed project would increase the visible built environment in the foreground views available from KOP 7 by introducing perimeter fencing and residential apartment buildings into the immediate and distant foreground. The project would add new buildings into the distant foreground that would be visible above the existing topography and the proposed landscaping. Additionally, the perimeter fencing would be a conspicuous new element in the immediate foreground of this view. The project would also include a 100-foot landscaped setback from Valencia Hill Drive, as shown in Figure 2-3, intended, in part, to lessen visual impacts on residential receptors along the east side of Valencia Hill Drive. Ultimately, the project would change the visual character from partially developed open space to a more developed area with residential apartments. The LRDP EIR (pages 4.1-24 and 4.1-25) anticipated that existing views of large areas of undeveloped open space as well as grassy lawns and mature trees, with campus buildings in the background, would be replaced by views of student housing. The LRDP EIR concluded that with implementation of the various LRDP design measures, the project would result in less-than-significant impacts on the visual character and quality of the site and its surroundings.

In accordance with LRDP Program and Practice 4.1-1, the Glen Mor 2 project would incorporate scale, massing, architectural style, and a color palette that would be compatible with existing development in the campus housing precinct, including the Glen Mor 1 student apartments, which are the current dominant aspect of the built campus environment as viewed from this off-campus area (see Figures 3.1-4 and 3.1-5 and Appendix B). In accordance with LRDP Planning Strategies Open Space 4 and Campus and Community 1, the proposed site layout would provide a substantial landscape buffer along the Valencia Hill frontage. The existing grade would be largely retained along the Valencia Hill frontage. In addition, a knoll-like feature is proposed along the north and east sides of the executive retreat. This feature would partially screen the new building and provide a finished condition that would be reminiscent of the knoll upon which the existing residential structure sits (see Figure 2-3).

The residential buildings would be placed at least 200 feet from Valencia Hill Drive, with the narrow ends of the buildings oriented toward the off-campus areas to reduce the perceived building mass. The nearest building to the landscape buffer would be the executive retreat, which would be designed with a mass and scale that would be comparable with the single-family residences that characterize development in the adjacent off-campus area.

The project would remove a total of 129¹ mature trees, as well as other vegetation, that contribute to the existing natural open-space character of the site. The new landscape treatment would provide 252 trees, plus 18 palm trees, amongst the new residential buildings. In addition, an enhancement

¹ The campus landscape architect has reviewed the proposed tree removals and has determined that none of the trees proposed for removal are mature specimen trees that would be subject to relocation provisions of LRDP Program and Practice 4.1-2(b). One mature oak tree near the proposed Food Emporium was noted to be a mature specimen tree. This tree is specifically noted for "protection in place" in the project design plans. The LRDP MMRP table in Appendix F has been annotated to reiterate this requirement.

program would be implemented within the on-site arroyo (in furtherance of LRDP Planning Strategy Open Space 3) to improve the naturalistic open space character within the arroyo boundaries and provide naturalized transitional treatments from the arroyo to the developed residential site. These project landscape elements would enhance the character of the retained open space feature and improve the overall visual quality of the developed site.

Overall, the visual character of the site as viewed from KOP 7 would change from partially developed open space to student housing, with visual characteristics that would be similar to those of existing development throughout the campus. The intensity of development, as perceived from off campus, would be increased, and a loss of open space would occur. The proposed built condition, in terms of building scale, massing, style, and color, would be consistent with the prevailing aesthetic character of the presently developed portions of the campus. Substantial building setbacks and landscape screening would be incorporated as buffers along the Valencia Hill frontage. With implementation of the LRDP planning strategies and programs and practices noted above, development of the Glen Mor 2 project would not substantially degrade the visual character or quality of the site or its surroundings. Impacts would be less than significant. Appendix F provides a cross-check to ensure that applicable provisions of the LRDP MMRP are carried forward in detailed design and construction of the Glen Mor 2 project.

Criteria 3: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact 3.1-4: Development of the Glen Mor 2 project would not create new sources of light or glare that would adversely affect daytime or nighttime views in the area. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

Established uses in the northeastern portion of the campus that contribute to existing light and glare conditions include the existing residential housing precinct and associated recreational fields and parking, with interior building lights (visible through windows), exterior building lights, security lighting along pedestrian walkways, outdoor field lighting and parking lot lighting. As such, the northeastern portion of the campus exhibits moderate to high existing levels of light and glare. Construction of the Glen Mor 2 project would develop housing facilities, a food emporium, a parking structure, common facilities, and an executive retreat center that would further contribute to light and glare conditions in the northeast portion of the campus.

The LRDP EIR (pages 4.1-32 through 4.1-35) concluded that although development of the northeastern portion of the campus (i.e., the project site and surrounding area) could result in the introduction of new sources of light and glare at some locations and adversely affect daytime or nighttime views from adjacent off-campus land uses, impacts related to light and glare would be reduced to less than significant with implementation of applicable LRDP planning strategies, programs and practices, and mitigation measures.

Exterior lighting associated with housing would be limited to building entries, outdoor decks, exit stairways, and egress doors. The primary entry to each building would contain soffit-mounted lighting for pedestrian safety, building identity, and wayfinding purposes. Exterior lighting for the community buildings would be located at the primary entries, with fixtures located to conceal visibility of the luminaire. The exterior façade of the parking structure would not contain light fixtures, except at the two vehicular access points facing West Big Springs Road and the pedestrian access/egress points in the northwest and northeast corners of the parking structure. Each of these

areas would contain downward-facing accent lighting. Within the core of the Glen Mor 2 community, post-top luminaires would be mounted predominately on 12-foot-tall poles, matching those used in Glen Mor 1. The arroyo landscape would be shielded, to the extent possible, from light spill caused by the pole fixtures lighting the adjacent pedestrian pathways. Pedestrian bridges would have low-level lighting within the guardrails to keep the majority of the light on the bridges for pedestrian safety and be sensitive to the habitat zones within the landscape they span. Light would be directed away from the edges of the project by using manufacturer's refractors, reflectors, and shields to promote efficient light distribution.

In accordance with LRDP Planning Strategies Open Space 4 and Campus and Community 1, the proposed layout for the Glen Mor 2 site would include a substantial landscaped setback along the Valencia Hill Drive frontage (see Figure 2-3), providing both distance and physical obstructions to lessen the perceived levels of light and glare at the nearest adjoining off-campus locations. As part of the project's pursuit for LEED certification, the exterior lighting design would comply with the requirements set forth by Sustainable Sites Credit 8 for Lighting Zone 3 (LZ3). Site and building-mounted luminaires would produce a maximum initial illuminance no greater than 0.20 foot-candles² at the site boundary and no greater than 0.01 foot-candles 15 feet beyond the site.

The parking structure design would include components on each level to block light from headlights in accordance with LRDP Mitigation Measure 4.1-3(c) (i.e., require structural or other barriers on parking structure to reduce light and/or glare impacts from headlights on vehicles entering or exiting the parking structure). The structural features of the parking garage, in combination with existing topography and project landscaping, would obscure or fully block light and glare from headlights on vehicles.

The parking structure would include pole-mounted light fixtures in the center bay of the structure. These poles would project a maximum of 18 feet above the upper level of the structure's parking surface. With the optional photovoltaic system, lighting would be integrated under the carport-like structures supporting the panels. With the upper deck of the parking structure at an elevation of approximately 1,115 feet, the proposed lighting fixtures would be at a maximum elevation of approximately 1,133 feet. However, finished grades and new buildings would extend above the maximum elevation of the light fixtures, thereby effectively shielding off-campus locations north of the parking structure from light sources. From off-campus areas east of the parking structure, the existing mature landscaping and proposed enhanced plantings within the landscape buffer would shield light sources at the parking structure. A photometric evaluation of the proposed garage lighting system has been completed for both proposed lighting scenarios (Appendix G). The evaluation demonstrates that lighting levels would be no more than 0.1 foot-candle approximately 70 feet away from the eastern edge of the parking structure, not accounting for any shielding that would be provided by the existing mature trees and proposed enhanced plantings.

As described in Chapter 1, "Project Description," the parking structure may include a photovoltaic system that would be supported on 14-foot-tall steel posts and be angled toward the southern exposure (see Appendix C). Glare associated with the panels would not be expected to cause extreme visual discomfort or impair the vision of residents located south-southeast of the project site because the panels would be designed to absorb as much sunlight as possible and therefore have minimal reflectivity. The type of glare that could be expected under extreme conditions would

² *Foot-candle* is a unit of measure used to describe light levels at an illuminated object. Typical lighting levels for an indoor space are 30 to 50 foot-candles. Full moonlight is 0.01 foot-candle.

be a level of veiling reflection that could cause viewers to be less able to distinguish levels of contrast and partially reduce optical functionality. Additionally, for most residents, any potential glare effects would be reduced by intervening elements in the immediate viewshed, such as on- and off-site screening created by mature trees, ornamental planting, and homes or structures, which would obstruct views of the panels. The potential impact related to glare on visual receptors located south-southeast of the project site would be less than significant.

Overall, the Glen Mor 2 project is consistent with development that was anticipated to occur in the northeastern portion of the campus by the LRDP EIR. The project would incorporate the applicable LRDP planning strategies, programs and practices, and mitigation measures, ensuring that it would be compatible with nighttime lighting and daytime glare at existing on-campus residential structures and associated facilities. This impact would be less than significant, and no project-level mitigation is necessary. Appendix F provides a cross-check to ensure that applicable provisions of the LRDP MMRP are carried forward in detailed design and construction of the Glen Mor 2 project.

3.1.5 Cumulative Impacts

As stated in Section 4.1.5 of the LRDP EIR, the geographic context for the analysis of cumulative aesthetic impacts includes areas with views to and from the UCR campus, which consists of the campus itself as well as adjoining areas within the City and the County of Riverside. Only two of the identified cumulative projects, the EH&S expansion and the Perris Valley Line Project, are located where they would contribute to cumulative impacts of the Glen Mor 2 project. The other cumulative projects are located outside of the Glen Mor 2 project viewshed or are blocked from view by the existing built environment and associated landscaping.

The EH&S expansion would establish limited new low-profile buildings adjacent to existing campus support uses along Watkins Drive, north of the Glen Mor 2 site. The Perris Valley Line Project would upgrade the ties and ballast along an existing rail line and nominally increase the number of trains using the upgraded tracks. Changes in the character of the existing built environment due to these cumulative projects would be nominal and would not present the potential for significant cumulative impacts on the general visual character of the campus setting or the availability or quality of focal and/or panoramic views of landmarks or natural landforms (i.e., the Carillon Tower or the Box Springs Mountains).

Although the cumulative projects could result in new sources of light or glare, it is unlikely that they would substantially affect existing daytime or nighttime views because the project area is already developed with uses that establish typical suburban light and glare conditions. The contribution of light and glare by the Glen Mor 2 project would not be cumulatively considerable in the context of existing sources of nighttime illumination and with implementation of applicable LRDP EIR measures, as described above under Impact 3.1-4. The Glen Mor 2 project proposes sensitive lighting in accordance with LEED principles and would be shielded for the most part from surrounding land uses by landscape and topographic buffers. Consequently, the contribution of the Glen Mor 2 project to cumulative light and glare impacts would not be considerable, and cumulative impacts would be considered less than significant.

Section 3.2
Air Quality

3.2.1 Introduction

This section describes the affected environment and regulatory setting pertaining to air quality and describes the impacts on air quality that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts. Additional information on air quality is provided in Appendix H.

UCR received a response to the NOP from the South Coast Air Quality Management District (SCAQMD). This was the district's standard NOP response letter, which explains SCAQMD's guidelines for analyzing air quality impacts in an EIR. It contained no project-specific comments. No other air-quality-related comments were received in response to the NOP or during the scoping meeting.

Definitions of most criteria air pollutants analyzed in this section, including ozone (O_3), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂), are discussed in Section 4.3.2 of the LRDP EIR, beginning on page 4.3-2. Two criteria pollutants that are not defined in the LRDP EIR are nitrogen dioxide (NO₂) and reactive organic gases (ROG). NO₂ is a brownish gas that can irritate the lungs and cause breathing difficulties at high concentrations. Similar to O_3 , NO₂ is not directly emitted but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as oxides of nitrogen (NO_x) and are major contributors to the formation of O_3 . ROGs are a series of organic hydrocarbons (formed solely of hydrogen and carbon) that react with NO_x to form O_3 . ROGs are emitted primarily from incomplete combustion of carbon-based fuels.

3.2.2 Environmental Setting

Regional Context

The project is located within the South Coast Air Basin (Basin), an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties in addition to the San Geronio Pass area in Riverside County. The project site is within the jurisdictional boundaries of the SCAQMD. The Basin is a subregion.

The Basin currently fails to meet federal and state standards for several pollutants and is considered a nonattainment area for those pollutants, as shown below in Table 3.2-1.

Table 3.2-1. Federal and State Attainment Status for South Coast Air Basin

Pollutants	Federal Classification	State Classification
O ₃ (1-hour standard)	—	Nonattainment, Extreme
O ₃ (8-hour standard)	Nonattainment, Extreme	—
PM10	Serious Nonattainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Unclassified/Attainment	Nonattainment
SO ₂	Attainment	Attainment

Source: California Air Resources Board, compiled by ICF International, December 2010.

In September 2008, SCAQMD completed the Multiple Air Toxics Exposure Study III (MATES III), an ambient air monitoring and evaluation study that was conducted throughout the Basin. MATES III was a follow up to previous air toxics studies in the Basin. It is also part of the SCAQMD Governing Board Environmental Justice Initiative.

Diesel particulate matter continues to dominate the risk from air toxics. Furthermore, the portion of air toxics risk attributable to diesel exhaust is increasing compared with the MATES II study. The highest risks are found near the port, in central Los Angeles, and along transportation corridors. The results from the MATES III study underscore the need for a continued focus on reducing toxic emissions, particularly from diesel engines, to reduce exposure to air toxics.

The MATES III study concluded that the average carcinogenic risk attributable to toxic air contaminants (TACs) is approximately 1,194 in one million throughout the Basin. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) are the greatest contributors. About 83.6 percent of all risk is attributed to diesel particulate matter emissions.

Local Area Conditions

Local Pollutant Levels

The air monitoring station nearest to the project site is the Riverside – Magnolia Monitoring Station, which is located approximately 5 miles northwest of the project site. Criteria pollutants monitored at this station include CO, NO₂, and PM2.5. The nearest station within the same General Forecast Area that monitors O₃ and PM10 is the Riverside – Rubidoux Monitoring Station. Monitoring data from both stations are shown for reference.

Monitoring data for 2007 through 2009, shown in Table 3.2-2, indicate the following pollutant trends: State 1-hour O₃ standards were exceeded an average of 37 times per year during the 3-year period. The national 8-hour O₃ standard was exceeded an average of 49 times per year during the 3-year period. CO and NO₂ concentrations are low; no exceedances were recorded during the 3-year reporting period. Particulate (PM10 and PM2.5) concentrations are largely affected by meteorology and show some variability during the 3-year reporting period. The state 24-hour PM10 standard was exceeded an average of 47 times during the 3-year period, while the national standard was exceeded only once during the 3-year reporting period. The national PM2.5 standard was exceeded an average of five times during the 3-year period.

Table 3.2-2. Air Quality Data from Riverside – Magnolia Monitoring Station (CARB 33146) and Riverside – Rubidoux Monitoring Station (CARB 33144)

Pollutant Standards	2007	2008	2009
Ozone (O₃) – Rubidoux Station			
<i>State standard (1-hour average = 0.09 ppm)</i>			
<i>National standard (8-hour average = 0.075 ppm)</i>			
Maximum concentration 1-hour period (ppm)	0.131	0.146	0.116
Maximum concentration 8-hour period (ppm)	0.111	0.116	0.101
Days state 1-hour standard exceeded	31	54	25
Days national 8-hour standard exceeded	46	64	36
Carbon Monoxide (CO) – Magnolia Station			
<i>State standard (8-hour average = 9 ppm)</i>			
<i>National standard (8-hour average = 9 ppm)</i>			
Maximum concentration 8-hour period (ppm)	2.16	1.93	1.96
Days state/national 8-hour standard exceeded	0	0	0
Nitrogen Dioxide (NO₂) – Magnolia Station			
<i>State standard (1-hour average = 0.18 ppm)</i>			
Maximum 1-hour concentration	—	0.086	0.080
Days state standard exceeded	0	0	0
Suspended Particulates (PM₁₀) – Rubidoux Station			
<i>State standard (24-hour average = 50 µg/m³)</i>			
<i>National standard (24-hour average = 150 µg/m³)</i>			
Maximum state 24-hour concentration	114*	108.0	75.0
Maximum national 24-hour concentration	118*	115.0	77.0
Estimated days exceeding state standard	201.9	140.4	92.7
Estimated days exceeding national standard	3.1	0.0	0.0
Suspended Particulates (PM_{2.5}) – Magnolia Station			
<i>National standard (24-hour average = 35 µg/m³)</i>			
Maximum 24-hour concentration	68.5	42.9	42.1
Estimated days exceeding national standard	NA	12.4	6.0

*Note that the 2007 PM₁₀ maximum state and national 24-hour concentrations were 540.0 and 559.0 µg/m³, respectively. However, these were eliminated because this particular day was deemed an exceptional event because of a wildfire and a high wind event.

ppm = parts per million; µg/m³ = micrograms per cubic meter.

Source: California Air Resources Board 2010b, compiled by ICF International, December 2010.

Sensitive Receptors and Locations

Some population groups, such as children, the elderly, and acutely and chronically ill persons, especially those with cardio-respiratory diseases, are considered more sensitive to air pollution than others. Sensitive receptors within the project vicinity include the on-campus housing developments near the project (Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills), on-campus recreational fields to the north, off-campus residential land uses to the east, and the off-campus Apple Tree Learning Center and Child Day Care, a private school, located at the southeast corner of Big Springs Road and Watkins Drive.

Proposed construction activity would occur within 25 meters of the sensitive land uses listed above. As such, the evaluation of localized impacts during construction activity will focus on these land uses.

3.2.3 Regulatory Framework

Information regarding the various federal, state, and local regulations governing air quality at UCR is provided in Section 4.3.3 of the LRDP EIR, beginning on page 4.3-14. Since certification of the LRDP EIR, a number of regulations, plans, and policies that were written to address air quality issues and standards have been updated and/or adopted, as listed below. The project site and its vicinity are subject to air quality regulations developed and implemented at the federal, state, and local levels. At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for implementation of the federal Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile-source requirements) are implemented directly by EPA. Other portions of the CAA (e.g., stationary-source requirements) are implemented by state and local agencies.

Federal Regulations

Federal Clean Air Act

The CAA is described in the LRDP EIR. The CAA establishes federal air quality standards, known as the National Ambient Air Quality Standards (NAAQS). The NAAQS were last updated in September 2010 (see Table 3.2-3). The Basin currently fails to meet national standards for O₃, PM₁₀, and PM_{2.5} and, therefore, is considered a federal nonattainment area for those pollutants.

State Regulations

California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards, last updated in 2008 and listed in Table 3.2-3, are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The Basin is in compliance with these California standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 3.2-2 provides the Basin's attainment status with respect to both federal and state standards.

Table 3.2-3. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b
Ozone (O ₃)	1 hour	0.09 ppm ^c	—
	8 hours	0.070 ppm	0.075 ppm
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hours	9.0 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	100 ppb
	Annual	0.030 ppm	0.053 ppb
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	75 ppb
	3 hours	—	0.5 ppm
	24 hours	0.04 ppm	—
Inhalable Particulate Matter (PM ₁₀)	24 hours	50 µg/m ^{3c}	150 µg/m ³
	Annual	20 µg/m ³	—
Fine Particulate Matter (PM _{2.5})	24 hours	—	35 µg/m ³
	Annual	12 µg/m ³	15.0 µg/m ³
Sulfates	24 hours	25 µg/m ³	—
Lead (Pb)	30 days	1.5 µg/m ³	—
	Calendar quarter	—	1.5 µg/m ³
	Rolling 3-month	—	0.15 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm	—
Vinyl Chloride	24 hours	0.01 ppm	—

Notes:

^a The California Ambient Air Quality Standards (CAAQS) for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, and PM_{2.5} are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^b The NAAQS, other than O₃ and those based on annual averages, are not to be exceeded more than once a year. The O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

^c ppm = parts per million by volume; ppb = parts per billion by volume; µg/m³ = micrograms per cubic meter.

Regional Regulations

South Coast Air Quality Management District

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and the NAAQS. The most recent update to the AQMP for the Basin was adopted on June 1, 2007 (SCAQMD 2007). The final 2007 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP builds upon the approaches taken in the 2003 AQMP for the attainment of federal air quality standards in the Basin. Additionally, the plan highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet federal criteria pollutant standards within the timeframes allowed under federal CAA.

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to construction or operation of the proposed project. For example, SCAQMD Rule 403 requires contractors to implement best available fugitive dust control measures during active operations that might generate fugitive dust emissions (e.g., from on-site earthmoving, construction/demolition, or moving construction equipment on paved and unpaved roads).

Regional Comprehensive Plan and Guide

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. It addresses regional issues related to transportation, the economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the Southern California region and the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG), including Growth Management and Regional Mobility chapters, which are the basis for the land use and transportation components of the AQMP. These chapters are used in the preparation of air quality forecasts and the consistency analysis included in the AQMP.

3.2.4 Impact Analysis

This section presents a discussion of the potential air quality impacts associated with construction and operation of the proposed project.

Methodology

Construction

Mass daily combustion emissions and off-gassing emissions for the project's multiple phases of construction were compiled using URBEMIS 2007 (version 9.2.4), which is an emissions estimation/evaluation model developed by the California Air Resources Board (CARB). It is based, in part, on guidelines and methodologies contained in SCAQMD's *CEQA Air Quality Handbook* (SCAQMD 1993). SCAQMD has developed an approach to addressing emissions that includes both regional emissions (i.e., those pollutants that disperse from the project site and may affect a larger area) and localized emissions (i.e., those pollutants that tend not to disperse, thereby affecting the area immediately surrounding the project site). Regional emission thresholds have been developed for all criteria pollutants (ROG, CO, NO_x, SO_x, PM₁₀, and PM_{2.5}). Localized thresholds have been developed for only those criteria pollutants of greatest concern during construction (and operations, as discussed below) within the Basin. As such, localized significance thresholds (LSTs) include only those pollutants that SCAQMD considers to be of greatest concern (SCAQMD 2008).

The list of construction equipment to be used during each phase was based on scheduling information ascertained from the construction contract's project manager. The complete list of construction equipment, by phase; assumptions regarding the duration of each construction phase; and changes to the modeling default values used in this analysis are included in the URBEMIS 2007 printout sheets, which are provided in Appendix H of this EIR.

It should also be noted that the construction emissions analysis assumed compliance with SCAQMD's Rule 403, which lays out mandatory measures to reduce dust emissions. Compliance with this rule is listed as LRDP EIR Programs and Practices 4.3-2(b).

Note that the majority of construction activities would occur at the Glen Mor 2 project site itself. However, excavated soils would be hauled to and stockpiled at an off-site disposal location. The disposal site would be located more than 1000 meters from the Glen Mor 2 project site. As such, construction-related emissions would affect different receptors and, thus, are presented separately according to project acreage and the distance to receptors.

Operations

Criteria Pollutants Analysis

The URBEMIS 2007 software was also used to compile the estimates for mass daily emissions from mobile and area sources during long-term project operations. In calculating mobile-source emissions, the URBEMIS 2007 default trip-length assumptions were applied to the average daily trip estimates provided by the project traffic consultant to arrive at the total vehicle miles traveled (VMT). Area-source emissions were compiled using URBEMIS 2007 default assumptions for housing facilities similar to those of the project. Criteria pollutant emissions associated with the production and consumption of energy were calculated using emission factors from SCAQMD's *CEQA Air Quality Handbook* (appendix to Chapter 9). Similar to the analysis for construction activities, SCAQMD has developed both regional and localized mass emission thresholds for operations.

CO Hot-spot Analysis

Local-area CO emissions were determined from analysis of vehicle exhaust at congested intersections affected by the project as well as at the proposed parking structure. For the intersections, ICF reviewed the traffic impact analysis for the project to determine the potential for localized CO hot spots to be created at congested intersections. SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when vehicle-to-capacity (V/C) ratios are increased by 2 percent or more at intersections with a level of service (LOS) of C or worse. The traffic impact analysis identified eight key intersection locations along routes that accommodate much of the traffic traveling within the project area. Of the eight key intersection locations, the traffic analysis concluded that four intersections could create a localized CO hot spot. Intersection impacts were evaluated using the CALINE-4 line-source dispersion model developed by the California Department of Transportation (Caltrans), combined with EMFAC2007 emission factors, consistent with SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

Local area CO concentrations associated with the parking structure were evaluated using EPA's SCREEN3 dispersion model, combined with EMFAC2007 emission factors. This analysis includes all emissions from cold starting, idling, and traveling within the parking structure. It assumes that all 597 parking spaces are occupied and that vehicles start from a cold start, idle for 1 minute, and travel at 1 mph across the maximum length of the three-story parking structure within the peak hour. All emissions were treated as a single volume source, with SCREEN3 centered at the middle level of the structure, and receptors were placed between 3 and 500 meters from the parking structure.

Toxic Air Contaminants Impacts (Construction and Operations)

Potential TAC impacts are evaluated by conducting a screening-level analysis, followed by a more detailed analysis (i.e., dispersion modeling), if necessary. The screening-level analysis consists of reviewing the proposed project's description and site plan to identify any new or modified TAC emissions sources. If it is determined that the proposed project would introduce a new source or modify an existing TAC emissions source, then downwind sensitive-receptor locations are identified, and site-specific dispersion modeling is conducted to determine proposed project impacts. The screening analysis is done under Impact AQ-3.

Significance Criteria

The criteria for analyzing the project's impacts on air quality are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criterion listed below. Additional discussion is provided in Section 3 of the initial study (Appendix A).

- Would the project create objectionable odors affecting a substantial number of people?

Because of the temporary and localized nature of construction activities, impacts related to odors generated by the operation of construction vehicles and the application of architectural coatings would be less than significant. Also, any potential impacts related to odors generated during long-term operations would be less than significant because the odors would be confined to the immediate surroundings. Furthermore, trash would be stored in enclosed receptacles that would be emptied frequently, per campus policy. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Conflict with or obstruct implementation of the applicable air quality plan,
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation,
3. Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard (this includes the release of emissions that exceed quantitative thresholds for ozone precursors), or
4. Expose sensitive receptors to substantial pollutant concentrations.

For the assessment of criteria 2 and 3, which relate to regional construction and operational emissions, the SCAQMD thresholds identified in Table 3.2-4 are used. SCAQMD guidelines suggest using the same thresholds to determine a project-level impact and a "cumulatively considerable" net increase in criteria pollutants.

Table 3.2-4. SCAQMD Emission Thresholds (lbs/day)

Pollutant	Construction	Operation
Nitrogen Oxides (NO _x)	100	55
Reactive Organic Gases (ROG)	75	55
Suspended Particulate Matter (PM10)	150	150
Fine Particulate Matter (PM2.5)	55	55
Sulfur Oxides (SO _x)	150	150
Carbon Monoxide (CO)	550	550
Lead (Pb) ¹	3	3

¹ The proposed project would not result in lead emissions sources during the construction or operations period. As such, lead emissions are not evaluated in this report.

Source: SCAQMD 2006.

For criterion 4, which addresses local pollutant concentrations at sensitive receptors, this analysis uses the localized thresholds established by SCAQMD, as shown in Table 3.2-5.

Table 3.2-5. SCAQMD Localized Emission Thresholds (lbs/day)

Pollutant	Construction	Operation
Nitrogen Oxides (NO _x)	270	270
Suspended Particulate Matter (PM10)	13	4
Fine Particulate Matter (PM2.5)	8	2
Carbon Monoxide (CO)	1,577	1,577

Notes: Localized thresholds derived from SCAQMD localized significance threshold tables and based on the project location (Source Receptor Area [SRA] 23, Metropolitan Riverside), project area disturbed in any given day (5 acres), and the distance to the nearest sensitive receptor (25 meters).

Source: SCAQMD, 2006.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to air quality. The applicable measures are identified in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the measures address requirements in construction contracts, compliance with SCAQMD regulations, the campus Transportation Demand Management program, and energy conservation measures. Where necessary, project-specific measures related to the LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact 3.2-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. *Impact Determination: Less than Significant*

SCAQMD is required, pursuant to the federal CAA, to reduce emissions of the criteria pollutants for which the Basin is in nonattainment status (i.e., O₃, NO₂, PM₁₀, and PM_{2.5}). The project is subject to SCAQMD's AQMP, which contains a comprehensive list of pollution-control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are, in part, based on regional population, housing, and employment projections prepared by SCAG.

The Growth Management and Regional Mobility chapters of SCAG's RCPG are the basis for the land use and transportation components of the AQMP. These chapters are used in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections that originated from county and city general plans as well as, with respect to this project, the LRDP.

The project represents part of the growth anticipated in the LRDP. It would not increase school enrollment or otherwise induce on- or off-campus growth beyond the level that was anticipated in the LRDP. Pursuant to SCAQMD guidelines, it is considered consistent with the region's AQMP. As such, project-related emissions are accounted for in the AQMP, which was crafted to bring the Basin into attainment status for all criteria pollutants. Potential impacts would be less than significant, and no mitigation measures are necessary.

Criteria 2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed above, the project site is located within the Basin, where state and federal air quality standards for O₃, PM₁₀, and PM_{2.5} are occasionally exceeded. The proposed project would contribute to regional air pollutant emissions during construction (short-term) and project operations (long-term), as discussed below.

Impact 3.2-2: Project construction activities would emit pollutants in an area with applicable standards. *Impact Determination: Less than Significant with Mitigation Incorporated*

Project construction would result in criteria air pollutants being emitted from heavy-duty construction equipment and the vehicles used by construction workers who travel to and from the project site. In addition, fugitive dust emissions would result from excavation and construction activities. One notable source of fugitive dust emissions during construction of this project would be the grading proposed on the site to over-excavate and re-compact earth material and establish conditions suitable for building foundations. This grading, which would be considerable, was factored into the emissions modeling. Mobile-source emissions, primarily NO_x, would result from the use of diesel-powered construction equipment, such as graders, bulldozers, wheeled loaders, and excavators.

The project's current construction schedule has work commencing in July 2011 and ending in June 2013. Table 3.2-6 provides a conservative estimate of project construction emissions.

Table 3.2-6. Conservative Estimate of Regional Construction Emissions (pounds per day)

Phase	ROG	NO _x	CO	SO _x	PM10	PM2.5
Clear/Grub/Demo	8.9	83.3	40.1	< 0.1	56.1	14.5
Parking Garage Over-excavation/ Re-compaction	7.8	66.4	32.2	< 0.1	9.5	4.1
Building Over-excavation/Re-compaction	7.8	66.4	32.2	< 0.1	11.5	4.5
Parking Garage Construction	6.4	47.7	40.2	< 0.1	2.7	2.4
Miscellaneous Grading	2.9	23.5	12.9	< 0.1	10.6	3.1
Utilities Trenching	2.0	13.8	9.4	< 0.1	1.0	0.9
Building Construction	9.8	70.2	52.8	< 0.1	4.6	4.2
Concrete Phase	9.3	67.0	50.7	< 0.1	3.7	3.3
Paving	3.8	25.3	15.7	< 0.1	1.6	1.5
Maximum Project Emissions^a	39.2	305.5	206.1	< 1	78.7	28.3
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	Yes	No	No	No	No

Notes:

Maximum emissions would occur in the second half of November 2011 when the following phases would overlap: clear/grub/demo (including peak soils hauling, with 170 trips on the peak day), parking garage construction, miscellaneous grading, utilities trenching, building construction, and concrete.

Source: ICF International, 2010.

As shown in Table 3.2-6, short-term emissions during construction would exceed the SCAQMD regional significance threshold for NO_x but would not exceed thresholds for the other criteria pollutants. The primary emitter of this pollutant would be the diesel-powered on- and off-road equipment used during all phases of project construction. Mitigation Measures AQ 1 and AQ 2 would reduce the project's NO_x emissions by ensuring that clean-burning equipment would be used on site. The LRDP EIR identified NO_x emissions as a significant and unavoidable impact, with the likelihood that on-campus construction projects could overlap and result in NO_x emissions that would exceed applicable thresholds (Impact 4.3-2 of the LRDP EIR). This project would contribute to that previously stated impact. The LRDP EIR identified two multi-part measures to reduce the impact and one mitigation measure (Mitigation Measure 4.3-2), which specifies that these measures must be included in construction contracts. One measure, Programs and Practices 4.3-2(a), states UCR's intent to comply with SCAQMD rules, maintain construction vehicles in good operating condition, avoid unnecessary construction vehicle idling, use alternative-fuel construction vehicles, and provide electrical power to construction sites. These measures would be incorporated into construction of the Glen Mor 2 project to the extent feasible. However, these are general measures and would not produce a quantifiable reduction in emissions from this specific project. The other measure, Programs and Practices 4.3-2(b), states that it is campus policy to comply with SCAQMD Rule 403. Mandatory compliance with this rule has already been factored into the emissions analysis for this project. The measures below, which are designed to reduce the project's regional emissions, would apply specifically to construction of the Glen Mor 2 project.

AQ 1: Construction-period engine/equipment emissions.

The UCR Office of Design and Construction will ensure that all construction contracts specify that all internal combustion engines/construction equipment operating on the project site will meet EPA-certified Tier 2 emissions standards or higher.

AQ 2: Construction-period engine/equipment oxides catalyst.

The UCR Office of Design and Construction will ensure that all construction contracts specify that all off-road equipment operating on the project site, as well as all on-road heavy-duty vehicles (including hauling and material delivery trucks) traveling to and from the site, will be fitted with an oxides catalyst.

Implementation of Mitigation Measures AQ 1 and AQ 2 would reduce NO_x emissions from off-road equipment by 73 percent and from on-road heavy-duty trucks by 40 percent. Although project construction would not exceed the thresholds for ROG, PM₁₀, or PM_{2.5}, the measures above would also reduce emissions of those pollutants. Estimates of emissions with incorporation of Mitigation Measures AQ 1 and AQ 2 are provided in Table 3.2-7. As the table shows, regional emissions of NO_x would be reduced to a less-than-significant level with implementation of these two measures.

Table 3.2-7. Conservative Estimate of Mitigated Regional Construction Emissions (pounds per day)

Phase	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Clear/Grub/Demo	3.7	31.1	40.1	< 0.1	54.5	13.0
Parking Garage Over-excavation/ Re-compaction	1.9	18.0	32.2	< 0.1	7.8	2.5
Building Over-excavation/Re-compaction	1.9	18.0	32.2	< 0.1	9.8	2.9
Parking Garage Construction	2.3	17.4	40.2	< 0.1	1.4	1.2
Miscellaneous Grading	0.7	6.4	12.9	< 0.1	9.9	2.4
Utilities Trenching	0.5	3.8	9.4	< 0.1	0.4	0.4
Building Construction	3.1	23.5	52.8	< 0.1	2.2	1.9
Concrete Phase	3.0	22.7	50.7	< 0.1	1.8	1.6
Paving	1.1	7.3	15.7	< 0.1	0.7	0.6
Maximum Project Emissions^a	13.3	98.6	206.1	< 1	70.2	20.5
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No

Notes:

^a Maximum emissions would occur in the second half of November 2011 when the following phases would overlap: clear/grub/demo (including peak soils hauling, with 170 trips on the peak day), parking garage construction, miscellaneous grading, utilities trenching, building construction, and concrete.

Source: ICF International, 2010.

Note that NO_x emissions would be reduced to a less-than-significant level. The construction analysis contained herein and summarized in Tables 3.2-6 and 3.2-7 is conservative in that it assumes a worst-case scenario in which the maximum amount of construction activity will overlap with the maximum amount of soils hauling, which may not actually take place. Thus, total NO_x emissions may be lower than projected.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.2-3: Project operation would emit pollutants in an area with applicable standards. Impact Determination: Less than Significant

Regional air pollutant emissions associated with project operations would result from the consumption of electricity and natural gas and the operation of on-road vehicles. Pollutant emissions associated with energy demand (i.e., electricity generation and natural gas consumption) are classified by the SCAQMD and CARB as regional stationary-source emissions. Electricity is produced at various locations inside and outside of the Basin. Because it is difficult to isolate the area where electricity is produced, these emissions are conservatively considered to be occurring within the Basin and regional in nature. Natural gas consumption (for residential and commercial use) is considered an area source and assumed to occur at the project site. Emissions from natural gas are considered to be both regional and localized in nature. Criteria pollutant emissions associated with the production and consumption of energy were calculated using emission factors from SCAQMD's *CEQA Air Quality Handbook* (appendix to Chapter 9). Mobile-source emissions were calculated using the URBEMIS 2007 emissions inventory model.

As shown in Table 3.2-8, the project's net regional emissions would not exceed SCAQMD thresholds for any criteria pollutants. Therefore, regional operations emissions would result in a less-than-significant long-term regional air quality impact. No mitigation is required.

Table 3.2-8. Estimate of Operational Emissions (pounds per day)

	ROG	NO _x	CO	SO _x	PM10	PM2.5
Proposed Project Emissions						
Mobile Source	23.1	18.6	226.6	0.3	49.2	9.3
Area Source ^a	13.1	0.1	4.6	< 0.1	< 0.1	< 0.1
Natural Gas ^a	0.3	4.3	1.1	< 0.1	< 0.1	< 0.1
Stationary Source	< 0.1	5.2	0.9	0.5	0.2	0.2
Total Project^b	37	28	233	1	49	10
SCAQMD Daily Significance Threshold	55	55	550	150	150	55
Exceed Significance Threshold?	No	No	No	No	No	No

Notes:

^a Natural gas is considered an area source but is presented separately.

^b Totals may not add up because of rounding.

Source: ICF International, 2010.

The LRDP EIR identified the above impact as significant and unavoidable because total operational emissions on campus would exceed the thresholds for volatile organic compounds (VOCs) (equivalent of ROG), NO_x, and PM10 (Impact 4.3-3 of the LRDP EIR). The project would contribute to that previously stated impact. However, the LRDP EIR identified Mitigation Measure 4.3-3 to reduce the impact. It lists energy-reduction measures that should be implemented in individual project designs and several general campus programs that could be implemented to reduce vehicle trips. This measure is not required for this project because the project would not result in significant

impacts, but it should be noted that the project intends to pursue LEED Gold certification, which would serve to reduce the project's energy use (and water consumption) by a minimum of 10 to 20 percent.

Level of Significance after Mitigation

Impacts would be less than significant.

Criteria 3: Would the project result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard (this includes the release of emissions that exceed quantitative thresholds for ozone precursors)?

Impact 3.2-4: The proposed project would result in a cumulatively considerable net increase in a criteria pollutant for which the project region is in nonattainment status. *Impact Determination: Significant and Unavoidable*

SCAQMD guidelines suggest that construction-related or operational emissions that exceed thresholds for individual projects would also be considered cumulatively considerable net increases in pollutants. As discussed under Impact 3.2-2, project construction emissions would exceed the threshold for unmitigated NO_x, a pollutant that contributes to the Basin's existing nonattainment status with respect to the state standards for O₃ and NO₂. However, Mitigation Measures AQ 1 and AQ 2, discussed above under Impact 3.2-2, would reduce the project's emissions of NO_x to a level that would be below SCAQMD's regional emissions threshold. Therefore, incorporation of these mitigation measures would reduce this impact to a less-than-significant level. However, as explained below under Impact 3.2-5, project construction would generate dust in excess of localized PM10 and PM2.5 thresholds. Because there are no feasible mitigation measures to reduce this impact to a less-than-significant level, the project's contribution of PM10 and PM2.5 would be significant and unavoidable.

The LRDP EIR identified the above impact as significant and unavoidable because construction of the entire development plan would exceed NO_x thresholds, and campus-wide operations would exceed VOC/ROG, NO_x, and PM10 thresholds (Impact 4.3-4 of the LRDP EIR). The Glen Mor 2 project would contribute to the previously stated campus-wide impact. The LRDP EIR measures discussed above under Impacts 3.2-2 and 3.2-3 of this EIR were identified to reduce this impact. That discussion stands for this impact of the Glen Mor 2 project.

Criteria 4: Would the project expose sensitive receptors to substantial pollutant concentrations?

The proposed project would contribute to localized air pollutant emissions during construction (short-term) and project operations (long-term). A discussion of the project's impacts relative to its localized emissions is provided below.

Impact 3.2-5: Project construction would expose sensitive receptors to substantial pollutant concentrations. *Impact Determination: Significant and Unavoidable*

Project construction would emit localized pollutants through the use of heavy-duty construction equipment on the site, primarily during grading. These localized emissions would be received by nearby receptors, including on- and off-campus residences and the school located near the intersection of Watkins Drive and Big Springs Road.

Conservative estimates of the project's unmitigated construction-period on-site mass emissions at the Glen Mor 2 project site and at the disposal site are presented in Table 3.2-9 and Table 3.2-10, respectively. As shown in Table 3.2-9, short-term localized emissions during construction at the Glen Mor 2 site would exceed SCAQMD localized significance thresholds for PM10 and PM2.5 during the period of maximum project emissions, which is anticipated to occur in the second half of November 2011 when several construction phases involving grading would overlap. As with the regional-pollutant construction estimates covered above in Impact 3.2-2, these estimates assume that the project would implement the mandatory dust-control measures specified in SCAQMD's Rule 403, compliance with which was stated in LRDP EIR Programs and Practices 4.3-2(b). Other periods of construction would not result in levels of PM10 and PM2.5 that would be as high. Because the project exceeds SCAQMD thresholds during the estimated period of maximum emissions, this is a significant impact.

As shown in Table 3.2-10, short-term localized emissions during stockpiling activities at the disposal site would not exceed SCAQMD's localized significance thresholds for PM10 and PM2.5.

Table 3.2-9. Unmitigated Worst-Case Localized Construction Emissions at the Glen Mor 2 Site (pounds per day)

Phase	ROG	NO _x	CO	SO _x	PM10	PM2.5
Clear/Grub/Demo	6.8	57.2	27.9	—	33.6	9.0
Parking Garage Over-excavation/ Re-compaction	7.7	66.3	29.8	—	9.4	4.1
Building Over-excavation/Re-compaction	7.7	66.3	29.8	—	11.5	4.5
Parking Garage Construction	5.4	41.4	19.6	—	2.3	2.1
Miscellaneous Grading	2.8	23.4	12.0	—	10.6	3.1
Utilities Trenching	1.9	13.7	8.2	—	1.0	0.9
Building Construction	8.8	64.0	32.3	—	4.2	3.9
Concrete Phase	8.3	60.8	30.2	—	3.3	3.0
Paving	3.7	24.6	13.2	—	1.6	1.4
Maximum Project Emissions^a	34	261	130	—	55	22
Localized Significance Thresholds ^b	—	270	1,577	—	13	8
Exceed Threshold?	NA	No	No	NA	Yes	Yes

Notes:

^a Maximum emissions would occur in the second half of November 2011 when the following phases would overlap: clear/grub/demo, parking garage construction, miscellaneous grading, utilities trenching, building construction, and concrete.

^b The project site is located in SCAQMD SRA No. 23. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and project area that could be under construction on any given day (5 acres).

Source: ICF International, 2010.

Table 3.2-10. Unmitigated Worst-Case Localized Construction Emissions at the Disposal Site (pounds per day)

Phase	ROG	NO _x	CO	SO _x	PM10	PM2.5
Clear/Grub/Demo (stockpiling only)	—	—	—	—	21	13
Localized Significance Thresholds ^a	—	601	3,158	—	186	45
Exceed Threshold?	NA	No	No	NA	No	No

Note:

^a The project site is located in SCAQMD SRA No. 23. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (200 meters), and project area that could be under construction on any given day (1 acre).

Source: ICF International, 2010.

Implementing Mitigation Measures AQ 1 and AQ 2, which are described above, would reduce the project's localized emissions throughout all construction phases. Implementation would also limit the amount of particulate matter emitted by operating project construction vehicles (see Table 3.2-11). These measures would also serve to reduce localized NO_x and ROG emissions. However, the primary source of localized particulate matter emissions from project construction is grading; these two measures would not reduce PM10 and PM2.5 emissions to levels that would be below the thresholds. There are no mitigation measures available that would reduce PM10 and PM2.5 emissions to levels that would be below the thresholds. This impact would be significant and unavoidable.

Level of Significance after Mitigation

Impacts would be significant and unavoidable.

Impact 3.2-6: Project operation would not expose sensitive receptors to substantial pollutant concentrations. *Impact Determination: Less than Significant*

Operation of the project would generate localized concentrations of pollutants from motor vehicle traffic on nearby roadways or at the parking structure as well as on-site area sources, including emissions from space and water heating, consumer products, and landscaping. Exhaust from traffic on nearby roadways or at the parking structure could result in on- and off-campus receptors being exposed to increased CO concentrations. The project does not propose any point-source pollutant emitters. Therefore, the operational impact analysis focuses on emissions from the two traffic-related emissions sources.

The operational phase of the project would generate CO emissions from traffic, which could affect receptors near roadways or the parking structure. As noted in the methodology discussion above, the traffic impact analysis for the project identified four intersections that meet the congestion criteria for analyzing CO hot spots (see Table 3.2-12).

The project's AM and PM 1- and 8-hour CO concentrations in 2015 are presented in Table 3.2-12.¹ As shown therein, the four intersections identified in the traffic impact analysis are anticipated to operate below the state standards for CO. Therefore, the project would not have a significant impact

¹ The analysis uses the numbers for 2015, the LRDP planning horizon, provided in the traffic study. This represents a conservative methodology because the analysis takes into account total traffic at an intersection (project and ambient growth), which would be higher in 2015 than in the project buildout year of 2013.

Table 3.2-11. Mitigated Worst-Case Localized Construction Emissions (pounds per day)

Phase	ROG	NO _x	CO	SO _x	PM10	PM2.5
Clear/Grub/Demo	1.6	15.4	27.9	—	32.0	7.5
Parking Garage Over-excavation/ Re-compaction	1.8	17.9	29.8	—	7.8	2.5
Building Over-excavation/Re-compaction	1.8	17.9	29.8	—	9.8	2.9
Parking Garage Construction	0.7	6.3	12.0	—	0.9	0.9
Miscellaneous Grading	0.7	6.3	12.0	—	9.9	2.4
Utilities Trenching	0.5	3.7	8.2	—	0.4	0.4
Building Construction	2.1	17.3	32.3	—	1.8	1.6
Concrete Phase	2.0	16.4	30.2	—	1.4	1.3
Paving	1.0	6.6	13.2	—	0.7	0.6
Maximum Project Emissions^a	8	70	130	—	46	14
Localized Significance Thresholds ^b	—	270	1,577	—	13	8
Exceed Threshold?	NA	No	No	NA	Yes	Yes

Notes:

^a Maximum emissions would occur in the second half of November 2011 when the following phases would overlap: clear/grub/demo, parking garage construction, miscellaneous grading, utilities trenching, building construction, and concrete.

^b These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and project area that could be under construction on any given day (5 acres).

Source: ICF International, 2010.

at these intersections. Pollutant concentrations farther away from these intersections would be lower than those shown in the table. Additionally, these four intersections represent the most congested of the intersections that would be affected by project traffic. CO concentrations at the other, less-congested intersections would also be below state standards. Therefore, the project would result in a less-than-significant impact on intersection-related CO hot spots.

The project would also generate localized CO concentrations at the parking structure, which is in the vicinity of on- and off-campus residential receptors. The project's CO concentrations from the parking structure are presented in Table 3.2-13. As shown therein, the project would not exceed the relevant standards. Therefore, this impact would be less than significant.

With respect to the project's on-site mass emissions during operations, Table 3.2-14 shows that on-site operations-period emissions would be below SCAQMD's localized significance thresholds for all criteria pollutants. Analysis of on-site emissions during operations includes only those sources of emissions that would occur within the project boundary. In this case, only area-source emissions, which are associated with space and water heating, consumer products, and landscaping, are included. Impacts from localized emissions would be less than significant. No mitigation is required.

Table 3.2-12. LRDP Horizon (Year 2015) – Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period ^a	Maximum 1-Hour 2015 Base Concentration (ppm) ^b	Maximum 1-Hour 2015 With-Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2015 Base Concentration (ppm) ^e	Maximum 8-Hour 2015 With-Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Aberdeen Dr at Linden St	AM	5.7	5.7	No	3.6	3.6	No
	PM	5.8	5.9	No	3.7	3.8	No
Aberdeen Dr at Campus Dr	AM	5.6	5.6	No	3.6	3.6	No
	PM	5.9	5.9	No	3.8	3.8	No
Campus Dr at Big Springs Rd	AM	5.5	5.5	No	3.5	3.5	No
	PM	5.7	5.7	No	3.6	3.6	No
Watkins Dr at Big Springs Rd	AM	5.9	5.9	No	3.8	3.8	No
	PM	6.2	6.3	No	4.0	4.0	No

Notes:

ppm = parts per million

^a Peak-hour traffic volumes are based on the traffic impact analysis prepared for the project by Kunzman in 2010.^b SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) plus 2015 base traffic CO 1-hour contribution.^c SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) plus 2015 with-project traffic CO 1-hour contribution.^d The state standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.^e SCAQMD 2015 8-hour ambient background concentration (3.2 ppm) plus 2015 base traffic CO 8-hour contribution.^f SCAQMD 2015 8-hour ambient background concentration (3.2 ppm) plus 2015 with-project traffic CO 8-hour contribution.

Table 3.2-13. LRDP Horizon (Year 2015) – Parking Structure Carbon Monoxide Dispersion Analysis

Distance (meters)	Maximum 1-Hour 2015 With-Project Concentration (ppm) ^a	Significant 1-Hour Concentration Impact? ^b	Maximum 8-Hour 2015 With-Project Concentration (ppm) ^c	Significant 8-Hour Concentration Impact? ^b
3	5.1	No	3.2	No
7	5.1	No	3.2	No
15	5.1	No	3.2	No
25	5.1	No	3.2	No
50	5.1	No	3.2	No
75	7.0	No	4.5	No
100	6.6	No	4.2	No
200	5.9	No	3.7	No
500	5.4	No	3.4	No
62 (maximum)	7.2	No	4.7	No

Notes:

ppm = parts per million

^a SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) plus 2015 with-project traffic CO 1-hour contribution.^b The state standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.^c SCAQMD 2015 8-hour ambient background concentration (3.2 ppm) plus 2015 with-project traffic CO 8-hour contribution.**Table 3.2-14. Estimate of Operations-Period Localized (On-Site) Emissions**

	NOX	CO	PM10	PM2.5
Proposed Project Emissions^a				
Area Source	0.1	4.6	< 0.1	< 0.1
Natural Gas	4.3	1.1	< 0.1	< 0.1
Total Project	4.4	5.7	< 0.1	< 0.1
SCAQMD Daily Significance Threshold (lbs/day) ^b	270	1,577	4	2
Exceed Significance Threshold?	No	No	No	No

Notes:^a On-site area source and natural gas emissions calculated using the URBEMIS 2007 emissions model and emission factors from SCAQMD.^b The project site is located in SCAQMD SRA No. 23. These LSTs are based on the site location SRA, distance to the nearest sensitive-receptor location from the project site (25 meters), and the project area (5 acres).

Source: ICF International, 2010.

Impact 3.2-7: Project operation would not expose sensitive receptors to toxic air contaminants. *Impact Determination: Less than Significant*

Toxic Air Contaminants

SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities). The district has provided guidance for analyzing mobile-source diesel emissions. Typical sources of acutely and chronically hazardous TACs include industrial manufacturing, automotive repair, and dry cleaning facilities. Although the project would include two on-site diesel generators to provide electricity in the event of an emergency, these generators would operate only during a power outage and would not be regular emitters of diesel particulates. Because it would not include substantial sources of diesel particulate emissions, the proposed project does not warrant a health risk assessment. Potential project-generated impacts on surrounding land uses from TACs would be less than significant. No mitigation measures are necessary.

3.2.5 Cumulative Impacts

Cumulative air quality impacts throughout the Basin are taken into account by SCAQMD when the district reviews and revise emissions thresholds in its guidelines, which were used in the impact analysis presented above. The Basin is in nonattainment status with respect to the federal and state standards for several criteria pollutants, as noted in Table 3.2-13, above, meaning that a significant cumulative impact related to these pollutants exists throughout the Basin. The project would contribute to this significant impact by emitting pollutants during construction and operations. These impacts are addressed under Impacts 3.2-2, 3.2-3, and 3.2-5.

The project's contribution to the significant impact noted above during construction would exceed localized significance thresholds and be considered significant (Impact 3.2-5). Given the preliminary construction schedules for the cumulative projects listed in Section 3.0.4, there is a chance that Glen Mor 2 construction may overlap with construction of three on-campus projects (i.e., EH&S expansion, the Student Recreation Center expansion, and the Health Sciences Teaching Center) and one off-campus project (i.e., portions of the Perris Valley Line Project located near the project site). Accordingly, these cumulative projects have the potential to generate construction emissions at the same time as the Glen Mor 2 project. If construction of these projects does overlap, their emissions could combine to worsen region-wide air quality. In addition, because the EH&S expansion and the Perris Valley Line Project are located in the general vicinity of the Glen Mor 2 site (approximately 200 and 225 meters north of the project site, respectively), emissions from these projects could combine to worsen localized air quality at nearby sensitive receptor locations. With respect to regional emissions of construction-related NO_x, mitigation has been identified that would reduce this impact to a less-than-significant level. However, with respect to localized emissions of construction-related PM₁₀ and PM_{2.5} at the Glen Mor 2 site, no mitigation measures are available to reduce this impact to a less-than-significant level. Therefore, the project's contribution to this localized cumulative impact would be significant and unavoidable.

As discussed in Impact 3.2-3, the project's operational emissions would not exceed SCAQMD thresholds. Therefore, the project's long-term contribution to cumulative air quality impacts would not be considerable. Additionally, as stated in Impact 3.2-1, growth related to the project would be

consistent with the growth anticipated in the AQMP, which is intended to bring the Basin into attainment status for all criteria pollutants.

Section 3.3
Biological Resources

3.3.1 Introduction

This section describes the affected environment and regulatory setting for biological resources and describes the impacts on biological resources that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts.

The information in this section is based on the University of California, Riverside 2005 Long Range Development Plan Final Environmental Impact Report (SCH No. 2005041164), herein LRDP EIR, and the *Biological Resources Assessment for the University of California, Riverside Glen Mor 2 Student Apartments* (ICF 2011), prepared by ICF International, herein *Biological Resources Assessment* (Appendix I).

A response to the Notice of Preparation for this project was received from the California Department of Fish and Game (CDFG). The Department noted their role as both a Responsible Agency and a Trustee Agency under CEQA and requested the following be considered in preparing the EIR:

- A complete assessment of flora and fauna within and adjacent to the site, with emphasis on endangered, threatened, and locally unique species and sensitive habitats;
- Consideration of direct, indirect and cumulative impacts with specific measures to avoid, minimize and offset impacts;
- Treatment of impacts to jurisdictional streambeds and riparian resources at a level of detail necessary to support the Department's CEQA obligation as a Responsible Agency for the required Streambed Alteration Agreement; and
- Identification of revegetation, maintenance, and monitoring provisions related to the Arroyo Enhancement element of the proposed project.

The information provided in this section and the associate technical report (Appendix I) has been prepared with these scoping comments in mind. No comments related to biological resources were received during the public scoping meeting.

3.3.2 Environmental Setting

Section 4.4.2 of the LRDP EIR provides a detailed description of the environmental setting for biological resources throughout the UCR campus (section 4.4.2, beginning on page 4.4-2). The environmental setting specific to the proposed project footprint is described below. Additional detail on the environmental setting is available in the *Biological Resources Assessment*.

Vegetation

The project site is partially developed with an existing surface parking lot (Lot 14) and a vacant single-family residence. ICF biologists conducted surveys of the project site to characterize and map the vegetation types present on the site, which identified annual grassland, riparian (including walnut woodland), ruderal, landscaped and developed, as shown on Figure 3.3-1. The estimated on-site acreages of these communities are listed below in Table 3.3-1.

Table 3.3-1. Vegetation Community Acreages

Vegetation Communities	Total within the Proposed Project Footprint (acres)
Annual Grassland	6.38
Riparian (excluding Walnut Woodland)	0.73
Riparian/Walnut Woodland	0.19
Ruderal	2.43
Landscape	4.51
Developed	5.24
Total	19.48 ¹

¹ The difference from the 21-acre figure referenced for the site area throughout this report relates to refinements in the project footprint as the project has developed

The majority of the vegetated portion of the site contains annual grassland. This annual grassland is located primarily on areas that were previously cultivated with orchards and subsequently graded or disturbed, as evidence in the historical aerials (Appendix G of *Biological Resources Assessment*). Ruderal vegetation is found largely on the north side of the arroyo and consists of species typical of highly disturbed environments. Landscaped and developed areas include the existing parking lot, the existing residence, and frontage landscaping along Big Springs Road and Valencia Hill Drive.

Special-Status Plant Communities

The LRDP EIR identifies riparian habitat as a special-status plant community. This community occupies approximately 0.92 acre within the Arroyo, including 0.19 acre of walnut woodland.

Special-Status Plant Species

The literature review conducted in conjunction with the biological resources investigation identified 38 special-status plant species with the potential to occur within the region surrounding the UCR campus.¹ ICF biologists evaluated the potential for each of these species to occur on the project site, based upon observations during the field surveys and information from a variety of other sources.

¹ Special-status species are plants and wildlife species that are legally protected under the CESA, the federal ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. These include "listed species," which are those that are listed as threatened or endangered under the referenced laws, or those that are proposed for listing. These also include plants considered by the California Native Plant Society to be "rare, threatened, or endangered in California and elsewhere." Plant species covered under the Western Riverside Multiple Species Habitat Conservation Plan and species identified as locally-sensitive in the certified LRDP EIR (Table 4.4-1) were also considered in this analysis.



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Figure 3.3-1
Vegetation Communities
Glen Mor 2 Student Apartments

Appendix A of the *Biological Resources Assessment* identifies each of the 38 species, describes the characteristics of associated habitat, and rates the potential for each species to occur within the proposed project footprint.

Listed Plant Species

Only one state and federally endangered plant species, Nevin's barberry, was identified as having a potential to occur within the study area. This rare evergreen shrub is associated with riparian areas and is easily identifiable year-round. Due to the marginal suitability of potential habitat and lack of observation during field surveys, this species is not reasonably expected to occur on the project site.

There is no USFWS designated Critical Habitat for plants within the project's biological study area.

Sensitive Plant Species

There are five sensitive plant species determined to have at least a "low" potential to occur within the project's study area including: Plummer's mariposa lily, Parry's spineflower, Long-spined spineflower, California black walnut, and San Bernardino aster. Based on lack of historical occurrences, the marginal suitability of the habitat, and the lack of observation of the species during the general survey, it is unlikely that Plummer's mariposa lily occurs within the project site.

There are several walnut trees within the on-site arroyo. The LRDP EIR (page 4.4-5) identified the walnuts in this drainage area as a native species, California walnut (*Juglans californica*). The evaluation of walnut trees on the UCR campus by local experts Andy Sanders and Rick Reifner (see Appendix I, reference Regents of the University of California 2008) has concluded that the walnut trees on the campus are hybrids of California walnut and Eastern black walnut and are not the special-status *Juglans californica* ssp. *californica*.

The potential for Parry's spineflower, long-spined spineflower, and San Bernardino Aster to occur within the disturbance limits is low but cannot be ruled out.

Special-Status Wildlife Species

The literature review conducted in conjunction with the biological resources investigation identified 46 special-status wildlife species that have the potential to occur within the region surrounding the UCR campus. ICF biologists evaluated the potential for each of these species to occur on the project site, based upon observations during the field surveys and information from a variety of other sources. Appendix A of the *Biological Resources Assessment* identifies each of the 46 species, describes the characteristics of associated habitat, and rates the potential for each species to occur within the proposed project footprint.

Listed Wildlife Species

Based upon the literature review, four listed wildlife species were identified as having potential to occur in the vicinity of the project site. These include: state Threatened Swainson's hawk, state and federally Endangered least Bell's vireo, federally Threatened coastal California gnatcatcher, and state Threatened/federally Endangered Stephen's kangaroo rat. Evaluation of habitat conditions within the project site concluded that none of these listed wildlife species have the potential to occur

within the disturbance limits in roles (i.e., breeding) that present the potential for significant impacts. Impacts related to potential loss of foraging habitat for bird species is addressed separately under Other Wildlife Resources.

There is no USFWS designated Critical Habitat for wildlife species within the project footprint.

Sensitive Wildlife Species

Eighteen sensitive wildlife species were determined to have at least a low potential to occur within the study area. These include two reptiles (rosy boa and coastal western whiptail); nine birds (white-tailed kite, northern harrier, Cooper's hawk, golden eagle, burrowing owl, loggerhead shrike, western yellow warbler, Bell's sage sparrow, and rufous-crowned sparrow); and seven mammals (Los Angeles pocket mouse, Dulzura pocket mouse, western yellow bat, pallid bat, California mastiff bat, San Diego black-tailed jackrabbit, and northwestern San Diego pocket mouse). For white-tailed kite, northern harrier, Cooper's hawk, golden eagle, western yellow warbler, Bell's sage sparrow, rufous-crowned sparrow, California mastiff bat, western yellow bat and pallid bat, the site does not provide suitable habitat for breeding or roosting, but may provide suitable foraging habitat (see Raptor Foraging Habitat, below). The remaining species with at least a "low" potential to occur are:

- Rosy boa – low potential to occur in annual grassland and riparian habitats within the disturbance limits.
- Coastal western whiptail – low potential to occur in riparian habitat.
- Burrowing owl - moderate to high potential to occur within the disturbance limits. In accordance with LRDP EIR MM 4.4-1(a), protocol surveys for burrowing owl were conducted and burrowing owls were determined to be absent at the time of the survey.
- Loggerhead shrike - low potential to breed and forage in the annual grassland and adjacent scattered trees located on the site.
- Los Angeles pocket mouse – low potential to occur within the arroyo.
- Northwestern San Diego pocket mouse - low potential to occur within the arroyo and annual grassland.
- Dulzura pocket mouse – low potential to occur in grassland habitat.
- San Diego black tailed jack rabbit – low potential to occur within the Arroyo and annual grasslands.

Other Wildlife Resources

Nesting Birds

Nesting birds are protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. The vegetated portions of the study area contains suitable nesting habitat for various avian species. There is a high likelihood for various bird species to nest on the project site.

Raptor Foraging Habitat

Raptors are also protected by the MBTA and California Fish and Game Code. Raptors generally require large areas of foraging territory and prey availability over relatively large home ranges, particularly during breeding season. Outside of the breeding season, raptors continue to require

large areas to forage and disperse. Suitable raptor foraging habitat typically includes open areas, such as grasslands, with little to no disturbance. The riparian, annual grassland and ruderal communities on the project site have the potential to support raptor foraging. These areas also represent suitable foraging habitat for the bat species identified as potentially occurring within the project vicinity.

Wildlife Corridors

Based on the LRDP EIR biological technical report, large wildlife movement corridors no longer exist within the LRDP area due to the presence of suburban and urban development around the campus, which has effectively cut off most wildlife movement to areas outside of the campus boundaries. Within the campus, small corridors exist along the drainages; however, these corridors do not function to connect isolated habitats or habitat resources. The Arroyo within the study area is one of these drainages that may facilitate wildlife movement within the campus; however, the Arroyo is isolated from habitat patches and, therefore, does not function as a wildlife movement corridor (LRDP EIR, page 4.4-10).

Wetlands and Jurisdictional Waters

The Great Glen Arroyo spans the entire length of the north side of the project site. The Arroyo contains an ephemeral stream feature that typically carries water only after storm events, with the primary source of flows being runoff from off-campus tributary areas. Off campus tributary flows enter at the upstream end of the Arroyo through an existing culvert at Valencia Hill Drive. The Arroyo flows generally westward, continuing downstream of the project site in a combination of surface features and buried pipelines that are part of the campus stormwater management system. The campus system discharges into the City of Riverside storm drain system, which in turn discharges to the Santa Ana River, and ultimately the Pacific Ocean.

In accordance with LRDP Mitigation Measure 4.4-3(a), the proposed project area was surveyed through a routine-level jurisdictional delineation for stream, wetland, and riparian features that are potentially under the jurisdiction of the United States Army Corps of Engineers (USACE), CDFG, and/or the Regional Water Quality Control Board (RWQCB). The results of the survey are provided below, and the features are shown in Figures 3.3-2 and 3.3-3. Additional regulatory background and details regarding the delineated features described below are provided in the *Biological Resources Assessment*.

Wetlands

Wetland data was collected at two locations within the project site. The first location is within the Arroyo where riparian vegetation is present. Based upon the lack of wetland soils, this location does not constitute a wetland as defined in the applicable regulations.

Wetland data was also collected at an isolated location that supports riparian vegetation adjacent to the existing parking lot. Based upon lack of wetland soils and the source of water supporting this vegetation, this resource is also not a wetland.

Waters of the United States

The on-site Arroyo contains 0.23 acres of non-wetland waters of the United States subject to USACE and RWQCB jurisdiction. The upstream end of the drainage coincides with the outlet of the existing culvert at Valencia Hill Drive. The ephemeral drainage is characterized by a sandy channel varying in

width between 1 and 7 feet. The channel meanders generally westerly for approximately 2,200 feet until dissipating temporarily in the ruderal field located west of the Lothian Residence Hall. Outside the proposed project footprint, this drainage connects via sheet flow over a distance of about 400 feet to a downstream naturalistic feature known as the Junction Basin, which is a component of the East Campus stormwater management system.

The upstream reaches of the drainage are unvegetated and deeply incised for approximately 1,500 feet until flowing across a dirt path northeast of Lothian Hall. After crossing the dirt path, the channel becomes shallow, and meanders through an area of cottonwood-willow riparian habitat for approximately 180 feet until encountering a second path with a sediment-choked culvert. It is apparent from the riparian vegetation community that the choked culvert results in ponding in this area. Evidence of a flowline is very poor downstream of this culvert. From this point, the drainage meanders downstream through a predominantly non-native vegetation community for approximately 375 feet and through a culvert that passes under a paved path. Downstream of the paved path, the flowline is more discernable and continues for approximately 130 feet before dissipating in a field.

CDFG Jurisdiction

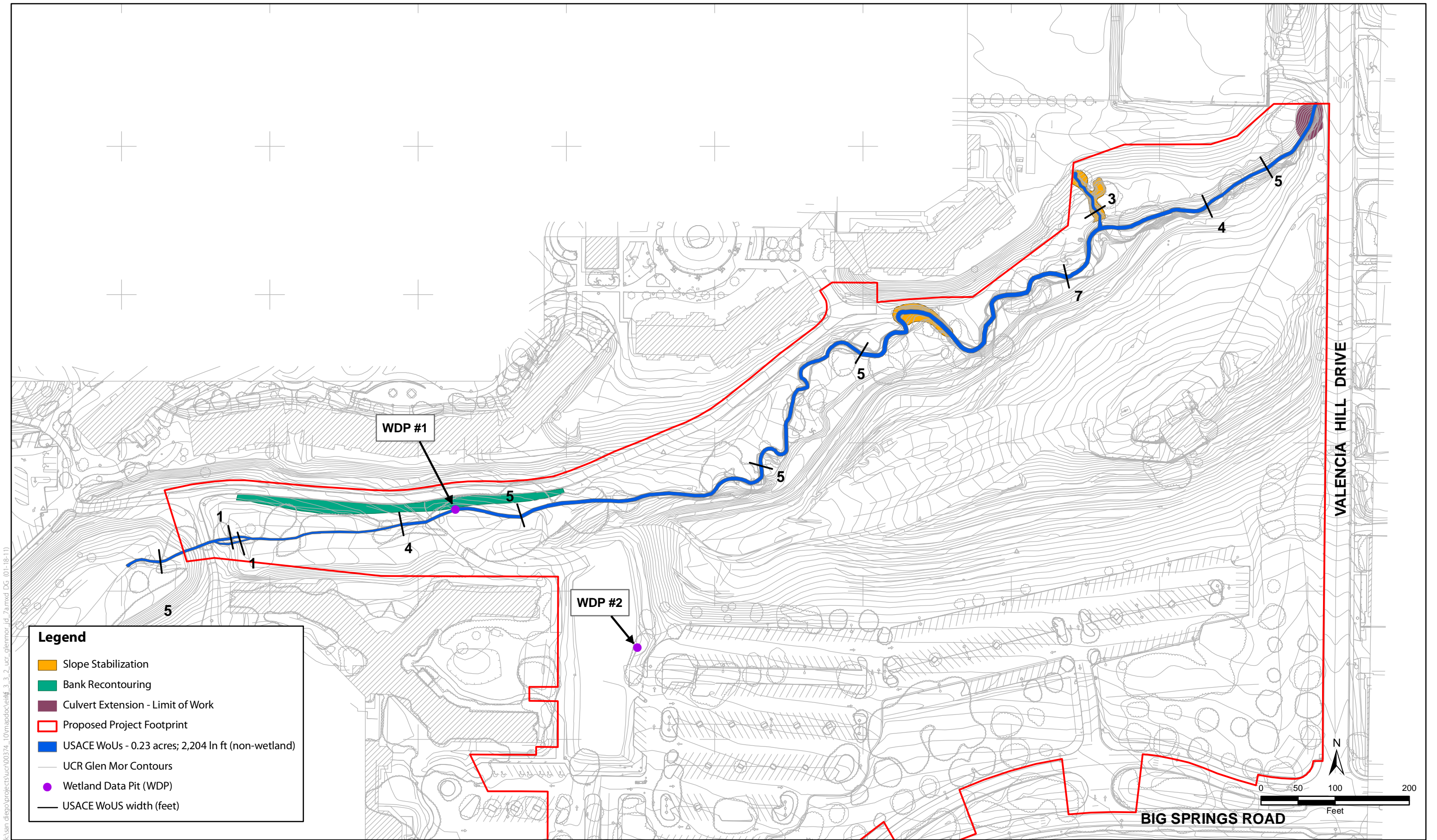
CDFG jurisdiction within the survey area totals 1.42 acres, including 0.74 acre of unvegetated streambed, and 0.92 acre of vegetated riparian habitat². The CDFG streambed corresponds to the USACE stream, but is wider in places due to differences in State and federal regulatory definitions of the jurisdictional features. The upstream portion of the jurisdictional streambed ranges in width from 10 feet to 28 feet. The balance of the jurisdictional streambed, generally downstream of the dirt footpath located north of Lothian Hall, ranges in width from 1 to 5 feet. With the exception of the riparian patches discussed below, the bed of the channel is unvegetated.

The streambed is best described in four segments: an upstream reach of approximately 1,500 feet, a riparian reach of approximately 180 feet, a 375-foot reach between two culverts, and a downstream reach of approximately 130 feet. The banks of the entire channel are dominated by non-native ruderal vegetation. The 1,500-foot upstream segment has an unvegetated bed with dominant vegetation on the adjacent terraces and banks consisting of Fremont's cottonwood, mulefat, hybridized California black walnut, blue elderberry, coast live oak, Mexican palo verde, brittlebush, Mexican fan palm, and tree tobacco. The 180-foot riparian segment is dominated by Fremont's cottonwood, Gooding's black willow, arroyo willow, desert grape, tamarisk, and hybridized California black walnut. The 375-foot reach downstream of this riparian area has an unvegetated bed with vegetation on the banks consisting of a mix of native and non-native species. The 130-foot downstream segment of the drainage has an unvegetated bed; vegetation associated with the banks of this segment consists of black willow, mulefat, and eucalyptus.

Habitat Conservation Plans

The project site is located within the plan area for the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP). UCR is not a permittee under the WRC MSHCP and, therefore, is not afforded regulatory coverage for impacts upon species covered by the plan. The project site is not within an area that is targeted for conservation under the WRC MSHCP. Aside from policies related to Burrowing Owl and Riparian/Riverine resources, the project site is outside of areas requiring surveys or other special considerations under the plan.

² Total CDFG jurisdiction is not the sum of streambed and riparian because the riparian overlaps the streambed in areas.



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Figure 3.3-2
USACE Jurisdictional Delineation
Glen Mor 2 Student Apartments

The project site is also located within the plan area for the Long Term Habitat Conservation Plan for Stephens' Kangaroo Rat in Western Riverside County. This plan has proceeded to an implementation stage where all reserve lands have been acquired and conservation effort is directed at management of the reserve system. For lands outside the reserve, plan compliance is limited to payment of a mitigation fee that supports reserve management. The campus is not within an SKR reserve and the University is exempt from the fee program.

The LRDP designates the Arroyo in the northern portion of the project site as *Naturalistic Open Space*. The LRDP EIR defines *Naturalistic Open Space* as "areas that look and feel natural but no longer retain the true natural or native characteristics that were historically found in the region." The mapped boundaries of the *Naturalistic Open Space* as depicted on the LRDP land use plan are conceptual. As part of the Glen Mor 2 project, the Arroyo limits have been evaluated and specific boundaries have been defined based upon topography and natural resources (see Arroyo Limits in Figures 3.3-4 and 3.3-5). The depicted boundary generally corresponds to the transition to upland vegetation and includes the streambed, associated riparian vegetation and upper terraces of the drainage. LRDP Planning Strategy Conservation 1 and Programs and Practices 4.4-1(b) and 4.4-2(a) require preservation and enhancement of the campus arroyos.

3.3.3 Regulatory Framework

Information on the federal and state regulations governing biological resources at UCR is provided in Section 4.3.3 of the LRDP EIR, beginning on page 4.3-11. Regulations addressed in the LRDP EIR that pertain to this project include the Endangered Species Act of 1973; Migratory Bird Treaty Act; Clean Water Act of 1972; California Endangered Species Act; CEQA Treatment of Listed Plant and Animal Species; California Wetlands Conservation Policy of 1993; and California Fish and Game Code. One regulation that was not addressed in the LRDP EIR is the Stephen's Kangaroo Rat Habitat Conservation Plan, which is discussed above under Habitat Conservation Plans.

3.3.4 Impact Analysis

This section presents a discussion of the potential biological resources impacts associated with the construction and operation of the proposed project.

Methodology

The impacts analysis provided herein is based on a combination of information and judgments developed through direct evaluation of the site, current regulatory information, professional judgment, and existing environmental documents. For plant and animal species, potential project impacts are considered for all special-status species identified as having at least a "low" potential for occurrence, as defined in Appendix A of the *Biological Resources Assessment* (Appendix I).

Significance Criteria

The criteria for analyzing the project's impacts to biological resources are based on Appendix G of the State CEQA Guidelines. Based on the proposed project activities, the project setting, programmatic impact analysis provided in the 2005 LRDP EIR, project-specific analysis provided in

the NOP Initial Study, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments project does not present the potential for significant impacts for the following Significance Criteria.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Surveys conducted in support of this analysis included a delineation of jurisdictional waters and wetlands. The project site does not support wetlands as defined by Section 404 of the Clean Water Act. Methods and results for the delineation are presented in Appendix I.

- Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

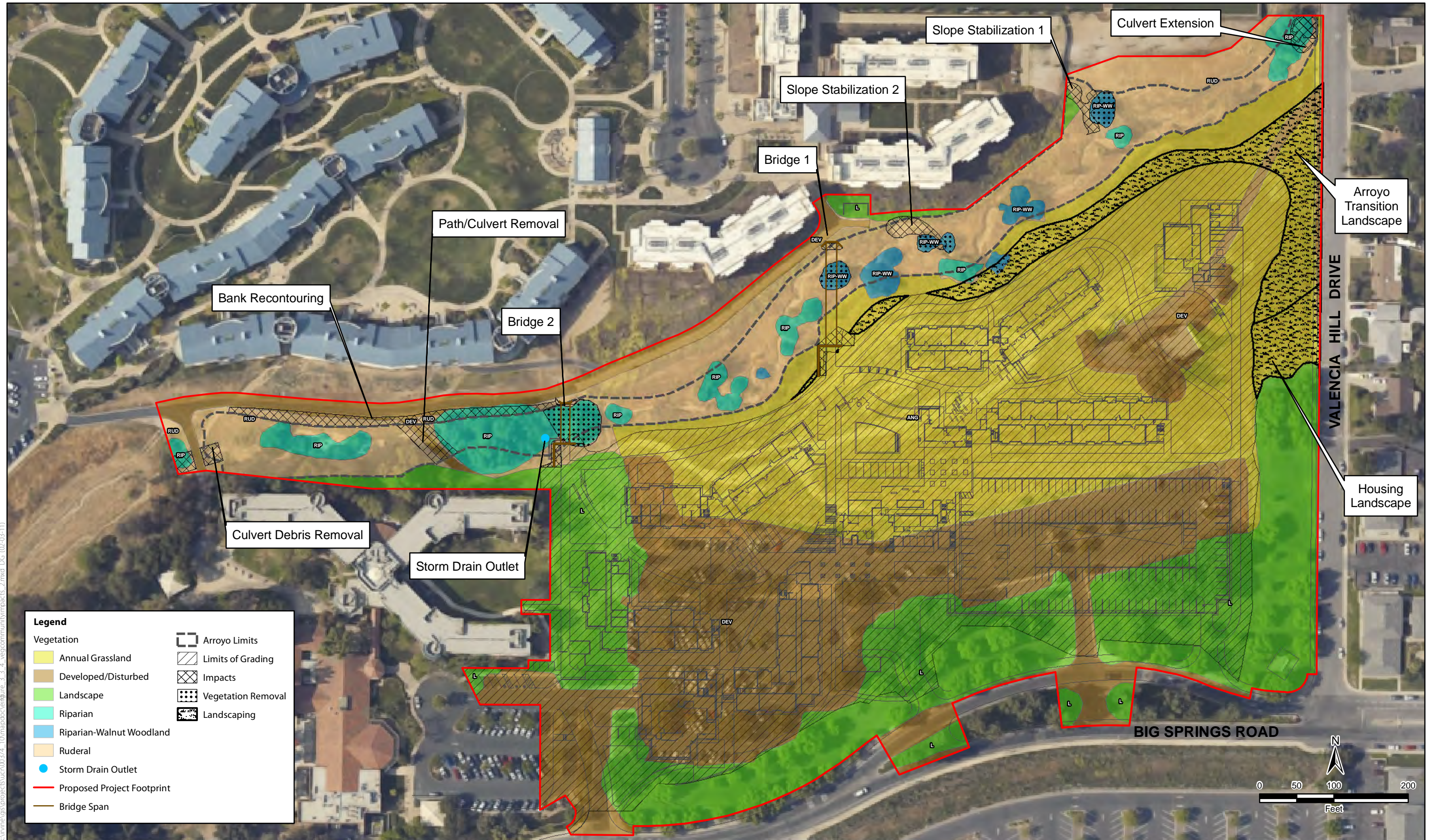
The LRDP EIR (page 4.4-36) concludes that implementation of the LRDP program would result in a less-than-significant impact to wildlife movement and wildlife nursery sites with incorporation of LRDP Mitigation Measures 4.4-4(a) and (b), which require avoidance of occupied nests. The LRDP EIR recognizes that the arroyo within the proposed project footprint may be utilized by nesting birds, and for wildlife foraging and movement; however, the arroyo is not characterized as a “wildlife corridor” because surrounding urban development isolates the arroyo from any connecting open space areas. This issue is adequately addressed in the LRDP EIR and no further analysis is required. Implementation of LRDP MMs 4.4-4(a) and (b) with respect to general bird nesting activity is discussed under of Impact 3.3-7.

- Would the project conflict with any applicable policies protecting biological resources?

The LRDP EIR (page 4.4-39) concludes that implementation of the LRDP program would be in substantial conformance with local policies protecting biological resources due to compliance with conservation policies embodied in the LRDP (Planning Strategies: Open Space 1, Open Space 2, Open Space 3, and Conservation 1). These policies are included as part of the Glen Mor 2 student housing project and are reflected in the approach to improvements within and adjacent to the Arroyo. The program-level determination regarding substantial conformance with policies protecting biological resources remains valid; impacts will be less-than-significant and do not require further consideration at a project level.

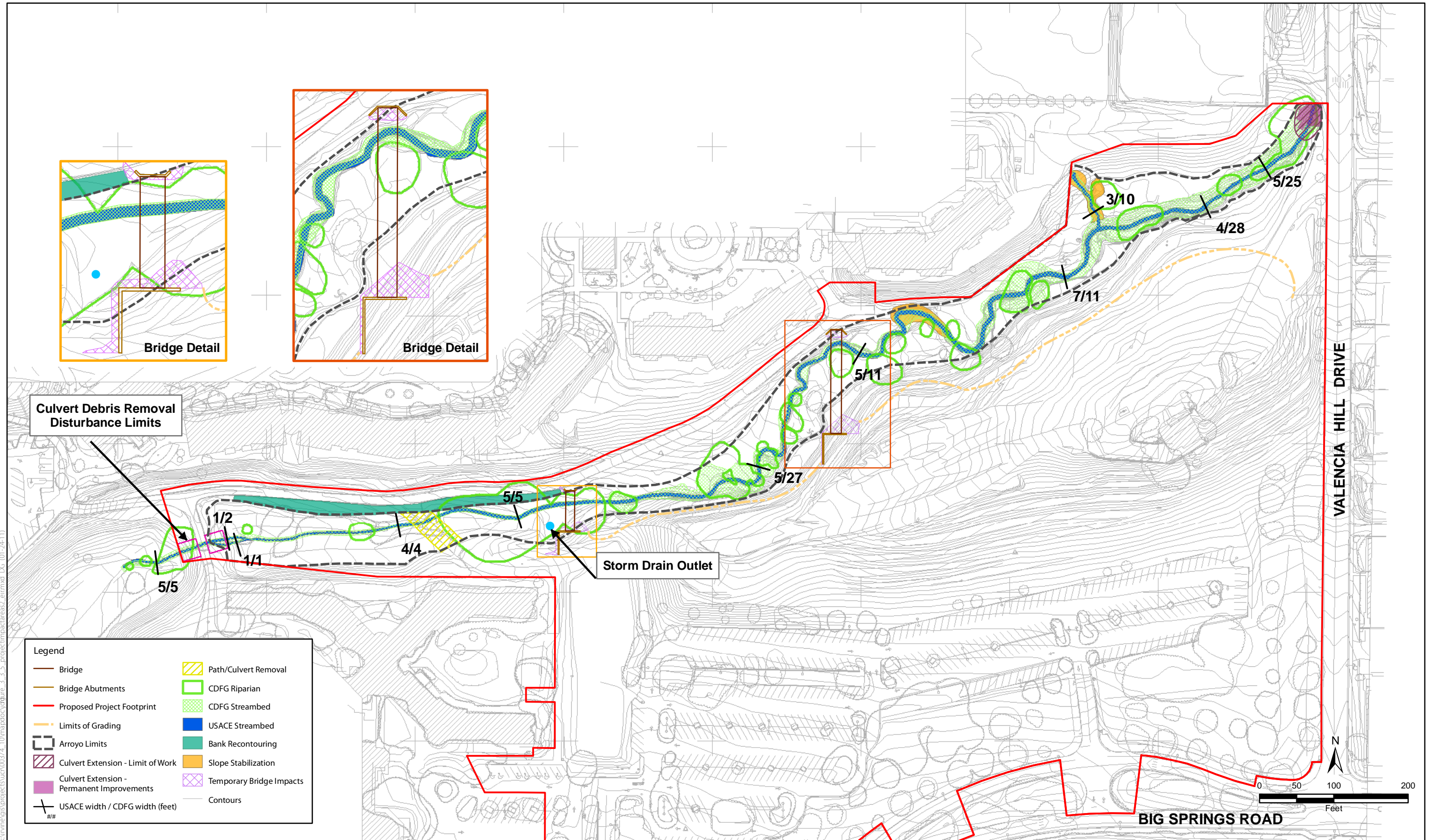
The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments project would result in a significant impact if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.
3. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan.



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Figure 3.3-4
Vegetation Community Impacts
Glen Mor 2 Student Apartments



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Figure 3.3-5
Arroyo and Jurisdictional Water Impacts
Glen Mor 2 Student Apartments

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to biological resources. The applicable measures are identified in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the measures address avoidance and minimization of impacts to natural resources and wildlife species, best management practices to minimize indirect impacts of development in proximity open space lands, and restoration of riparian habitat. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

The vegetation communities (including annual grassland, ruderal, and riparian habitat) within the study area provide suitable foraging habitat for raptors. The LRDP implements Planning Strategies that conserve native habitat, including native grasslands (Conservation 1); conserve limited land resources and agricultural fields (Conservation 3); preserve natural hillsides (Open Space 1 and 2); preserve existing landforms, native plant materials, and where appropriate, restore habitat and foraging values (Open Space 3). With implementation of these strategies, the LRDP EIR (page 4.4-30) determined that program-level impacts to foraging habitat for raptors and other special-status birds would be less than significant. The LRDP EIR identified those portions of the Glen Mor 2 site proposed for residential and related support uses for development, and the proposed project would preserve and enhance the on-site *Naturalistic Open Space*. The potential loss of foraging habitat on the Glen Mor 2 site is consistent with the level of impact considered in the LRDP EIR. The program-level impact determination remains relevant and no program-level mitigation is required for loss of foraging habitat. This determination relative to bird species also applies to the sensitive bat species noted in the Existing Setting section, inasmuch as the bat species involved forage in the same habitats.

The analysis presented below focuses on the project's impacts on the three special-status plant species and eight special-status wildlife species that were identified as having at least a "low" potential to occur on site.

Impact 3.3-1: Project construction would impact potentially suitable habitat for Parry's spineflower, long-spined spineflower, and San Bernardino aster. *Impact Determination: Less than Significant*

The sandy soils within the Arroyo, ruderal vegetation, and annual grassland vegetation represent potentially suitable habitat on the project site for these species. For Parry's spineflower, proposed impacts areas in potential habitat occur within and adjacent to the Arroyo (0.03acre permanent and 0.1 acre temporary) and constitute less than 10 percent of the potentially suitable habitat on the project site. Temporary disturbances associated with the Arroyo enhancement program would not result in extensive soil disturbance that would disturb the seed bank of this species, if present. Potential impacts on this species are limited in nature and would be less than significant.

Long-spined spineflower is potentially associated with the annual grassland and ruderal vegetation communities on the Glen Mor 2 site, the majority consisting of the annual grassland areas that have been subject to disturbances dating to the early 1900s. The long-standing disturbance of the grassland areas makes it unlikely that the site provides a seed bank that would support a viable population of this plant. Should individuals of long-spined spineflower occur within the annual grassland, they would be isolated from populations of this species and provide limited benefit to the regional population. On this basis, permanent impacts on individuals of this species, should they be present within the annual grasslands on the site, would not result in significant impacts on the species. Habitat suitable for long-spined spineflower also occurs within the Arroyo. Potential temporary impacts on suitable habitat for this species within the Arroyo would be the same as those discussed above for Parry's spineflower. Potential impacts on this species are limited in nature and would be less than significant.

San Bernardino aster is potentially associated with habitat in the on-site arroyo. Permanent impacts to potentially suitable habitat for this species total approximately 0.025 acre, or approximately 1 percent of such habitat on the project site. Temporary impacts would affect approximately 0.15 acre of suitable habitat, which is approximately 6.5 percent of such habitat on the project site. The proposed Arroyo enhancement program would improve habitat conditions for this species within a 3.9-acre area. On balance, the project would improve conditions for this species, if present. On this basis, the nominal potential impacts would be less than significant.

Impact 3.3-2: Project construction would impact suitable habitat for burrowing owl. *Impact Determination: Less than Significant with Mitigation Incorporated*

One special-status wildlife species, burrowing owl, has a moderate to high potential to occur within the disturbance limits. In accordance with LRDP EIR MM 4.4-1(a), protocol surveys for burrowing owl were conducted on the project site, as discussed in the *Biological Resources Assessment*. Based upon the current surveys, this species is not present on the site. However, based upon local distribution and dispersal characteristics, it is possible for burrowing owl to occupy the site prior to construction. If this species were present on the site during construction, grading could disturb burrows, remove foraging habitat, and result in direct harm to individual animals. This would be a significant impact warranting mitigation. With implementation of Mitigation Measure BIO 1, the project's potential impacts to burrowing owls would be reduced to a less-than-significant level.

BIO 1: Pre-Construction Surveys for burrowing owl.

In compliance with LRDP mitigation measures 4.4-1(a) and 4.4-1(b), a burrowing owl preconstruction survey shall be performed by a qualified biologist not more than 30 days prior to ground disturbance and/or construction-related activities. The survey shall cover suitable habitat within the project footprint and a 300-foot buffer.

The survey will include the peak activity period for the species (1 hour before sunrise to 2 hours after, or 2 hours before sunset to 1 hour after). Burrowing owls will be sought visually and aurally, along with sign (i.e., pellets, tracks, feathers, and active burrows). If no burrowing owls are found during the preconstruction survey, no further actions are required.

If burrowing owls are found outside the project footprint and it is outside the species nesting window of February 1 through August 31, no action is needed. If owls are present within the project footprint and thus direct removal of an occupied burrow would occur outside of February 1 through August 31, passive relocation by a qualified ornithologist shall be conducted.

If an owl is found present during February 1 through August 31 and the occupied burrows are within 300 feet of project activities, a qualified ornithologist will assess whether the species is nesting or not. If burrowing owls are nesting within 300 feet of the limits of disturbance, a 300-foot avoidance buffer shall be flagged by the ornithologist and no construction will occur within the flagged off area until it has been determined by the ornithologist that the pair is no longer nesting and young (if present) have fledged.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.3-3: Project construction would impact suitable habitat for rosy boa. *Impact Determination: Less than Significant*

The riparian and annual grassland communities on the project site provide marginal habitat for this species. The majority of the existing riparian habitat would be avoided and the Arroyo enhancement element of the proposed project would improve both the extent and quality of riparian habitat in the Arroyo, providing increased functions and values of the habitat for this species. Because of the regular mowing of the annual grassland and the lack of rocky cover, the likelihood of individuals of this species to be present within the annual grassland is low. Based on the avoidance and enhancement of potential habitat in the Arroyo and marginal suitability of the on-site grassland areas, potential impacts on rosy boa as a result of the project would be less than significant.

Impact 3.3-4: Project construction would impact suitable habitat for coastal western whiptail. *Impact Determination: Less than Significant*

The riparian vegetation on the project site provides potentially suitable habitat for this species. The majority of the existing riparian habitat would be avoided and the Arroyo enhancement element of the proposed project would improve both the extent and quality of riparian habitat in the Arroyo, providing increased functions and values of the habitat for this species. Potential impacts to individuals of these species should they be present during construction would not substantially affect the regional populations of the species. The potential impact upon this species is less than significant.

Impact 3.3-5: Project construction would impact suitable habitat for Los Angeles pocket mouse, Dulzura pocket mouse and Northwestern San Diego pocket mouse. *Impact Determination: Less than Significant*

Los Angeles pocket mouse and northwestern San Diego pocket mouse have the potential to occur within the Arroyo and northwestern San Diego pocket mouse and Dulzura pocket mouse have the potential to occur within annual grassland. The on-site grassland is not expected to provide suitable habitat due to the ongoing disturbance associated with existing campus management practices (i.e., mowing). Potential impacts to individuals of these species should they be present during project implementation would not substantially affect the regional populations of these species. Additionally, restoration of approximately 3.9 acres within and adjacent to the Arroyo would result in improved functions and values of suitable habitat for arroyo-associated species. The potential impact on these species is less than significant.

Impact 3.3-6: Project construction would impact suitable habitat for San Diego black-tailed jack rabbit. *Impact Determination: Less than Significant*

San Diego black tailed jack rabbit has the potential to occur within the Arroyo and the annual grassland community. Direct impacts resulting from construction activities are expected to be minimal as individuals of San Diego black tailed jack rabbit that may be within the project footprint would have the ability to leave the disturbance area. The project entails limited permanent impacts to the Arroyo and the Arroyo enhancement element of the proposed project would improve both the extent and quality of habitat in the Arroyo, providing increased functions and values of the habitat for this species. The annual grassland on the site is an isolated patch of habitat and the LRDP preserves open space areas that are more suitable for this species (see Raptor Foraging discussion in the introduction to Criterion 1, above). Mortality of any individuals of San Diego black tailed jack rabbit that may be present would not adversely affect the regional population of this species. Considering the limited scale of potential impacts upon the regional population, impacts on this species as a result of the project would be less than significant.

Impact 3.3-7: Project construction may result in impacts on nesting birds, including loggerheaded shrike. *Impact Determination: Less than Significant with Mitigation Incorporated*

Although no individual loggerheaded shrike were identified during project surveys, the potential remains for nests of this species, as well as other birds (including raptors), to be present prior to project construction. The project entails removing mature trees that could contain nests and entails other activity that could disturb nests of birds protected under state and federal regulations. This is a significant potential impact warranting mitigation. The following mitigation measure, which is similar to LRDP EIR Mitigation Measures 4.4-4 (a) and (b) provides additional project-specific provisions and would reduce impacts to less-than-significant levels.

BIO 2: Pre-Construction Nesting Bird Surveys.

In compliance with LRDP Mitigation Measures 4.4-4 (a) and (b), when vegetation removal will occur between February 15 and September 15, nesting bird surveys shall be conducted by a qualified biologist a maximum of 7 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone. Nesting bird surveys shall be conducted for all vegetation communities including annual grassland, ruderal, riparian, riparian-walnut woodland, landscape, and trees within developed portions of the site. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

Level of Significance after Mitigation

Impacts would be less than significant.

Criteria 2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?

Vegetation mapping conducted on the project site indicated the site features annual grassland, riparian (including walnut woodland), ruderal, landscaped and developed areas, acreages of which are shown in Table 3.3-1. Of these, only the riparian habitat, all of which is located in the Arroyo, is considered a sensitive natural community. Impacts on the other communities would be less than significant because they are not considered sensitive. Therefore, this impact discussion focuses on the project's impacts on riparian habitat.

The jurisdictional delineation for the Glen Mor 2 project site identified stream and riparian features that are jurisdictional under regulations administered by the California Department of Fish and Game, U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service. In addition, the arroyo which contains these jurisdictional features is designated as *Naturalistic Open Space* in the LRDP. Because impacts to the jurisdictional features and *Naturalistic Open Space* are associated with impacts to the riparian community, impacts in these regards are also addressed under this criterion.

Impact 3.3-8: Proposed project improvements within the Arroyo would result in temporary and permanent impacts on riparian habitat. *Impact Determination: Less than Significant with Mitigation Incorporated*

Though the overall intent of the project work in the Arroyo is to restore natural vegetation and create a more naturally functioning system, some of this work would remove existing vegetation and result in temporary impacts from construction access and equipment activity. Work affecting riparian habitat includes the culvert extension at Valencia Hill Drive, installation of a storm drain outlet, stabilization and recontouring of the arroyo banks, installation of two bridges, and removal of debris at the existing culvert at the west end of the site. Figure 3.3-4 depicts the relationship of each of the proposed improvements to existing riparian vegetation.

Permanent impacts to riparian habitat would result from the proposed culvert extension at Valencia Hill Drive and the proposed new storm drain outlet near Bridge 2. Temporary impacts include removal of trees in conjunction with slope stabilization and bridge improvements. Additional detail on the nature of these impacts is provided in the *Biological Resources Assessment* (Appendix I, beginning on page 5-7). Impacts to riparian vegetation total 0.02 acre of permanent impacts and 0.21 acre of temporary impacts, of which 0.08 acre is walnut woodland. Riparian habitat is considered a sensitive biological resource; therefore, this is a significant impact warranting mitigation.

LRDP EIR Program and Practice 4.4-2(a) and Mitigation Measure 4.4-3(b) require avoidance of riparian habitat whenever feasible and, when avoidance is not feasible, preparation of a mitigation program to replace impacted habitat. The conceptual plan for the Arroyo restoration and enhancement plantings (Appendix E of Appendix I) defines the arroyo in four longitudinal reaches based upon existing conditions and various factors affecting the potential for successful restoration. Each reach is characterized by three lateral zones – the stream channel and associated bottom area (Arroyo Zone), a natural transition area (Arroyo Buffer Zone) and a buffer to developed areas (Development Transition Zone). The proposed planting palette for the Arroyo Zone includes native riparian container plants (including trees, shrubs and groundcover) and a native scrub seed mix; the

proposed planting palette for the Arroyo Buffer Zone includes native scrub container plants and a native scrub seed mix. The Development Transition Zone will be addressed in the development site landscape plans, with preliminary plans identifying native grasses, scrub container plants, and native trees (California Sycamore, California Buckeye and Coast Live Oak).

The 1.5 acres of restored and enhanced riparian habitat to be provided through the proposed arroyo enhancement program will offset the project's temporary and permanent impacts to approximately 0.23 acre of riparian habitat by expanding the extent and improving the quality of riparian habitat within the arroyo, which currently provides 0.92 acre of riparian habitat. The following project-specific mitigation measures will provide for detailed implementation of the Arroyo enhancement program and LRDP Program and Practice 4.4-2(a) and Mitigation Measure 4.4-3(b) as part of the Glen Mor 2 project.

BIO 3: Minimize Temporary Impacts.

Prior to initiation of ground disturbance activities, disturbance limits adjacent to or within the Arroyo shall be clearly staked, including disturbance limits associated with Arroyo improvements. Access to the Arroyo shall be limited to existing roads and shall be fenced to ensure unnecessary encroachment to the Arroyo does not occur.

Prior to initiation of ground disturbance activities within the Arroyo (excluding Arroyo enhancement), a qualified biologist (defined as a biologist with demonstrated experience with the resources being avoided) will identify biological resources to be avoided during construction, including jurisdictional streambeds and riparian habitat. The qualified biologist should review the final design plan and conduct a site visit to all areas within and adjacent to the Arroyo where construction activities would take place. Silt fencing or similar avoidance fencing shall be placed around the disturbance limits required for each project component within or adjacent to the Arroyo. No impacts on the Arroyo shall occur outside of staked disturbance limits. CDFG jurisdictional streambed at the tree removal area for Bridge 1 shall be avoided if practicable. At a minimum, the following areas shall be avoided:

- riparian vegetation adjacent to the path/culvert removal;
- riparian vegetation located at the northwest side of the south abutment temporary work area for Bridge 2;
- CDFG jurisdictional streambed located on the south side of the bank recontouring area.
- The mature cottonwood tree near the Valencia Hill culvert extension work limit.

BIO 4: Prepare and Implement Revegetation Plan.

All areas identified as temporarily affected by construction activities shall be revegetated with native vegetation. All areas with riparian habitat shall be revegetated with similar riparian vegetation. Other vegetated areas (i.e., ruderal and annual grassland communities) that are temporarily affected shall be revegetated with native vegetation suitable to that location. If trees/riparian vegetation cannot be replanted within the disturbance limits of the respective project component, a suitable area within the Arroyo shall be selected for restoration. The restoration location will, at a minimum, provide replacement habitat of equal acreage as the affected location.

Prior to removal of vegetation, a qualified biologist shall conduct an assessment of functions and values for the Arroyo, including all areas where vegetation removal will be conducted. Areas assessed will be of sufficient area and number to assess functions and values of the entire Arroyo to demonstrate success of the Arroyo enhancement program. The monitoring component of the revegetation plan shall include functions and values that are of equal or greater value than existing conditions as performance criteria.

Prior to initiation of ground disturbance activities, a revegetation plan shall be prepared and submitted to the relevant agencies (i.e., USACE, CDFG). The revegetation plan should be sufficient to meet agency requirements and at a minimum shall include the following:

- a map and acreage of vegetation to be temporarily affected,
- location of revegetation area,
- functions and values assessment of areas to be affected,
- functions and values assessment of entire Arroyo within the project footprint,
- plant palette,
- performance criteria, and
- monitoring guidelines.

Level of Significance after Mitigation

Less than significant.

Impact 3.3-9: The project would impact areas designated as Naturalistic Open Space under the LRDP. *Impact Determination: Less than Significant with Mitigation Incorporated*

Proposed project improvements would impact approximately 0.3 acre of the total area of approximately 2.5 acres within the Arroyo, which corresponds to the LRDP *Naturalistic Open Space* designation. Permanent impacts are estimated at 0.02 acre and relate to permanent improvements associated with the Valencia Hill culvert extension, the bridge abutments, and the new storm drain outlet near Bridge 2. Temporary impacts of approximately 0.27 acres are attributed to the temporary work limits for the culvert extension, storm drain outlet, bridge abutments, path/culvert removal, and culvert debris removal. Tree removal associated with the two bridge spans and the slope stabilization work is also treated as temporary in recognition of the enhancements to be provided through the proposed replanting program (see program description and Project-level Mitigation Measure BIO 4 under impact 3.3-8, above). Finally, temporary impacts would occur during implementation of the proposed enhancement plantings as a result of vegetation removal and the presence of restoration personnel. Additional detail regarding project impacts within *Naturalistic Open Space* is provided in Appendix I, beginning on page 5-9. Figure 3.3-5 depicts the relationship of each of the proposed improvements to the *Naturalistic Open Space* (corresponds to Arroyo Limits).

While the Glen Mor 2 project does not avoid impacts to the stream channel within the *Naturalistic Open Space*, the single permanent impact to the stream channel is a nominal encroachment at the upstream limits to extend the existing culvert at Valencia Hill Drive. This culvert extension was not originally part of the project and was added in response to scoping comments by the neighboring residents and the City of Riverside requesting construction of a sidewalk along the campus frontage

on Valencia Hill Drive. The finished condition would establish a new edge and would not interrupt the remaining *Naturalistic Open Space*. This permanent impact to an approximately 900-square-foot area within the *Naturalistic Open Space* is less than significant.

The Arroyo enhancement program will remove exotic species and establish new plantings within *Naturalistic Open Space*. The enhancement program includes 1.2 acres of riparian plantings, 0.3 acre of riparian enhancement (exotics removal), and 2.4 acres of native upland restoration, of which 1.0 acre would occur within the defined *Naturalistic Open Space*. In the context of the enhancement provided by this restoration program, the nominal project impacts within the *Naturalistic Open Space*, both permanent and temporary, are less than significant. Project-level Mitigation Measure BIO 4 (see impact 3.3-8) ensures that disturbed functions and values within the *Naturalistic Open Space* will be restored and enhanced and that project impacts in this regard would be less than significant.

LRDP Program and Practice 4.4-1(b) establishes best management practices to reduce disturbance of *Naturalistic Open Space* areas. Project-level Mitigation Measures BIO 3 (see impact 3.3-8), BIO 5, and BIO 6 provide for minimization of disturbance limits, worker education, and construction monitoring to ensure compliance with this LRDP measure. Construction activity also has the potential to affect the *Naturalistic Open Space* by unintentionally spreading exotic species in the area on equipment or through seed dispersal during vegetation removal. Project-specific measure BIO 7 will minimize the potential for spread of exotic species. With the incorporation of these measures, the project's temporary impact on the *Naturalistic Open Space* would be less than significant.

BIO 5: Conduct Worker Education Program.

To ensure compliance with best management practices identified in LRDP Program and Practice 4.4-1(b), a biologist shall conduct a worker education program for all construction personnel prior to personnel initiating ground disturbance activities. The education program will include a discussion of the importance of the Arroyo and areas within the Arroyo to be avoided (including parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.

BIO 6: Conduct Biological Monitoring During Construction.

A qualified biologist shall monitor the project for compliance with best management practices outlined in LRDP Program and Practice 4.4-1(b). Monitoring will occur as determined necessary by the biological monitor but will occur at a minimum of one time per 5 working days when work is located in or adjacent to the Arroyo. The limits of areas considered "adjacent to the Arroyo" will be determined by a qualified biologist in conjunction with the impact minimization planning under Mitigation Measure BIO 3.

BIO 7: Remove Exotic Species.

To minimize potential indirect impacts on *Naturalistic Open Space*, during vegetation removal during construction, any exotic species removed shall be properly handled to prevent sprouting or re-growth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area during the course of construction. Cleaning of any equipment shall occur at least 300 feet from the Arroyo.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.3-10: The proposed project would impact areas that meet the definition of “waters of the United States” and jurisdictional “streambed.” *Impact Determination: Less than Significant with Mitigation Incorporated*

Jurisdictional waterways within the project site consist of the stream channel within the Arroyo and associated riparian vegetation. As described in more detail under Existing Setting, the jurisdictional resources within the Arroyo consist of approximately 2,200 feet of streambed between 1 and 28 feet in width, and approximately 0.92 acres of associated riparian habitat.

Encroachments within state and federal jurisdictional limits consist of permanent and temporary impacts. Impacts can also be characterized by the impacted resource, namely the stream channel or associated riparian areas. Figure 3.3-5 depicts the relationship of each of the proposed improvements to existing jurisdictional resources.

Work that would have a permanent impact on jurisdictional waters includes the culvert extension at Valencia Hill Drive, one area of proposed slope stabilization on the north bank of the arroyo, and the proposed storm drain outlet. The culvert extension would replace an approximately 20 foot length of the existing stream with a buried pipeline. The storm drain inlet would not affect the stream, but would be located within the associated riparian zone that is jurisdictional under state regulations. The work at slope stabilization Site 1 would entail placement of rock or a commercial stabilizer product within an approximately 75 foot length of stream, with soil backfill and replanting. Permanent impacts total 0.01 acre of waters of the United States, 0.02 acre of CDFG jurisdictional streambed, and 0.02 acres of CDFG riparian habitat. Approximately 107 feet of streambed would be impacted. Additional detail on the nature of these impacts is provided in the Biological Resources Assessment (Appendix I, beginning on page 5-17). Project implementation will require permits from the state and federal agencies with jurisdiction over these resources (U.S. Army Corps of Engineers, California Department of Fish and Game, and Santa Ana Regional Water Quality Control Board). Each agency was consulted, in conjunction with the notice of preparation, regarding the Glen Mor 2 project.

Temporary impacts would occur with each of the project elements noted above, as well as with slope stabilization Site 2, recontouring the arroyo banks, installation of the bridges, removal of the path and associated culvert, and removal of debris at the culvert at the west end of the site. Relevant aspects of the project involving temporary impacts are as follows:

- The culvert extension at Valencia Hill Drive will involve temporary impacts within a limited work area extending beyond the limits of the permanent improvements. A mature cottonwood tree at the edge of the work limits will be protected under Mitigation Measure BIO 3 (see Impact 3.3-8).
- Slope stabilization Site 2 occurs just upstream of proposed Bridge 1 at a sharp bend in the stream, where the channel has shifted to an engineered slope at the edge of the existing Glen Mor 1 student apartments site. Approximately 100 feet of the existing stream channel would be filled. The adjacent arroyo bottom outside the proposed stabilization limits is approximately 50 to 100 feet wide and the channel would be expected to migrate laterally in a direction away from the stabilization area. Improvements are expected to include a pilot channel to direct surface flows away from the stabilization area and into the adjacent arroyo bottom.

- Recontouring of the arroyo banks generally downstream of Bridge 2 entails work in an area where the riparian canopy overhangs the proposed work limits. Mitigation Measure BIO 3 includes provisions for avoidance of the jurisdictional stream at this location.
- Temporary impacts associated with the bridges relate to work limits for the bridge abutments and tree removal within the footprint of the spans. Mitigation Measure BIO 3 includes provisions for avoidance of riparian vegetation at the northwest corner of the south abutment of Bridge 2.
- The path and culvert removal involves work at the edge of a riparian habitat patch. Mitigation Measure BIO 3 includes provisions for avoidance of the riparian zone at this location.

Temporary impacts total 0.03 acre of waters of the United States, 0.07 acre of CDFG jurisdictional streambed, and 0.40 acre of CDFG riparian habitat. Approximately 375 feet of streambed would be impacted. Additional detail on the nature of temporary impacts to jurisdictional resources is provided in the Biological Resources Assessment (Appendix I, beginning on page 5-17).

All jurisdictional waters and streambeds are within the Arroyo and are subject to the Arroyo Enhancement program, which includes 1.5 acres of riparian restoration and enhancement. Implementation of the avoidance and minimization measures and habitat restoration program provided for in Mitigation Measures BIO 3 through 7, above, would minimize temporary impacts upon jurisdictional water resources and compensate for permanent impacts.

Level of Significance after Mitigation

Impacts would be less than significant.

Criteria 3: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?

The project occurs within the plan area of two adopt habitat conservation plans – the Long Term Habitat Conservation Plan for Stephens’ Kangaroo Rat in Western Riverside County (SKR HCP) and the Western Riverside County Multiple Species Habitat Conservation Plan(WRC MSHCP). As explained in the Existing Conditions section on page 3.3-6, there are no provisions of the SKR HCP relevant to activities on the UCR campus. While the University is not a participant in the WRC MSHCP, it is necessary to address project consistency with the provisions of this plan in the context of this CEQA significance criterion. Accordingly, this impact focuses on the project’s compliance with the WRC MSHCP.

Impact 3.3-11: The project would not conflict with the Western Riverside County MSHCP. *Impact Determination: Less than Significant with Mitigation Incorporated*

UCR is not a permittee under the WRC MSHCP and, therefore, is not afforded regulatory coverage for impacts on species covered by the plan. However, to address CEQA provisions related to consistency with habitat conservation plans and natural community conservation plans, survey methods, impact assessment, and proposed mitigation measures have been conducted and developed in accordance with the WRC MSHCP and associated implementation guidance.

The project site is located within the boundaries of the Cities of Riverside & Norco Area Plan. The entire campus is outside of the WRC MSHCP Criteria Area, which identifies areas potentially subject to acquisition for long-term conservation. Beyond the evaluation of potential involvement of Criteria

Area lands, determination that a particular activity is consistent with the WRC MSHCP also entails consideration of a variety of plan policies directed at protection of specific species and resources. Plan policies applicable to consistency evaluation for the Glen Mor 2 site are those related to burrowing owl and riparian/riverine/vernal pool resources.

The surveys for burrowing owl conducted within the project site followed the WRC MSHCP survey methodology for this species. The protocol surveys determined that the site provides potentially suitable habitat, but that burrowing owl did not occupy the site at the time of the surveys. Due to the presence of suitable habitat, there is potential for burrowing owls to move onto the site in the interim period before construction begins. Project-specific Mitigation Measure BIO 1 requires pre-construction surveys for burrowing owl and identifies measures to avoid impacts on burrowing owl if they are identified in the pre-construction surveys. This measure is consistent with avoidance measures for burrowing owl in the WRC MSHCP.

The riparian/riverine/vernal pool policies under the WRC MSHCP are directed at avoidance of impacts to these habitats and associated sensitive species. The current biological surveys of the Glen Mor 2 site revealed no evidence of vernal pools or other ponding conditions suitable to support the fairy shrimp species protected under this WRC MSHCP plan policy. For riparian habitat, the plan requires consideration of suitability for three protected bird species – least Bell’s vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The information provided in Appendix A of the Biological Resources Assessment (Appendix I) documents the basis for the determination that the existing riparian habitat on the site is not suitable for any of these species.

The WRC MSHCP stipulates that riparian habitat is to be avoided to the greatest extent practicable. If riparian habitat is affected, proposed mitigation must demonstrate equal or superior functions and values of the habitat. The Glen Mor 2 project as proposed entails minimal impacts on riparian habitat and project-specific Mitigation Measures BIO 3, 5, 6, and 7 (see impacts 3.3-8 and 3.3-9) provide for implementation of various measures during project construction to ensure impacts are minimized. Implementation of the Arroyo Enhancement Program as described in the discussion of impact 3.3-8 and as required under project-level Mitigation Measure BIO 4, would result in superior functions and values within the restored and enhanced riparian habitat.

The Glen Mor 2 project site is outside the WRC MSHCP Criteria Area and the special survey areas for small mammals, amphibians, narrow endemic plants and criteria area plants. With implementation of project-specific Mitigation Measures BIO 1 and 3 through 7, proposed activities and improvements would not conflict with WRC MSHCP provisions for burrowing owl and riparian/riverine/vernal pool resources. On this basis, impacts in this regard are less than significant.

3.3.5 Cumulative Impacts

All but one of the cumulative projects listed in Section 3.0.4—the eight-lot residential subdivision northeast of the site—are projects that entail redeveloping existing uses and would not have any habitat impacts or impacts on listed species. The MND prepared for the referenced subdivision identified impacts on California gnatcatcher and on nesting raptors. The former do not have the potential to occur on the Glen Mor 2 project site; therefore, there is no cumulative impact. Nesting birds have the potential to occur on the Glen Mor 2 site, but cumulative impacts would be avoided because both projects would implement preconstruction nest surveys and avoid birds in nests if

found during the surveys, pursuant to Mitigation Measures BIO 1 and 2 for the Glen Mor 2 project and Conditions of Approval 9 and 10 for the City subdivision project. None of the other projects are located along the arroyo or other on- or off-campus water features; therefore, there would be no cumulative impacts on jurisdictional waters. All of the cumulative projects would comply with the WRC MSHCP and no identifiable inconsistencies are evident from initial consideration of the nature and location of these cumulative projects. Finally, none of the other projects are located within areas designated in the LRDP as *Naturalistic Open Space*. Therefore, there would be no cumulative impact on LRDP habitat protection provisions.

Section 3.4

Cultural Resources

3.4.1 Introduction

This section describes the affected environment and regulatory setting for cultural resources and describes the impacts on cultural resources that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures, in addition to any applicable LRDP mitigation measures that have been incorporated into the project, to reduce these impacts. The cultural resources analysis is based in part on the findings of the historical resources evaluation conducted for the project by Chambers Group, Inc. (Chambers). This report is provided in Appendix J.

Information that was available at the time the NOP was issued indicated that this resource area did not require additional analysis in the EIR. However, subsequently, additional information about the historical context of the on-site house was revealed during interviews conducted in conjunction with the Phase I site assessment. This section discloses new information regarding the date of construction as well as the history of the subject property, including the structure.

UCR received a response to the NOP from the Native American Heritage Commission (NAHC), confirming that the project site does not contain any listed sacred lands and providing a list of tribal contacts who may be interested in activity on the project site. Native American consultation conducted to date for this project is discussed in this section of the EIR. Documents related to the Native American consultation are provided in Appendix K.

3.4.2 Environmental Setting

Cultural Resources

The LRDP EIR discusses the prehistory, ethno-history, and history of the Riverside region as well as past human inhabitation and uses within the region, including the campus site, and provides relevant background information regarding the project site's environmental setting with respect to cultural resources. Please see Section 4.5.2 of the LRDP EIR (beginning on page 4.5-1) for a complete discussion of the regional setting.

Archeological Sites

The LRDP EIR incorporates the results of the campus-wide cultural resources survey conducted in 2002 for the LRDP. The cultural resources technical report is included as Appendix E of the LRDP EIR. The technical report integrated the results of a background research, a records search at the Eastern Information Center, and field reconnaissance to identify portions of the planning area that may be sensitive for cultural resources.

The campus-wide survey identified two recorded archeological sites on campus, a prehistoric grinding slick on a bedrock outcrop located in the southeast hills and the historic Gage Canal, which traverses the western side of the campus. Neither of these sites is located on or near the project site. A site-specific records search conducted in 2008 for the Glen Mor 2 project (described in more detail below) confirmed that no previously recorded archeological sites are located on the Glen Mor 2 project site.

Native American Consultation

UCR consulted with the NAHC and regional Native American tribes in spring 2003 as part of the LRDP EIR analysis. NAHC identified no sacred lands on campus, and no other known resources were identified by NAHC or tribal representatives as a result of that consultation.

UCR initiated the Native American consultation process for the Glen Mor 2 project by including the NAHC in the NOP mailing. NAHC responded to the NOP and confirmed that the project site does not contain any listed sacred lands. NAHC provided a list of tribal contacts who may be interested in activity on the project site, and UCR submitted letters to these representatives that announced the project and solicited information regarding the project site. To date, UCR has received no letters in response to the tribal consultation letters. All correspondence related to Native American consultation for this project is included in this EIR as Appendix K.

Historic Structures

The campus-wide cultural resources survey conducted for the LRDP EIR identified four buildings or building complexes that had been formally recorded as historic resources, including the Citrus Experiment Station, the Barn Group, the University Cottage, and the Insectary. None of these buildings is located on or near the project site. In addition to these formally recorded sites, the LRDP EIR identifies 10 other buildings or building complexes from the historic period that, because of their age, would require analysis pertaining to their status as historic resources if a project were to propose modifications to the respective buildings. These potentially historic structures are mapped in Figure 4.5-1 of the LRDP EIR. None of these 10 resources is located on or near the project site.

The vacant residence on the project site is identified in Section 4.5 of the LRDP EIR (listed as 3671 Valencia Hill Drive) and shown in Figure 4.5-1 of that document. The prior analysis concludes that the structure does not meet any criteria for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) (see page 4.5-11 of the LRDP EIR). In response to a comment on the LRDP EIR, UCR indicated that this structure was older than stated in the LRDP EIR and concluded that future modification of the structure would require an evaluation of this feature's potential for consideration as a historical resource. In accordance with this finding, UCR conducted an additional cultural resources inventory for the project site in 2008 to analyze the structure's eligibility, in anticipation of its demolition for the Glen Mor 2 project, with further investigation presented in a November 2010 revision to the report (see Appendix J).

The 2010 cultural resources report confirms the earlier findings that the residence is not eligible for listing in the NRHP or CRHR, nor does it meet criteria for listing by the City as a local landmark. The report identifies the structure as having been constructed in 1925 (differing from the LRDP EIR's suggestion of 1955) and indicates that the structure's first resident was likely Charles E. Dunlap, an orchard grower who purchased the land in 1922. The property was acquired in 1949 by UCR, and subsequently, it served as home to the campus groundskeeper and his family. The report concludes

that though the residence may have been associated with locally important historical themes pertaining to Riverside's agricultural operations and the development of UCR, the project site did not play a significant role in those historical themes according to the available evidence. The report also concludes that the structure does not represent the work or influence of a master architect or builder, and it does not embody the distinctive characteristics of a period, type, or method of construction. The house is noted as a typical example of Spanish Eclectic and Mission Revival architecture. It lacks integrity because of additions that occurred after its initial construction. For these reasons, the structure was deemed ineligible for CRHR listing and is not considered a significant historical resource. The subsequent historical report also documented the remnants of a structural feature located west of the residence, noting it as an accessory structure to the residence. This structure is not eligible for CRHR listing for the same reasons listed for the residence, and it is also not a significant historical resource.

The 2010 addendum presented unconfirmed anecdotal information that the residence was once occupied by a commander at either the U.S. Air Force's March Air Field or the nearby World War II-era Camp Haan, an Army Service Depot and prisoner-of-war camp. This was qualified in the 2010 document as tertiary information acquired through an interview in which the interviewee recalled a story told by another individual, with no specifics or evidence to support the information. Archival research conducted for the cultural resources reports did not reveal any supporting evidence for this anecdotal information as it applies to the project site or the on-site residence. For additional detail on these conclusions, please see Appendix J.

Paleontological Resources

The LRDP EIR describes paleontological conditions throughout the campus, concluding that "The rocks and sediment underlying the campus are unlikely to be fossil-bearing." For a complete discussion of the campus's paleontological setting, see Section 4.5.2 of the LRDP EIR (beginning on page 4.5-3). Given the conclusions of the LRDP EIR, the rocks and sediment underlying the project site are unlikely to be fossil-bearing.

3.4.3 Regulatory Framework

The relevant regulatory framework for the treatment of cultural resources is described in Section 4.5.3 of the LRDP EIR. There are no other regulations pertinent to the project site beyond those listed in that section. However, because the eligibility requirements for the CRHR (referenced in Section 4.5.4 of the LRDP EIR) are not fully described in the LRDP EIR and are relevant to the project, they are listed below.

California Register of Historic Resources (PRC Section 5020)

The CRHR is described as "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (CCR Title 14 Section 4850.1). "Historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1q).

A substantial adverse change, as defined by the PRC, constitutes “demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired” (PRC Section 5020.1q).

There are four criteria for determining CRHR eligibility, as defined by California Department of Parks and Recreation Code:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; and
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

3.4.4 Impact Analysis

This section presents a discussion of the potential cultural resources impacts associated with the construction and operation of the proposed project and identifies mitigation measures that would reduce significant impacts to less-than-significant levels.

Methodology

The analysis in this section is based on the work of professional archeologists and historians. It was incorporated into the LRDP EIR and presented in the project-specific historical resources report (Appendix J). The methods used by these professionals included record searches, literature research, and surveys to determine the presence or absence of significant cultural resources.

Significance Criteria

The criteria for analyzing the project’s impacts on cultural resources are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and the available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the following significance criterion (additional discussion is provided in Section 5 of the initial study [Appendix A]):

- Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Given the conclusions of the LRDP EIR, the rocks and sediment underlying the project site are unlikely to be fossil-bearing. Furthermore, Program and Practice 4.5-4 requires construction specifications to address an unanticipated paleontological resource discovery during construction activities.

Established campus procedures for implementation of the LRDP’s mitigation monitoring and reporting program (MMRP) ensure inclusion of such provisions in construction contracts and implementation of contract provisions for the duration of construction. Appendix F provides a cross-reference to ensure implementation of LRDP Programs and Practices 4.5-4 for the Glen Mor 2 project.

- Would the project disturb any human remains, including those interred outside of formal cemeteries?

LRDP Programs and Practices 4.5-5 requires all construction activities to stop and the Riverside County Coroner to be notified in the event that human remains are discovered. Established campus procedures for implementation of the LRDP MMRP ensure inclusion of such provisions in construction contracts and implementation of contract provisions for the duration of construction. Appendix F provides a cross-reference to ensure implementation of LRDP Programs and Practices 4.5-4 for the Glen Mor 2 project.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5, or
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to cultural resources. The applicable measures are identified in Appendix F of this EIR. These applicable measures are considered part of the project for purposes of this analysis. In general, the measures address the need for project-specific historical resources evaluation, the treatment of identified historical resources, and the unforeseen discovery of paleontological resources or human remains. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

This analysis focuses on the project's impact on the on-site residence; there are no other historical resources located on or near the site that would be affected by the project.

Impact 3.4-1: Demolition of the on-site residence would not cause a substantial adverse change in the significance of a historical resource. *Impact Determination: Less than Significant*

The project would entail demolishing and permanently removing the existing residence and associated improvements from the project site. As discussed above in Section 3.4.3, the on-site residence was determined to be ineligible for listing in the CRHR, and it is not considered a significant historical resource. The residence was constructed in the 1920s, probably by orchardist Charles Dunlap, who was associated with the early expansion of Riverside's agricultural industry. This connection does not indicate historical significance of the property because there are more important examples of this aspect of local history, including UCR's Citrus Experiment Station. Because this property was not associated with events or persons important to local, California, or

national history, the structure and associated improvements do not meet CRHR criteria 1, 2, or 4. Because the house is a typical example of Spanish Eclectic and Mission Revival architecture that does not embody the distinctive characteristics of a type, period, or method of construction and does not represent the work or influence of a master architect or builder, the structure and associated improvements do not meet CRHR criterion 3. The site was also deemed ineligible for listing in the NRHP and the City's landmark inventory. Because these structures have been determined to not be significant historical resources, their project-related demolition would be a less-than-significant impact, and no mitigation is required.

Criteria 2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

There are no known archeological resources located on or near the site that could be affected by project construction or operation. However, project construction would entail earthwork in previously undisturbed areas and could unearth undiscovered resources. This impact discussion focuses solely on the project's construction impacts; project operation would not result in any impacts on archeological resources.

Impact 3.4-2: Project earthwork would not cause a substantial adverse change in the significance of an archeological resource. *Impact Determination: Less than Significant with Mitigation Incorporated*

Record searches conducted as part of the cultural resources studies for the LRDP EIR and the project revealed no evidence of archeological resources on the project site. Consultation with the NAHC led to the conclusion that there are no sacred lands on the project site, and follow-up contact with representatives of local Native American tribes has not provided any indication that the site contains archeological resources. However, because artifacts are often located below the surface and, therefore, would not have been identified during previous surveys, absence cannot be determined. In addition, previously undiscovered archaeological resources associated with the on-site residence may exist on the site. The project would entail excavation and other earthwork that could unearth previously undiscovered archeological resources. This is a potentially significant impact that warrants project-level mitigation. Mitigation Measure CULT 1, described below, is based on LRDP EIR Programs and Practices 4.5-3.

CULT 1: Protection and Recovery of Buried Artifacts.

If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease. The university shall contact a qualified archaeologist within 24 hours to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by CEQA), the university shall devote adequate time and funding to salvage the material. Any archaeologically important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of finding that meets professional standards.

Level of Significance after Mitigation

Impacts would be less than significant.

3.4.5 Cumulative Impacts

The project's impact on historical resources consists solely of the demolition of the existing residence and associated improvements located on the project site. None of the cumulative projects would affect these features; therefore, there would be no cumulative impact on historical resources.

All of the cumulative projects entail some degree of earthwork with the potential to disturb undiscovered archaeological resources, just as with the Glen Mor 2 project. Because these cumulative projects are located in the same general geographical area, it is likely that newly discovered artifacts would be associated with the same prehistoric or historic periods. If multiple cumulative projects were to unearth archaeological resources and the resources were not properly managed, this would represent a significant cumulative impact. However, implementation of Mitigation Measure CULT 1 would ensure that the Glen Mor 2 project would not contribute to this cumulative impact by ensuring proper identification and management of the resources. No additional mitigation is required to address the project's contribution to this prospective cumulative impact.

Section 3.5

Geology and Soils

3.5.1 Introduction

This section describes the affected environment and regulatory setting for geology and soils and describes the impacts on geology and soils that would result from implementation of the Glen Mor 2 Student Apartments Project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts. This discussion and analysis incorporates existing conditions information, impact analysis, and mitigation measures from Section 4.6 of the LRDP EIR. The analysis and conclusions in this section are also based in part on the geotechnical investigation prepared for the project in June 2010 by C.H.J., Inc. (CHJ) (Appendix L).

No comment letters related to geology and soils were received in response to the NOP circulated for the project, and no comments in this regard were made at the public scoping meeting.

3.5.2 Environmental Setting

Regional Setting

Background information regarding the geology, soils, and seismic setting for the region is provided in Section 4.6.2 of the LRDP EIR (beginning on page 4.6-1). This information remains relevant and is not repeated in this EIR.

It is noted that the LRDP EIR (page 4.6-5) mentions the inactive Box Springs fault as being located near the northeast corner of campus. The project-specific investigation completed for the Glen Mor 2 project revealed no evidence of on-site faulting.

Site-Specific Setting

The southern portion of the site, which is relatively flat, is occupied by an existing parking lot and landscaping. The northern boundary of the site is defined by a natural drainage feature, with steeply incised slopes in the eastern portion of the site that transition to gentle slopes in the western portion of the site. The central area between the drainage feature and the parking lot is characterized by a long, broad ridge, with a vacant house on the high point, and terracing that was created in conjunction with the site's historic use as a grove. Site elevations range from 1,145 feet on the hillside to 1,070 feet near the southwest corner of the site. The slope gradients in the hillside portions vary from approximately 20 to 30 percent, with near-vertical slopes up to 4 feet high along portions of the arroyo.

Soils

Soils within the project site are generally granular and classified as Site Class D, "stiff soils," according to the California Building Code. Soils within the site include silt, sandy silt, and silty sand, with densities ranging from loose to dense. On-site soils are considered noncritically expansive, with a negligible to moderate potential for hydroconsolidation (water-induced collapse). Consolidation testing indicated the potential for moderate settlement for upper alluvial soils on the site.

The geotechnical investigation encountered undocumented fill, ranging from 2 to 7 feet below ground surface within several borings, with one boring encountering fill at 15 feet below ground surface. The fill consists of silty sand and gravel and is interpreted as deriving from local native materials.

Neither groundwater nor bedrock was encountered in the borings made on the project site, which had a maximum depth of 63.5 feet. Seismically induced liquefaction is not anticipated to be a hazard that could affect the site because of the depth to groundwater. A seismic settlement evaluation by CHJ (Appendix L) indicates that the maximum seismic settlement differential within the site is 2.5 inches.

Flooding

Field observations by CHJ revealed no evidence of flooding within the site. The southern end of the site is adjacent to a 100-year flood zone, but the project would not locate any structures within the 100-year flood zone. According to the City of Riverside General Plan, the site is not within an inundation zone for seismically induced dam or reservoir failure or seiche. The project site is not located near the coast; therefore, no threat of inundation by a tsunami exists.

Faulting

The site is not within or immediately adjacent to an Alquist-Priolo Earthquake Fault Zone, but like much of the Southern California region, the site is in a seismically active area. The closest known active fault to the project site is the San Jacinto fault. The San Bernardino segment is approximately 5.4 miles east/northeast of the site, and the San Jacinto segment is approximately 5.5 miles east/southeast of the site. Because of frequent large earthquakes along this fault, the San Jacinto fault poses the greatest risk to the project. Other faults in the vicinity of the project include the San Andreas fault, approximately 13 miles northeast of the site, the San Fernando fault, approximately 15.5 miles north/northwest of the site, and the Glen Ivy segment of the Elsinore fault, approximately 17 miles southwest of the site. There is no evidence of active or potentially active faults on or in the immediate vicinity of the project site, as determined through a review of geological maps, aerial photographs, and on-site observation. For more information regarding faulting and seismic activity near the project site, see the LRDP EIR, Section 4.6.2, and the CHJ geotechnical investigation (Appendix L).

3.5.3 Regulatory Framework

Information regarding the various federal, state, and local regulations governing geology and soils at UCR is provided in Section 4.6.3 of the LRDP EIR, beginning on page 4.6-7. The LRDP EIR identifies the Uniform Building Code as the federal regulation governing geology and soils. The Uniform Building Code was replaced by the International Building Code (IBC) in 2000.

International Building Code

The IBC is a federal-model building code that is incorporated by reference into local building codes, including the California Building Code. The California Building Code adopted the 2006 IBC in June 2007 (CCR Title 24, Part 2). There has since been a 2009 edition of the IBC. Similar to the seismic zones identified in the former Uniform Building Code, the IBC establishes seismic design categories based on location, building use, and soil type.

University Policy for Independent Seismic Review of Structures

The University of California Policy for Seismic Safety, which is explained in Section 4.6.3 of the LRDP EIR, applies to this project. The University of California also has a policy for independent seismic review of structures. This policy requires a review of the structural seismic design for all University of California capital projects intended for human occupancy or that otherwise affect human safety. The chancellor or an equivalent responsible officer selects the reviewer, who must be a licensed structural engineer with demonstrated experience in seismic design, and the reviewer is contracted and paid directly by the university and not by the architect.

3.5.4 Impact Analysis

This section presents a discussion of the potential geology and soils impacts associated with construction and operation of the proposed project.

Methodology

The impact analysis regarding potential geologic hazards within and surrounding the project site is derived from a geotechnical investigation conducted by professional engineers at CHJ in June 2010 (Appendix L). The investigation included a review of historical aerial photographs and geographic maps, field investigation, and laboratory analysis of on-site soil samples collected from 27 exploratory borings.

Significance Criteria

The criteria for analyzing the project's impacts on geology and soils are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and information provided in the CHJ geotechnical investigation, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criteria outlined below.

- Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)?

The LRDP EIR (page 4.6-11) concludes that development on the campus would not result in a significant impact due to fault rupture because the campus is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1994, nor is it underlain by a known fault. An updated review of geologic maps and aerial photographs, as well as the site investigation conducted by CHJ (Appendix L, page 8), confirms the lack of published information regarding active faulting on the project site and the lack of evidence in photographic records or on the ground pertaining to active faulting.

- Would the project result in substantial soil erosion or the loss of topsoil?

The LRDP EIR (page 4.6-12) concludes that with implementation of relevant LRDP planning strategies and programs and practices, impacts related to soil erosion and loss of topsoil would be less than significant. In addition to campus-wide policies directed at limiting the overall disturbance area and avoiding sensitive areas, the specific construction measures outlined in LRDP Programs and Practices 4.6-2(a) and (b) would reduce the potential for substantial soil erosion and dust generation during both the construction and operational phases. Established campus procedures for implementation of the LRDP MMRP would ensure the inclusion of such provisions in construction contracts and the implementation of contract provisions for the duration of construction. Established campus procedures for compliance with the National Pollutant Discharge Elimination System (NPDES) permit for stormwater runoff would ensure the establishment of finished site treatments to provide long-term erosion control. These LRDP EIR measures are included as part of the project. Appendix F provides a cross-check to ensure implementation of the LRDP measures for this project.

- Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The project would connect to existing sewer infrastructure and would not use septic systems.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving
 - a. Strong seismic ground shaking;
 - b. Seismically related ground failure, including liquefaction; or
 - c. Landslides;
2. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse; or
3. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices that are relevant to geology and soils. The applicable measures are identified in Appendix F of this EIR. These applicable measures are considered part of the project for purposes of this analysis. In general, the measures address the identification of seismic hazards, as well as minimization thereof, and the protection of soil resources through minimization of site disturbance and implementation of best management practices for erosion control. Where necessary, project-specific measures related to LRDP EIR measures that must be implemented during final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking?

The project site is located within the vicinity of several known active faults, which, in the event of seismic activity, could result in strong seismic ground shaking within the project site (see Appendix L, page 8).

Impact 3.5-1: The proposed project would not place people or structures at risk because of strong seismic ground shaking. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

Construction of the proposed project would place structures and people in an area that is at risk of experiencing seismic activity. In accordance with LRDP Programs and Practices 4.6-1(a), a project-specific geotechnical study was completed for the Glen Mor 2 project. The report includes recommended seismic design parameters (Appendix L, page 12) that are based on the anticipated magnitude of ground shaking at the project site and accepted engineering design practices for the abatement of ground-shaking hazards. Established programs for the implementation of the LRDP MMRP provide a mechanism to ensure incorporation of geotechnical report recommendations by the structural engineer in detailed project design as well as inspection verifications during construction.

LRDP Programs and Practices 4.6-1(c) acknowledges the University of California Policy for Seismic Safety and the provision that requires the construction of new buildings to meet the most stringent applicable code provisions. As with Programs and Practices 4.6-1(a), established programs for implementation of the LRDP MMRP provide a mechanism to ensure that design and construction proceed in accordance with applicable governing codes. Therefore, with implementation of LRDP Programs and Practices 4.6-1(a) and (c), the proposed project would not expose people or structures to significant risk due to seismic activity. This potential impact would be less than significant, and no additional project-level mitigation is necessary. Appendix F provides a cross-check to ensure implementation of the LRDP programs and practices for this project.

Criteria 2: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving seismically related ground failure, including liquefaction?

Impact 3.5-2: The proposed project would not expose people or structures to significant hazards involving seismically related ground failure. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

Liquefaction is a process in which strong ground shaking causes saturated soils to lose their strength and behave as a fluid. The geologic conditions for increased susceptibility to liquefaction are shallow groundwater (generally less than 50 feet in depth), the presence of unconsolidated sandy soils, and strong ground shaking. The geotechnical investigation determined that significant liquefaction is not anticipated on the site because of the depth of groundwater. Historic records pertaining to groundwater levels, area well data, and the absence of groundwater in the on-site soil borings are cited in support of the determination that shallow groundwater is not present at the site (Appendix L, page 12).

The project-specific geotechnical evaluation also considered the potential for ground failure due to seismic settlement of dry sandy soils. Evaluation by CHJ indicates that the seismic settlement varies from 0.1 to 2.5 inches, with a maximum differential settlement of 2.5 inches between analyzed borings (Appendix L, page 16). The overexcavation and recompaction required to address soil stability would also address structural issues related to settlement (see the discussion under Criterion 4, below, regarding undocumented fill and loose native soils as well as applicability of LRDP Programs and Practices 4.6-1[a]) (Martin pers. comm.). Anticipated remedial removal depths (in feet below existing grade) are shown in Enclosure "A-2" of the CHJ geotechnical investigation.

Criteria 3: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides?

Impact 3.5-3: The proposed project would not expose people or structures to significant hazards involving landslides. *Impact Determination: Less than Significant*

Landslides are not considered to be hazard at the site, according to the CHJ geotechnical investigation (Appendix L, page 17). No evidence of landslides was observed at the site or in reviews of historic aerial photographs. The site is not identified as having the potential for slope instability, and the older alluvial fan deposits found at the site are not expected to contain well-developed planes of weakness, such as bedding or joints that may be prone to landslides. Given the absence of conditions contributing to landslide potential, this impact is less than significant.

Criteria 4: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact 3.5-4: The project would not be located on a potentially unstable geologic unit. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

The geotechnical investigation identified undocumented fill and loose native soils in portions of the project site that, in their present condition, would be unable to provide uniform or adequate support for the project's proposed structures. As a result, the report recommended that either the buildings be constructed on pile foundations or the loose on-site soils be recompacted so that they can adequately support foundations for the proposed facilities. The project design team elected the latter solution. Therefore, the project would entail overexcavating and recompacting the affected soils. Given the current understanding of the condition of the soils on the site, it is estimated that up to 88,000 cubic yards of soil would be reworked in this manner. This soil preparation work prior to the construction of structures would prevent damage related to unstable geologic conditions. LRDP Programs and Practices 4.6-1(a) provides an existing mechanism to ensure implementation of the recommended overexcavation and recompaction as well as an additional recommendation that calls for the engineering geologist to confirm the extent of removal during grading. No additional mitigation is necessary. Appendix F provides a cross-check to ensure implementation of the LRDP programs and practices for this project.

The CHJ report also identified soils on certain parts of the site with a moderate potential for hydroconsolidation, which means that the soils could collapse if they were to become saturated.

Potential hazards related to this condition are addressed through standard engineering design practices that provide for positive drainage from building foundations, finished surface gradients that prevent water from pooling, and the application of corrosion control measures for pipes, as recommended in the CHJ report (Appendix L, pages 19 and 28). Implementation of the CHJ recommendations is addressed under LRDP Programs and Practices 4.6-1(a) and through established campus practices for project design and construction. No additional mitigation is necessary. Appendix F provides a cross-check to ensure implementation of the LRDP programs and practices for this project.

The project-specific geotechnical investigation concluded that the site is not at risk of landslide, liquefaction, or subsidence events that would create hazardous conditions for people or structures on the site. Therefore, this impact is less than significant, and no project-specific mitigation is required.

Criteria 5: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Impact 3.5-5: The proposed project would not create substantial risk to life of property as a result of expansive soils. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

The geotechnical investigation concluded that the on-site soils are not critically expansive, and they do not require specialized design procedures to reduce risk (see the CHJ geotechnical investigation, page 28, Appendix L). Compliance with the standards set forth in the California Building Code would adequately reduce risks to life and property associated with noncritically expansive soils. This impact is less than significant, and no project-specific mitigation is required. LRDP Programs and Practices 4.6-1(a) provides an existing mechanism for implementation of the geotechnical specialist's recommendation that calls for additional evaluation of the expansion potential of the soils by the soils engineer during grading. Appendix F provides a cross-check to ensure implementation of the LRDP programs and practices for this project.

3.5.5 Cumulative Impacts

As stated in Section 4.6.5 of the LRDP EIR, a project's impacts related to geology and soils are inherently site-specific because each site contains unique geologic conditions. Similarly, none of the cumulative projects listed in Section 3.0.4 of this EIR would combine to create significant cumulative impacts because they are distant from one another, as well as the Glen Mor 2 project, and they would not affect the same site. Section 4.6.5 of the LRDP EIR also notes, however, that seismic hazards can be considered cumulative because as a seismically active area is developed, more people are exposed to potential hazards. Therefore, seismic hazards associated with the Glen Mor 2 project are analyzed in the context of cumulative impacts.

As discussed above and in the CHJ geological investigation (Appendix L), the project site is not located within or immediately adjacent to an Alquist-Priolo Earthquake Fault Zone, and it is not on or in the immediate vicinity of any known earthquake faults. The project would comply with the most stringent applicable seismic safety standards, as described in Programs and Practices 4.6-1(a) of the LRDP EIR, which would minimize the cumulative hazard associated with these new facilities.

Other projects on the UCR campus and in the surrounding area would be subject to similar standards to minimize risks associated with seismic activity. The proposed project would not compound the effects of seismic hazards at other project sites in the surrounding area. Therefore, the effects of the project related to seismic hazards would not be cumulatively considerable.

Section 3.6

Greenhouse Gas Emissions

3.6.1 Introduction

This section describes the affected environment and regulatory setting pertaining to greenhouse gas (GHG) emissions and the impacts related to GHG emissions that would result from implementation of the project. This section is summarized from the discussion of the project's GHG emissions in the Air Quality and Climate Change Assessment Report prepared for the project by ICF in December 2010, which is provided in Appendix H of this EIR.

UCR received no comments in response to the NOP regarding the project's GHG emissions, nor were any concerns in this regard raised at the public scoping meeting.

Definition of Greenhouse Gases

A GHG is a gas in an atmosphere that absorbs and emits radiation. This process is the fundamental cause of the greenhouse effect, a process by which thermal radiation from the earth is absorbed and re-radiated, creating higher temperatures than if direct heating by solar radiation were the only source of warming. The primary GHGs in the earth's atmosphere are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases, which are described below. Scientists believe that increases in the globally averaged atmospheric concentration of GHGs will cause the lower atmosphere to warm, in turn inducing a myriad of changes to the global climate system.

Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and chemical reactions (e.g., cement manufacturing). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also come from livestock and agricultural practices as well as the decay of organic waste in municipal solid waste landfills (California Energy Commission [CEC] 2006).

Nitrous oxide is emitted during agricultural and industrial activities as well as the combustion of fossil fuels and solid waste (CEC 2006).

Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in small quantities, but because they are potent GHGs, they are sometimes referred to as "high global warming potential" gases (CEC 2006).

- *Chlorofluorocarbons (CFCs)*, which are GHGs, are covered under the 1987 Montreal Protocol and used in refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Because they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are GHGs and covered under the Kyoto Protocol.

- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs, which are used in manufacturing, are emitted as by-products of industrial processes. PFCs do not harm the stratospheric ozone layer, but they are strong GHGs.
- *Sulfur hexafluoride (SF₆)* is a colorless gas soluble in alcohol and ether (slightly soluble in water). SF₆ is a strong GHG. It is used primarily in electrical transmission and distribution systems as a dielectric.¹
- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- *Hydrofluorocarbons* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs, which are used in manufacturing, are emitted as by-products of industrial processes. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.

3.6.2 Environmental Setting

State Greenhouse Gas Emissions

When compared with the nations of the world as well as other states in the United States, California has been estimated to be the 12th- to 16th-largest emitter of CO₂ and responsible for approximately 2 percent of the world's CO₂ emissions (CEC 2006). Transportation is responsible for 39 percent of the state's GHG emissions, followed by the industrial sector (21 percent), electricity generation (22 percent), agriculture and forestry (6 percent), and other sources (12 percent). Emissions of CO₂ and N₂O are by-products of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO₂ include uptake by vegetation and dissolution into the ocean. CARB estimates that California's GHG emissions in 2006 totaled approximately 483.87 million metric tons (MMT) in carbon dioxide equivalents (CO₂e), while in 1990, they were 433.29 MMT CO₂e (CARB 2009a).

Scientists believe the global changes resulting from GHG emissions will have unique and potentially severe impacts in the western United States, California, and the region surrounding the campus. Current research efforts coordinated through CARB, CEC, California EPA (Cal/EPA), the University of California system, and others are examining the specific changes to California's climate that will occur as the earth's surface warms. Scientists believe that climate change could affect the natural environment in California in the following ways (among others):

- rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta, due to ocean expansion;
- extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;

¹ An electrical insulator that is highly resistant to the flow of an electric current.

- an increase in heat-related human deaths and infectious diseases as well as a higher risk of respiratory problems caused by deteriorating air quality;
- reduced snow pack and streamflow in the Sierra Nevada, affecting water supplies and winter recreation;
- potential increase in the severity of winter storms, affecting peak streamflows and causing flooding;
- changes in growing-season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- changes in the distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by 2040 (CEC 2006). As such, the number of people potentially affected by climate change as well as the amount of anthropogenic GHG emissions expected under a "business as usual" (BAU)² scenario is expected to increase. Changes similar to those noted above for California would also occur in other parts of the world, with regional variations in the resources affected and vulnerability to adverse effects.

GHG emissions in California are attributable to human activities associated with the industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (CEC 2006) as well as natural processes.

Greenhouse Gas Emissions at the Project Site

The project site currently includes a parking lot, serving residents of the nearby housing precinct. This parking lot is not a direct traffic generator on its own. Rather, trips to and from the parking lot are generated by the residence halls and apartments it serves, which, in turn, accommodate student enrollment at UCR. Therefore, the project site does not currently have any considerable sources of GHG emissions under existing conditions.

3.6.3 Regulatory Framework

The federal, state, and local regulations pertinent to the project's GHG emissions are discussed below.

Federal

On December 7, 2009, the EPA administrator issued an "endangerment finding," stating the agency's view that current and projected concentrations of CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ threaten the public health and welfare of current and future generations. Additionally, the administrator found that combined emissions of CO₂, CH₄, N₂O, and HFCs from motor vehicles contribute to GHGs, an

² The California Air Pollution Control Officers Association defines BAU as "the projection of GHG emissions at a future date based on current technologies and regulatory requirements in the absence of other reductions." This is used as a reference point for potential increases in GHG emissions.

endangerment to public health and welfare. Although this finding in itself did not place requirements on industry, it is an important step in EPA's process to regulate GHGs. On December 23, 2010, EPA issued a press release, announcing its intent to propose GHG emissions standards for power plants in July 2011 and refineries in December 2011, with the standards to be finalized in May 2012 and November 2012, respectively.

State

A variety of legislation related to climate change has been enacted in California, much of which sets aggressive goals for GHG reductions within the state. The key pieces of legislation listed below are applicable to the proposed project.

- Executive Order S-3-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by the 2020, and (3) 80 percent below the 1990 levels by 2050.
- Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, sets the same overall GHG emissions reduction goals as Executive Order S-3-05 while further mandating that CARB create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.
- The AB 32 Scoping Plan contains the main strategies California will use to reduce GHGs from the BAU emissions levels projected for 2020 back down to 1990 levels. As part of the scoping plan, CARB is involved with rule-making, which, as of October 2010, it anticipates will culminate in rule and regulation adoption in early 2011, to reduce GHG emissions and achieve the emissions cap by 2020.
- Senate Bill 1368 (Perata) prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant.
- Senate Bills 1078 and 107 obligate investor-owned utilities, energy service providers, and community choice aggregators to procure an additional 1 percent of retail sales per year from eligible renewable sources until 20 percent is reached by no later than 2010.
- The State CEQA Guidelines, as amended in 2010, require lead agencies to analyze a project's GHG emissions. The guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, not withstanding compliance with adopted regulations or requirements" (Section 15064.4).

University of California Sustainability Commitments

The University of California Board of Regents issued sustainability policy principles in July 2003. In June 2004, the University of California president formally issued the Presidential Policy on Green Building Design and Clean Energy Standards. This policy has since been expanded, revised, and renamed the Policy on Sustainable Practices.

With guidelines and goals in the areas of sustainable transportation, climate protection practices, sustainable operations and maintenance, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, clean energy, and green building, the University of California's Policy on Sustainable Practices is one of the most comprehensive and far-reaching institutional sustainability commitments in the nation. With this policy, the University of California adopted interim system-wide climate-protection targets to reduce GHG emissions to 2000 levels by 2014 and 1990 levels by 2020. These targets mirror AB 32. Furthermore, in March 2007, the University of California signed the American College and University Presidents Climate Commitment, pledging that all 10 University of California campuses will maintain GHG emissions inventories and achieve climate neutrality as soon as possible.

UCR has also adopted a sustainability policy that commits the campus to leadership in environmental research and education, environmentally responsible operations and infrastructure, and environmental stewardship in the community.³ UCR's Office of Sustainability is preparing a Sustainability Action Plan (SAP), which is currently in draft form. The plan will provide a detailed road map to achieving the University of California's and UCR's sustainability policies. In conjunction with the recently published UCR 2010 Climate Action Plan, the SAP identifies measures the campus should pursue to meet sustainability goals, including measures to reduce the campus's GHG emissions. The plan will include programs directed toward sustainable practices related to academic offerings and research, the built environment, energy and climate protection (carbon footprint), food, procurement, recycling and waste management, grounds maintenance, transportation, and water conservation.

UCR Climate Action Plan

The UCR Climate Action Plan was adopted in December 2010. It presents an estimate of the campus's GHG emissions and establishes emissions-reduction targets and implementation strategies to achieve those targets. The discussion under Impact 3.6-2, below, considers the project's conformance to the policies and implementation strategies stated in this plan to reduce the campus's GHG emissions.

Local

SCAQMD Interim CEQA Greenhouse Gas Threshold

With no statewide CEQA significance threshold for GHG emissions, local public agencies within the Basin requested SCAQMD guidance regarding how to determine if GHG impacts from a proposed project are significant. SCAQMD released its interim GHG significance thresholds in October 2008, and its governing board adopted the staff proposal on December 5, 2008. The draft GHG significance thresholds use a tiered approach, with some thresholds suggesting multiple approaches for determining whether a project's GHG emissions are significant. SCAQMD's proposed approach is outlined below.

- Tier 1: If the project qualifies for any applicable exemption under CEQA, then no further GHG analysis is required. If not, it moves to the next tier.

³ UCR Sustainability Program web site. Available: <<http://sustainability.ucr.edu/programs/energyandclimateprotection.html>>. Accessed: December 2010.

- Tier 2: If the project is consistent with a local GHG reduction plan, it is not significant with respect to GHG emissions. If it is not consistent with a local GHG plan or there is no approved plan, the project moves to Tier 3.
- Tier 3: Projects are screened according to prescribed thresholds. The proposed thresholds are 10,000 metric tons of CO₂ equivalent per year (MT CO₂e/year) for industrial projects and 3,000 MT CO₂e/year for commercial and residential projects. Projects that are expected to be below these thresholds are still required to include energy-efficiency components.
- Tier 4: This consists of three decision tree options to demonstrate that the project is not significant with respect to GHG emissions:
 - Incorporate design features to achieve a 30 percent reduction from BAU,
 - Implement applicable AB 32 Scoping Plan measures early, and
 - Establish sector-based efficiency performance standards, such as pounds of GHGs per person, pounds per square foot, etc.
- Tier 5: Remaining projects would be required to purchase off-site offsets to reduce GHG emissions to levels that would be less than the proposed screening level thresholds. Offsets would be purchased for the life of the projects, which is defined as 30 years. Projects that are unable to purchase sufficient offsets would be required to incorporate design features or implement GHG reduction measures to reduce GHG emissions impacts to a level that would be less than the appropriate screening level. GHG emissions from these projects would be considered significant.

The SCAQMD Board of Directors has formally adopted a significance determination threshold of 10,000 MT CO₂e/year for industrial projects in which SCAQMD is the lead agency. However, GHG significance determination thresholds above that level have not yet been adopted by the SCAQMD Board of Directors for other types of projects or other lead agencies.

3.6.4 Impact Analysis

This section presents a discussion of the potential GHG emissions impacts associated with construction and operation of the proposed project.

Methodology

Project-related GHG emissions were estimated using the following methodology: (1) the URBEMIS 2007 software was used to calculate CO₂ emissions and (2) formulas provided in the California Climate Action Registry's General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, version 3.1, were used to calculate CH₄ and N₂O emissions (California Climate Action Registry 2009). GHG emissions other than CO₂ were converted into CO₂e, a method that takes into account the differing global warming potential of different gases. Emissions from the project are compared with BAU conditions, which assumes the establishment of no new technological advancements or regulatory requirements that would be likely to reduce GHG emissions in the future. Project emissions estimates assume the implementation of measures statewide, pursuant to CARB's AB 32 Scoping Plan, to reduce GHG emissions from all GHG sectors through regulations, market mechanisms, and other actions, including increased vehicle efficiency and improved natural

gas transmission and distribution efficiency. These estimates also assume that the project would achieve LEED Gold certification, which would reduce energy consumption and water use by 22 percent and 30 percent, respectively, and thereby reduce project-specific GHG emissions accordingly.

As prescribed by the SCAQMD CEQA Significance Threshold Working Group, the methodology to calculate project emissions includes direct and indirect emissions during short-term construction and long-term project operations. Construction emissions were amortized over the life of the project, defined as 30 years, and added to operational emissions to obtain total annual GHG emissions.

As the lead agency for the Glen Mor 2 project, the University of California has discretion over the significance criteria it uses in its CEQA analysis. The University of California has not adopted quantified impact thresholds for GHG emissions, and as noted above, SCAQMD has not adopted quantitative significance thresholds for GHG emissions for residential projects, nor has the district established any other thresholds relevant to this project. SCAQMD has adopted a significance threshold for industrial projects, but because the Glen Mor 2 project does not entail an industrial component, this threshold is not appropriate for use in analyzing the project's impacts. The California Air Pollution Control Officers Association (CAPCOA) published a white paper in January 2008 that examines the approaches air districts use to assess GHG emissions under CEQA (CAPCOA 2008). One approach found within this white paper, which includes the use of a numerical threshold, was offered as an example of how quantitative comparisons and determinations could be made. However, the threshold has no regulatory authority unless adopted by an air district, and furthermore, CAPCOA acknowledged that the paper containing the threshold is a resource only and "is not intended, and should not be interpreted, to dictate the manner in which an air district or lead agency chooses to address greenhouse gas emissions." Therefore, this threshold is not binding on the project's regulatory authority and is not appropriate for use in this analysis. Other air quality management districts in California, including the Bay Area Air Quality Management District, have adopted explicit numerical thresholds and significance guidance documents for evaluating the significance of GHG emissions; however, these values are based on projected increases in GHG emissions, using growth data related to residential and commercial development specific to the respective districts' boundaries. Because the proposed project is located outside these jurisdictional areas, these thresholds should not be used.

In the absence of quantified thresholds, the impact analysis presented below examines whether the project's GHG emissions would have a significant effect on the environment and whether they would conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Significance Criteria

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG.

LRDP MMRP Measures

GHG emissions was not an issue that required analysis under CEQA when the LRDP EIR was prepared and certified. Therefore, no GHG-related programs and practices or mitigation measures were included in the LRDP EIR.

Impacts and Mitigation Measures

Criteria 1: Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact 3.6-1: The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. *Impact Determination: Less than Significant*

Operation of the proposed project is expected to result in increased emissions of GHGs, largely due to motor vehicle trips, energy consumption, and water consumption. Increased emissions of GHGs would make an incremental contribution to global warming and the adverse global environmental effects thereof, as would most development projects occurring worldwide. This is a contribution to a cumulative impact, as discussed below in Section 3.6.5. On their own, the project's GHG emissions would not be large enough to result in global warming conditions. In the absence of adopted quantitative impact thresholds for GHG emissions, this discussion focuses on whether the project would conflict with the requirement of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

Motor vehicle GHG emissions result from gasoline and diesel fuel combustion. Increased energy and water consumption result in increased GHG emissions, which are associated with the burning of fossil fuels for energy production and the conveyance of water throughout the state. These would occur with implementation of the project.

On December 12, 2008, CARB approved the AB 32 Scoping Plan, which contains emissions-reduction measures that target sources of GHG emissions. The scoping plan has a range of GHG reduction actions, including direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms, such as a cap-and-trade system; and an AB 32 cost-of-implementation fee to fund the program.

The analysis herein takes into account implementation of CARB's AB 32 Scoping Plan, with emissions-reduction measures that will occur statewide, as well as project design features, with the intent to achieve LEED Gold certification. Note that AB 32 Scoping Plan emissions-reduction measures will be implemented at the statewide level, primarily by CARB, and will reduce GHG emissions from all GHG sectors through regulations, market mechanisms, and other actions. Project-related GHG emissions, as they relate to BAU emissions, are presented in Table 3.6-1. As shown therein, with the inclusion of CARB's AB 32 Scoping Plan emissions-reduction measures and the project design features for LEED certification, the proposed project would result in a less-than-significant impact.

Note that the AB 32 Scoping Plan reductions could reduce GHG emissions from construction-related use of heavy-duty on-road trucks, but these were not taken into account in this analysis.

Table 3.6-1. Estimate of Project-Related Greenhouse Gas Emissions (metric tons per year)

	Year 2020 Business as Usual	AB 32 Scoping Plan Reductions	Project Design Reductions	Year 2020 Emissions	Percent Reduction
Emissions Source					
Mobile Source	4,708	(1,402)	—	3,307	29.8%
Natural Gas Combustion	1,064	(96)	(97)	872	18.1%
Electricity Demand-Related	1,612	(532)	(108)	972	39.7%
Water Consumption-Related	75	(25)	(10)	40	46.4%
<i>Construction (amortized)</i>	199	—	—	199	—
Total Project	7,658	(2,054)	(215)	5,390	30.4%
AB 32 Goal					28.5%
Significant Impact?					No

Source: ICF International, 2010.

Criteria 2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG?

Impact 3.6-2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. *Impact Determination: Less than Significant*

AB 32 identified a 2020 target level of 427 MMT CO₂e for GHG emissions in California, which is approximately 28.5 percent less than the 2020 BAU emissions estimate of 596 MMT CO₂e. To reach the target level there will have to be widespread reductions in GHG emissions across California. Some reductions will need to come in the form of changes pertaining to vehicle emissions and mileage standards. Some will come from changes pertaining to sources of electricity and increased energy efficiency at existing facilities. The remainder will need to come from plans, policies, or regulations that will require new facilities to have lower carbon intensities than they have under BAU conditions. Therefore, this analysis uses a threshold of significance that is in conformance with the state's goals.

On December 12, 2008, CARB adopted the AB 32 Scoping Plan, which details specific GHG emissions-reduction measures that target specific GHG emissions sources. Project-related GHG emissions would be reduced as a result of several AB 32 Scoping Plan measures. The scoping plan considers a range of actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system). Some examples include the following:

- Mobile-source GHG emissions-reduction measures:
 - Pavley emissions standards (19.8 percent reduction),
 - Low-carbon fuel standard (7.2 percent reduction),
 - Vehicle efficiency measures (2.8 percent reduction); and
- Energy production-related GHG emissions-reduction measures:

- Natural gas transmission and distribution efficiency measures (7.4 percent reduction),
- Natural gas extraction efficiency measures (1.6 percent reduction),
- Renewables (electricity) portfolio standard (statewide average reduction of 28.0 percent).

These reductions in mobile-source and energy-production GHG emissions would occur in addition to the project-specific GHG emissions reductions discussed above, which would be associated with design measures to reduce project-specific GHG emissions related to energy consumption and water use to reach LEED Gold certification. As shown in Table 3.6-1, above, incorporation of design features and AB 32 Scoping Plan emissions-reduction measures would result in project-related GHG emissions that would be approximately 30.4 percent below BAU. As such, the proposed project would be consistent with the AB 32 goal of reducing statewide GHG emissions to 1990 levels by 2020. The project would not conflict with this GHG emissions-reduction plan.

The UCR Climate Action Plan presents current and future measures that will be implemented to reduce the campus's GHG emissions. Table 3.6-2 lists the applicable measures from the plan and considers the project's conformance to these measures.⁴

Table 3.6-2. Project Conformance to UCR Climate Action Plan GHG Reduction Measures

UCR Climate Action Plan Measure	Applicability/Project Conformance
Energy-reducing shading mechanisms for windows, porches, and patio and walkway overhangs installed either in new buildings or during retrofits.	These measures are part of the campus design guidelines. The project incorporates shading and window glazing to reduce the need for air conditioning. In addition, the project's most exposed building façades would incorporate a rain-screen composed of an outer layer of building façade material mounted on furring channels, which would create a ventilated air cavity that functions to dissipate solar heat gain.
Grid power (as opposed to diesel generators) used for job site power needs where feasible during construction.	Grid power would be provided for project construction, to the extent feasible, in conformance with existing campus policy.
Seventy-five percent (or more) of buildings oriented to face either north or south (within 30 degrees of north-south).	The entirety of Buildings D, E, G, and H are oriented within 30 degrees of north-south. Buildings B and C have elements that are oriented east-west and elements that are oriented north-south. Buildings A and J are square and are oriented in no particular direction. The project complies with this requirement.
Light-colored pavement (e.g., increased albedo pavement) included as part of project design guidelines.	Campus design guidelines require the use of "UCR Tan" for all concrete surfaces and limits asphalt surfaces to roads only. These features have been incorporated into the project design.
All projects required to obtain LEED, Labs21, or other green building certification.	As stated in Section 2.3, one of the project objectives is to design the project to LEED Gold standards, in conformance with this requirement.

⁴ Measures listed in the Climate Action Plan that reference campus-wide programs that are not specifically applicable to the project are not listed in Table 3.6-2. These include measures such as car-sharing programs, incentives for alternative transportation, development of bicycle maps, and the implementation of land use strategies to encourage jobs/housing proximity. Certain other measures are not discussed in the table because, according to the Climate Action Plan, they are future measures that reference programs or guidelines that have not yet been implemented by the campus.

UCR Climate Action Plan Measure	Applicability/Project Conformance
Efficient lighting and lighting control systems installed in new construction and retrofit projects. Daylight used as an integral part of lighting systems in buildings	The project's design narrative states that the project will incorporate a main lighting control system equipped with integral astronomic time clocks for controlling separate schedules for interior and exterior lighting.
Trees and vegetation planted near structures to shade buildings and reduce energy requirements for heating/cooling.	Ample landscaping is proposed adjacent to the project structures, in conformance with this requirement.
Parking lot areas provided with 50% tree cover within 10 years of construction, in particular, low-emitting, low-maintenance, low-water-requiring trees. Open lots may be provided with photovoltaic sun shades.	Photovoltaic solar power devices will be installed on the proposed parking structure's roof, in conformance with this requirement.
All new construction projects required to surpass California Energy Code Title 24 by 20% or better.	University of California policy requires outperforming Title 24 by 20%, and the project will conform to this policy.
On-site trees that may be removed because of development replaced or preserved as a means of providing carbon storage.	The project entails removing trees from the site but also entails a substantial landscaping plan that includes planting new trees and shrubs that will provide a means of carbon storage.
Developing on-site renewable energy capacity. Photovoltaic shades to be installed for hybrid electric vehicle (HEV) and plug-in hybrid electric vehicle (PHEV) Zipcar parking areas.	Photovoltaic solar-power devices would be installed on the proposed parking structure's roof, in conformance with this requirement.
Water-efficient irrigation systems and devices installed, such as soil moisture-based irrigation controls, to create water-efficient landscapes.	Water-efficient irrigation systems are included in furtherance of the projects design to achieve LEED Gold standards. The project architect's LEED information indicates that the project has been designed so as to garner two out of a possible four points for water-efficient landscaping.
Heat recovery projects implemented in campus buildings.	The project includes installation of variable refrigerant flow systems in the residential buildings to provide heat recovery, in conformance with this requirement.
Bicycle lanes and walking paths designed to facilitate traffic to, from, and at schools, parks, and other community destination points.	The project includes improved bicycle and pedestrian circulation through the site to facilitate accessibility. The project would not remove any bicycle lanes provided in roads surrounding the project site.
Increasing the number of secure bicycle corrals.	The project proposes indoor bicycle storage in Building D and the parking structure. Additional bike racks may also be provided at the Food Emporium.
Providing conductive/inductive electric vehicle charging stations.	As stated in the discussion of LRDP EIR Mitigation Measure 4.3-3 in Appendix F of this EIR, charging stations are part of an ongoing campus administrative program. The project does not specifically entail provision of charging stations but would be designed so as to accommodate establishment of such a system.
Increasing on-campus housing for students and staff.	The project proposes on-campus housing for students, in conformance with this policy.
Including mixed-use, infill, and higher density development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods.	The project is an in-fill residential project that proposes high-density development, in conformance with this policy.

UCR Climate Action Plan Measure	Applicability/Project Conformance
Construction waste managed during projects.	Project construction would abide by a waste-management plan incorporated as part of the project's design to meet LEED Gold standards. The project architect's LEED information indicates that the project has been designed so as to garner two out of a possible two points for waste management.
Install light-emitting diodes (LEDs) for traffic, street, and other outdoor lighting.	LEDs would be installed in outdoor lighting fixtures on the site, where feasible, as part of the project's design to meet LEED Gold standards.

As shown in Table 3.6-2, the project generally conforms to the policies stated in the Climate Action Plan. Accordingly, the project would not present any significant conflicts with the campus's implementation strategies to reduce GHG emissions stated in the Climate Action Plan, and this impact would be less than significant.

3.6.5 Cumulative Impacts

Unlike criteria pollutant impacts, which are local or regional in nature, climate change is inherently a cumulative impact because the impacts occur at a global level. The relatively long lifespan and persistence of GHGs require climate change to be considered a cumulative and global impact. It is unlikely that that any increase in global temperature or sea level could be attributed to emissions resulting from a single project. Rather, it is more appropriate to conclude that project-related GHG emissions would combine with emissions from across California, the U.S., and the globe, including the cumulative projects listed in Section 3.0.4 of this EIR, to contribute cumulatively to potential adverse environmental impacts of global climate change.

Although the proposed project would generate GHG emissions during both construction and operation, GHG generation during construction would represent a one-time contribution, and GHGs generated during operations would be partially offset (compared with BAU conditions) by project design features to reduce the ongoing contribution of GHGs to climate change. The amount of construction- and operations-period GHG emissions that would result from development of the proposed project is negligible when considered on a global scale. The proposed project's emissions, without considering other cumulative global emissions, would not be large enough to cause climate change. Additionally, the project would pursue LEED Gold certification, which would help to reduce GHG emissions relative to BAU conditions. The proposed project would be consistent with the state's goal of reducing cumulative statewide GHG emissions to 1990 levels by 2020. As such, the proposed project's cumulative contribution to global climate change would not be cumulatively considerable.

Section 3.7
Hazards and Hazardous Materials

3.7.1 Introduction

This section describes the affected environment and regulatory setting pertaining to hazards and hazardous materials and describes impacts related to hazards and hazardous materials that would result from implementation of the Glen Mor 2 Student Apartments Project. Where significant impacts specific to this project are identified, this section also identifies mitigation measures that would substantially reduce or avoid these impacts. This discussion and analysis incorporates existing conditions information, impact analysis, and mitigation measures from Section 4.7 of the LRDP EIR. The analysis and conclusions in this section are also based in part on the Phase I Environmental Site Assessment and Limited Subsurface Investigation (Phase I ESA) prepared for the project site by CHJ in June 2010 and the Asbestos-Containing Building Material (ACBM) and Lead-Based Paint (LBP) Survey prepared for the project site by Ambient Environmental in December 2010. These reports are presented in Appendices M and N.

UCR received no comments related to hazards or hazardous materials through the scoping process for this project. Subsequent to circulation of the NOP, it was decided to include emergency generators as part of the project. Hazards associated with on-site storage of diesel fuel for this added project element are addressed in this section.

3.7.2 Environmental Setting

Hazardous Materials Management at UCR

The project site is located within the UCR campus, which is a registered generator of hazardous waste, including chemical waste and radioactive and biohazardous (medical) waste. UCR EH&S is the principal administrator for hazardous materials/waste management on the UCR campus. EH&S is charged with issuing policies, evaluating departmental activities, and disseminating general information regarding the handling, storage, and disposal of hazardous materials and wastes, in part through discussions with the department heads, training for employees and teaching assistants, and distribution of various safety manuals, newsletters, and other publications.

Most of the hazardous materials used on the campus are associated with research and instruction; however, maintenance and physical plant units on campus, including the grounds, custodian services, fleet services, pest management, and craft shops, also use a wide variety of commercial products that have been formulated with hazardous materials during the course of daily campus operations, including the management of on-campus housing. EH&S manages several types of chemical waste, including solvents, cleaners, paint/sludge, asbestos, mercury, photochemicals, formalin (formaldehyde solution), oil/lubricants, pesticides, adhesives/sealers, acids, explosives/reactives, and organic and inorganic laboratory chemicals. UCR EH&S does not treat, store (for longer than 90 days), or dispose of hazardous chemical waste on site. All waste is shipped off site to permitted disposal facilities using a contracted licensed hazardous waste transporter. The LRDP EIR (Section 4.7.2, beginning on page 4.7-1) provides detailed information regarding the use and handling of hazardous materials and waste on the campus.

In general, hazardous materials used at on-campus facilities are first delivered to a receiving dock in the Corporation Yard, located south of Watkins Drive and northeast of the project site, and then delivered to their respective destinations. EH&S, the central handling facility for hazardous wastes on campus, is currently situated in the southern portion of the East Campus, along Campus Drive, approximately 0.5 mile southwest of the project site. At this location, the storage and transport of hazardous wastes is removed from the residence hall precinct and off-campus residential areas. A separate campus project to relocate the EH&S facility to the north side of Linden Street, across from the Pentland Hills and Glen Mor 1 complexes and east of the Corporation Yard, is currently in the design and environmental review stage. Impacts of this potential change in the project setting are addressed in the cumulative impacts analysis of this section.

Project Site

The proposed site for the Glen Mor 2 Student Apartments Project was previously cultivated and planted with groves. Furthermore, the site includes an unoccupied single-family residence that was built in the 1920s. These circumstances present the potential for the presence of hazardous contamination in site soils and in building materials and may require special consideration during grading and demolition activities. Soil samples taken from the project site indicate the presence of low levels of residual pesticides. Samples of building materials indicate that the existing residence contains asbestos and lead. The results of these surveys and associated recommendations are presented below in Section 3.7.4 (Impacts 3.7-1 and 3.7-2).

The project-specific Phase I ESA included a search of current hazard and hazardous contamination databases to identify any known sources of hazard exposure in the project vicinity. Aside from the on-site sources associated with the residence and the former grove operations, noted above, the Phase I ESA identified no other known sources of hazardous contamination that could affect the project site, construction workers, or occupants of the housing.

This subject matter also includes emergency response and evacuation plans. The EH&S Emergency Management Office maintains an inventory of evacuation zones for each building on the campus, including the residence halls. An existing lawn area within the project site, which would be altered by the proposed project, is presently designated by EH&S as an evacuation zone for the East Lothian Residence Hall. Impacts associated with this alteration are discussed below in Section 3.7.4 (Impact 3.7-8), including the identification of an alternate emergency assembly area for the East Lothian Residence Hall.

Surroundings

The project site is located at the northeast corner of the campus, with established residential neighborhoods characterizing off-campus lands to the east and north. One private school is located within 0.25 mile of the project site: Apple Tree Learning Center and Child Day Care at the southeast corner of Big Springs Road and Watkins Drive.

According to the Pipeline and Hazardous Materials Safety Administration's (PHMSA's) web-based mapping system, Valencia Hill Drive contains a 6-inch underground fuel pipeline along the project frontage owned by Kinder Morgan (PHMSA 2010). The Phase I ESA prepared for the Glen Mor 2 project did not identify any leaks or other hazardous conditions that are on record for this pipeline.

3.7.3 Regulatory Framework

The management of hazardous materials and hazardous wastes is subject to numerous laws and regulations at all levels of government. These laws apply to instructional and research activities, operations and maintenance work, and various other activities occurring on campus. These governing laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of and that environmental consequences resulting from an accidental release are minimized. Information on the various federal, state, and local regulations governing hazardous materials management at UCR is provided in Section 4.7.3 of the LRDP EIR, beginning on page 4.7-18.¹ The current contract for transport is with Clean Harbors Environmental. One state regulation pertinent to the project that is not discussed in the LRDP EIR is identified below.

California Government Code Section 4216

California Government Code Section 4216 establishes requirements for any person conducting underground excavation to contact a regional notification center prior to commencing excavation to determine the location of pipelines or other subsurface installations. The notification center must then contact the installation operator, and the operator must locate and field mark the approximate location of the facilities.

3.7.4 Impact Analysis

Methodology

The identification of potential impacts related to hazards and hazardous materials considered the nature of the proposed project improvements as well as information regarding conditions on the project site and in the surrounding area. Information regarding potential contamination sources in site soils and the existing house is derived from the Phase I ESA conducted by CHJ in June 2010 (Appendix M), which included a review of historical aerial photographs, topographic maps, city directories, and building department records; research of federal, state, and local lists of known potentially hazardous waste sites; a review of records on file with several government agencies and other environmental documents; personal interviews; and site reconnaissance, testing, and subsequent laboratory analysis.

Analysis of project-related impacts associated with lead and asbestos contamination in the building materials in the existing residence is derived from the survey conducted by Ambient Environmental in 2010 (Appendix N), which entailed a visual inspection and sample analysis to locate and identify friable and non-friable asbestos-containing materials and detect the presence of lead-based paint.

Analysis of project-related impacts associated with air contaminants is derived from the project-specific air quality analysis report provided in Appendix N.

¹ EH&S is now accountable to the Vice Chancellor for Finance and Business Operations, not the Vice Chancellor of Administration, as stated in the LRDP (page 4.7-2). Additionally, the current transporter and disposal facility operator is Clean Harbors Environmental, not Onyx Environmental, as stated in the LRDP EIR (page 4.7-5).

Analysis of project impacts associated with proximity to a petroleum products pipeline is based on regulatory program requirements and a prior risk assessment for this facility.

Analysis of project impacts due to on-site storage of diesel fuel is based on assessment guidance from the U.S. Department of Housing and Urban Development (HUD) (HUD 1996).

Significance Criteria

The criteria for analyzing the project's impacts related to hazards and hazardous materials are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information resources, the proposed Glen Mor 2 Student Apartments Project does not present the potential for impacts for the significance criteria outlined below. Additional discussion of these impacts is provided in the initial study, in the discussion of checklist item 8(Appendix A).

- Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?
 - Listed contamination sites identified in conjunction with the LRDP EIR have been remediated (LRDP EIR, page 4.7-36). The Phase I ESA prepared for this project researched the hazard site lists maintained by various federal, state, and local agencies and confirmed that no active, listed hazards are affecting the project site (Appendix M, page 8 through 13).
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
 - The campus is not located within an airport land use plan study area or within 2 miles of a public airport or public use airport.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
 - The campus is not located in the vicinity of a private airstrip.
- Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including in areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?
 - The project site is not located near areas that present a risk from wildland fires.

For the remaining Appendix G criteria, implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; or
4. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

These criteria are each addressed in Section 3.7.4, below.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to hazards and hazardous materials. The applicable measures are identified in Appendix F of this EIR. These applicable measures are considered part of the project for purposes of this analysis. In general, the measures address the identification and safe handling of hazardous materials in grading and demolition activities; general campus requirements for use, storage, disposal, and transport of hazardous materials; and emergency response and evacuation. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The project may entail the routine transport, use, or disposal of comparatively limited volumes of hazardous materials associated with facilities maintenance. Routine transport, use, and disposal of hazardous materials on campus occur under established programs that are monitored under the MMRP for the LRDP EIR (Programs and Practices 4.7-1). This impact is adequately addressed under the LRDP EIR.

Analysis for this criterion focuses on the disturbance and movement of contaminated soils, demolition of a structure containing lead-based paint and asbestos-containing materials, and on-site storage of diesel fuel for emergency generators. No other hazardous uses that could affect the project site have been identified.

Impact 3.7-1: Project-related ground disturbance would not expose construction workers, campus occupants, area residents, or the environment to significant hazards. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

Construction of the proposed project would entail disturbance of soils in an area that, historically, has been used for agricultural purposes, including the cultivation and planting of tree groves. Because of this historic use, the potential exists for significant concentrations of residual pesticides to occur in on-site soils. In accordance with LRDP Programs and Practices 4.7-2 and 4.7-4, a site survey was conducted to evaluate the presence of contamination resulting from the historic agricultural use, and the results of this survey were incorporated into the Phase I ESA (Appendix M).

Subsurface sampling of soil was conducted at eight representative locations on the project site, throughout the former grove areas on the ridge generally north of the existing parking lot and south of the arroyo. Samples were taken at depths of 8 and 30 inches below the surface at each of the eight locations. Samples from the 8-inch depth were tested for residual concentrations of organochloride pesticides. The results of the laboratory tests indicated very low concentrations of residual pesticides (DDT, the DDT breakdown product DDE, and Dieldrin) in five of the eight shallow samples. On the basis of these results, it is CHJ's professional opinion that testing of the deeper samples is unnecessary.

The California Environmental Protection Agency has established the California Human Health Screening Levels (CHHSLs), which are levels of contamination that are considered to be below the threshold of concern for risks to humans. The presence of a chemical that measures below the CHHSLs supports a determination that the contamination would not pose a significant health hazard to people residing or working at the site. A level above the CHHSL does not necessarily indicate a significant risk but is an indication of the need for further evaluation. The highest measured level of DDT in the site samples was approximately 0.3 percent of the applicable CHHSL (1.6 ppm), and the highest measured level of DDE was approximately 0.6 percent of the applicable CHHSL (1.6 ppm). The highest measured level of Dieldrin was approximately 26 percent of the applicable CHHSL (0.035 ppm).

The sampling that was conducted is considered to be representative of site conditions and, based on the survey results, concentrations exceeding applicable thresholds do not occur on the site. Thus, ground-disturbing activities would not create a significant hazard to construction workers, campus occupants, area residents, or the environment due to the presence of residual pesticides in soils underlying the project site. Impacts would be less than significant. No project-level mitigation is necessary.

Impact 3.7-2: Project-related building demolition would not create a significant hazard to construction workers, campus occupants, area residents, or the environment. *Impact Determination: Less than significant with Implementation of LRDP EIR Measures*

Construction of the proposed project would involve demolition of an existing on-site residence that is known to contain both asbestos-containing materials and lead-based paint. After a visual inspection of the existing structure and a sampling of building materials, approximately 3,360 square feet of asbestos-containing materials were identified in the flooring, plaster, duct wrap, and roofing materials of the residence. Of the 124 paint samples taken at the residence, 21 met or exceeded the detection limit for lead-based paint maintained by HUD, with positive results found throughout the house. The surveyor also noted that additional asbestos- and lead-containing materials may be present in hidden or concealed elements of the structure.

Section 4.7 of the LRDP EIR notes the potential for on-campus buildings to contain lead in pipes as well as solder for copper plumbing and mercury in thermostats, both of which could require special handling during demolition. The on-site residence does not contain copper pipes, which are a potential source of lead solder, and its galvanized pipes would not contain lead. Thermostats may contain mercury, which will be properly disposed of pursuant to demolition specifications (Hill pers. comm.).

LRDP Program and Practice 4.3-2(c) requires compliance with SCAQMD Rule 1403 when project demolition activities involve asbestos-containing materials. Rule 1403 specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities. Under Rule 1403, operators are required to notify federal and local government agencies prior to beginning any renovation or demolition that could disturb asbestos and employ precautions and safe work practices to eliminate or reduce the potential for the release of asbestos fibers. Also, under this rule, demolition of the on-site residence would be required to comply with removal procedures and time schedules, asbestos handling and cleanup procedures, and storage, disposal, and land filling requirements. Medical examinations and monitoring of employees who would be engaged in activities that could disturb asbestos are also required. Recommendations in the project-specific survey pertaining to conducting demolition work under the direction of qualified personnel are encompassed within the LRDP EIR and SCAQMD Rule 1403 requirements.

Because of its toxic properties, lead is regulated as a hazardous material and as a TAC. State regulations (Title 17 CCR Division 1, Chapter 8, and Title 8 CCR Section 1532.1) establish qualifications for certified contractors and standards for inspection, testing, and removal (abatement) of lead-containing building materials for all construction work where an employee may be occupationally exposed to lead. Safeguards for occupational exposure also serve to protect the general public during demolition activities.

LRDP Program and Practice 4.7-2 requires compliance with handling and disposal practices identified in building-specific surveys to ensure construction worker and public safety. Established campus procedures for implementation of the LRDP EIR MMRP ensure incorporation of such provisions in project bid specifications, oversight of demolition activities by qualified inspectors, and documentation of appropriate handling and disposal by the campus EH&S office. Because hazardous materials were identified in the on-site structure, asbestos- and lead-abatement specifications were prepared for the project, in conformance with LRDP Program and Practice 4.7-2. The specifications will be incorporated into the contract for demolition of the on-site structure. In addition, compliance with the mandatory requirements of LRDP Programs and Practices 4.3-2(c) and 4.7-2, including SCAQMD Rule 1403 and state regulations governing lead-containing materials, will ensure that demolition of the existing on-site residence will not create a significant hazard for construction workers, campus occupants, area residents, or the environment from the release of asbestos or lead. Therefore, this impact is less than significant. No project-level mitigation is required. Project-specific information in Appendix F of this EIR provides a cross-check to ensure implementation of the applicable LRDP programs and practices and mitigation measures for the Glen Mor 2 Student Apartments Project.

Impact 3.7-3: Project-related storage of diesel fuel would not create a significant hazard to campus occupants, area residents, or the environment through the routine transport, use, or disposal of hazardous materials. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

Project improvements would include two emergency generators to provide back-up power for safety lighting at the residential buildings and in the parking structure as well as the refrigeration equipment for the Food Emporium. One generator (250 kilowatts, with a 472-gallon fuel tank) is proposed to be located near the northeast corner of the parking structure, and the other (400 kilowatts, with an 898-gallon fuel tank) is proposed to be located near the southwest corner of Building C. Both generators would be surrounded by a concrete masonry enclosure. The enclosure would be 10 feet tall, with metal louver material rising another 4 feet above the concrete, for a total height of 14 feet. Generator size and fuel storage is based on a 24-hour backup time. Installation of emergency generators is governed by a number of codes and industry standards, including the California Fire Code; California Building Code; California Electrical Code; California Mechanical Code; National Fire Protection Association Standards 30, 37, and 100; and Underwriter Laboratories' standards 142, 2085, and 2200. On the UCR campus, the fire marshal, EH&S, and physical plant personnel are involved in the installation and operation of emergency generators. The fire marshal reviews plans and oversees installation to ensure compliance with California Fire Code provisions. Physical plant personnel are responsible for ongoing operation and maintenance. EH&S is responsible for preparation and administration of emergency response plans in accordance with LRDP Programs and Practices 4.7-1.

With respect to the routine use of diesel fuel for emergency generators, the potential hazards are related to the potential for fuel spills. Per campus policy, all fuel refilling is to be performed with an attendant present. The integrated generator sets proposed for the Glen Mor 2 project would be equipped with double-walled subbase fuel tanks. Double-wall construction would contain a volume of fluid (110 percent of the storage volume). The tanks would be equipped with alarms to provide an alert when 90 percent of capacity is reached and stop fueling at 95 percent of capacity. Fill connections would include a spill-prevention container (5 gallon minimum) as an additional safeguard against incidental spills during fueling.

Under normal circumstances, the generators would be tested on a monthly basis for 10 minutes (Shuler pers. comm.). Under these circumstances, refueling would be required once or twice a year. SCAQMD Rule 1470 requires operators of emergency generators to maintain monthly logs of fuel use and deliveries. Campus physical plant personnel indicate that two diesel fuel deliveries are required each year for the 28 existing diesel emergency generators on the campus (Shuler pers. comm.). Fuel deliveries for the two new generators would not represent a substantial change to the current situation.

Fuel containment aspects for generator set design, the nominal change in fuel deliveries from the current situation, and established campus programs for hazardous materials management under LRDP Program and Practice 4.7-1 establish a framework for safe routine storage of diesel fuel on the Glen Mor 2 site. This impact is less than significant. No project-level mitigation is required.

Criteria 2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The focus of analysis for this criterion is potential upset conditions related to on-site storage of diesel fuel for emergency generators and the proximity of a fuel pipeline located within the Valencia Hill Drive right-of-way adjacent to the site. Section 3.7.5, below, provides a discussion of the potential cumulative impacts due to the relocation of the EH&S facility to a location closer to the Glen Mor 2 site. No other hazardous conditions that could affect the project from upset or accident conditions have been identified.

Impact 3.7-4: Project construction in the vicinity of the fuel pipeline within Valencia Hill Drive would not result in a significant hazard to the public or the environment. *Impact Determination: Less than Significant*

Construction activity for the Glen Mor 2 project would include connection to an existing natural gas service line that runs within the western half of the Valencia Hill Drive right-of-way. A petroleum product pipeline operated by Kinder Morgan also runs within Valencia Hill Drive, in the eastern half of the right-of-way.

Project excavation within Valencia Hill Drive would not occur directly within the alignment of the fuel pipeline. Furthermore, the project contractor is required by California law to contact Underground Service Alert, which, in turn, is obligated to contact the pipeline operator to identify and delineate the exact location of the pipeline. This will prevent any unforeseen conflict between project excavation and the pipeline. Pipeline operator coordination may also result in requirements for hand excavation and/or field oversight by a Kinder Morgan representative where warranted to protect the pipeline. On the basis of existing safeguards and the separation between site activity and

the fuel pipeline, project excavation near the existing fuel pipeline does not present the potential for a significant hazard from accident or upset conditions. Therefore, this impact is less than significant, and no mitigation is required.

Impact 3.7-5: Increasing the residential population in the vicinity of the fuel pipeline within Valencia Hill Drive would not result in a significant hazard to residents. *Impact*

Determination: Less than Significant

The project entails increasing the resident population adjacent to an underground fuel pipeline located within Valencia Hill Drive. A previous risk assessment for this pipeline (Southern Pacific Pipelines, Inc. 1989) described the facility as a 14-mile-long, 6-inch-diameter welded steel pipe that transports jet fuel from Colton to March Air Force Base (now March Air Reserve Base)². At the time of the assessment in 1989, the pipeline carried approximately 1.7 million gallons of fuel annually. Maintenance of the line includes visual inspections on the ground and from the air as well as internal inspections with computerized equipment that measures the thickness of the pipe's wall.³ Evidence of damage would result in open exploration to repair or replace the damaged section of pipe.

The 1989 risk assessment cites three causes of pipeline failure: outside force damage (by excavation, natural causes, or vandalism), external corrosion due to imperfections in the pipe coating, and internal corrosion. The national average accident rate for pipeline failures at that time was 0.008 per billion ton-miles. Approximately 227,000 miles of pipeline exist throughout the nation.⁴ The recent events related to the natural gas line explosion in San Bruno, California, have elevated this issue to a public concern. Statistics for 2010 to date indicate that there have been nine fatalities and 58 injuries nationwide due to pipeline failures. By comparison, national statistics for loss of life from auto, rail, air, and water travel indicate fatalities on the order of many tens of thousands annually.⁵

This pipeline traverses an area that is already densely populated, posing some risk to existing residents in the unlikely event of an accident along this segment of pipeline. Establishment of the Glen Mor 2 Student Apartments Project will not alter the factors contributing to the risk of potential failure of the pipeline. Given the statistical information regarding the extent of such pipeline networks and associated accidents, potential failure of the pipeline cannot be characterized as reasonably foreseeable. Therefore, increasing the number of residents in the immediate vicinity of the pipeline would not present the potential for a significant hazard due to accident or upset conditions. This impact is not significant, and no mitigation is required.

² Information on the Kinder Morgan web site indicates that this basic information remains valid. Available: <http://www.kindermorgan.com/business/products_pipelines/colton.cfm>.

³ Available: <http://www.kindermorgan.com/ehs/pipeline_safety/>.

⁴ Information from Kinder Morgan indicates more than 2 million miles of pipes transport natural gas, carbon dioxide, and hazardous liquids across the United States. See the "Working and Digging Near Pipelines" brochure. Available: <http://www.kindermorgan.com/public_awareness/Common_Files/EC_PA-BROCHURE-2009_WEB.pdf>.

⁵ The 1989 risk assessment report for the Kinder Morgan pipeline (former owner Southern Pacific Pipe Lines, Inc.) cites six casualties from pipeline failures in 1989, compared with 43,800 from highway accidents, 638 from air carrier accidents, 454 from railroad accidents, and 69 from waterborne accidents. These statistics are of comparable magnitude to current statistics found on web sites maintained by the National Transportation Safety Board, the National Highway Traffic Safety Administration, the Federal Railroad Administration, and the U.S. Coast Guard.

Impact 3.7-6: Project-related storage of diesel fuel would not create a significant hazard to campus occupants, area residents, or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
Impact Determination: Less than Significant with Implementation of LRDP EIR Measure

The proposed improvements include the installation of two emergency generators. One generator (250 kilowatts, with a 472-gallon fuel tank and a 60-square-foot diked area) is proposed to be located near the northeast corner of the parking structure, and the other (400 kilowatts, with an 898-gallon fuel tank and a 215-square-foot diked area) is proposed to be located near the southwest corner of Building C.

While the storage of diesel fuel in the volumes and circumstances proposed would not pose a significant hazard under routine circumstances, diesel fuel is flammable and could result in a fire under upset conditions. HUD has established guidelines for environmental analysis of such hazards for HUD-assisted projects located near facilities that handle petroleum products or chemicals of a hazardous and explosive nature (HUD 1996). For diked, non-pressurized storage vessels (which is the case in this instance), the HUD guidelines define acceptable separations based on the predicted thermal radiation derived from the area of a polygon encompassing the storage tank. The HUD guidelines provide two separation distances, one for buildings and one for people (applies to outdoor congregation areas). The building standard is based on wood-frame construction and, therefore, represents a conservative approach for the steel-framed Glen Mor 2 buildings. While the proposed project is not a HUD-assisted project and not subject to HUD guidelines, UCR has voluntarily applied these guidelines as the threshold for this impact.

Under the HUD methodology,⁶ the tank for the proposed generator near the parking structure (the smaller tank) should maintain a 10-foot separation from buildings and a 60-foot separation from open areas where people may congregate. The tank for the proposed generator near Building C (the larger tank) should be placed at least 15 feet from buildings and 90 feet from open areas where people may congregate. For both locations, the building separation criteria are met.

At the location adjacent to Building C, ground areas within the 90-foot separation zone consist primarily of access routes to the Food Emporium and Parking Lot 14, service areas for the Food Emporium, the northeast corner of Parking Lot 14, and narrow planter areas along pedestrian paths. Potential congregation areas in the quadrangle between the wings of the East Lothian Residence Hall will receive new landscaping as part of the Glen Mor 2 improvements to provide groundcover that will not accommodate congregation.

At the location adjacent to the parking structure, ground areas within the 60-foot separation zone consist of a walkway and narrow landscape elements between the parking structure and Building G as well as open areas east of Building G. Proposed landscape treatments provide groundcover that will not accommodate congregation. No off-campus areas are located within the defined separation zones, and off-campus areas would not be subject to hazardous conditions related to the on-site generators. In addition, project-specific information in Appendix F of this EIR provides a cross-check to ensure implementation of the LRDP Mitigation Measure 4.7-7(b) with respect to acknowledging the separation zones in campus emergency plans and establishment of evacuation zones.

⁶ Based on the acceptable separation distance (ASD) for thermal radiation for diked conditions, Appendix F, *Siting of HUD-Assisted Projects near Hazardous Facilities: Acceptable Separation Distances from Explosive and Flammable Hazard*. Diked conditions apply because of the containment provided by the double-walled tank. Areas rounded up to derive next whole entry from Appendix F.

Criteria 3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The LRDP EIR (page 4.7-35) lists schools within 0.25 mile of the campus; none of them are within 0.25 mile of the Glen Mor 2 site. However, the Apple Tree Learning Center, a day care facility and private school, is located at the southeast corner of Watkins Drive and Big Springs Road, within 0.25 mile of the project site.

Routine use of hazardous materials on the campus is conducted under established programs that are monitored under the MMRP for the LRDP EIR (Program and Practice 4.7-1). This aspect of potential impacts for this criterion is adequately addressed under the program EIR.

The focus of analysis for this criterion is exhaust emissions from project-related traffic at the Watkins Drive/Big Springs Road intersection.

Impact 3.7-7: Operation of the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. *Impact Determination: Less than Significant*

Project contributions to increased idling time for traffic at the intersection of Big Springs Road and Watkins Drive present the potential for increased concentrations of CO in the vicinity of the Apple Tree Learning Center. As discussed under Impact 3.2-6 in Section 3.2 of this EIR (beginning on page 3.2-17), this intersection is not anticipated to exceed the standards for 1-hour or 8-hour CO concentrations without or with the addition of project traffic such that hazardous conditions would be identified. Therefore, this impact is less than significant.

Criteria 4: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

For a discussion of traffic hazards due to construction traffic on local roadways and potential temporary lane closures on Big Springs Road and Valencia Hill Drive during construction, see Impact 3.13-4 of this EIR (beginning on page 3.13-13). For a discussion of pedestrian hazards during construction, see Impact 3.13-5 of this EIR (beginning on page 3.13-14). For a discussion of the project's construction-related and permanent obstruction of emergency access, see Impact 3.13-6 of this EIR (beginning on page 3.13-15). Because these issues are addressed adequately elsewhere in the EIR, this impact discussion focuses on the project's impacts on plan-based areas identified for emergency response or evacuation because the proposed project would displace the existing evacuation zone for the East Lothian Residence Hall.

Two mitigation measures, 4.7-7(a) and 4.7-7(b), were established in conjunction with the LRDP EIR to require consideration of evacuation zones during construction and an annual review of the campus Emergency Operations Plan, which would determine the need for adjustments to campus evacuation zones due to new development. Emergency assembly areas for the new Glen Mor 2 buildings would be established within open areas on the site in the course of standard campus implementation of LRDP Mitigation Measure 4.7-7(b). This aspect of potential impacts for this criterion is adequately addressed under the program EIR.

The proposed Glen Mor 2 project would displace the existing evacuation zone for the East Lothian Residence Hall. This is the focus of analysis for this criterion.

Impact 3.7-8: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evaluation plan. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

The UCR Emergency Management Office maintains an inventory of campus emergency assembly areas. Review of the current inventory (as of October 10, 2010) indicates that the assembly area for the East Lothian Residence Hall (Lothian Buildings C, D, and F) is the grassy area between the residence hall and Parking Lot 14. This area would be disrupted during project construction and displaced by new improvements on the Glen Mor 2 site.

Pursuant to LRDP Mitigation Measure 4.7-7(a), the campus is required to avoid designated evacuation zones when siting construction staging areas or identify alternative evacuation zones and communicate their location to the University of California Police Department (UCPD) and the Riverside Fire Department (RFD). Because the emergency assembly area for the East Lothian Residence Hall cannot be avoided during construction, the campus has identified upper Parking Lot 14 as the primary alternative assembly area, with a secondary location at Parking Lot 13, immediately across Big Springs Road from the East Lothian Residence Hall. Once construction is complete, the assembly area would be relocated to Parking Lot 13. This selected location would be subject to an annual Campus Emergency Operations Plan review for functionality and appropriateness. Project-specific information in Appendix F of this EIR provides a cross-check to ensure implementation of LRDP Mitigation Measures 4.7-7(a) and 4.7-7(b) with respect to the designation of new temporary and permanent evacuation zones for the East Lothian Residence Hall. With implementation of these LRDP measures, this potential impact is less than significant.

3.7.5 Cumulative Impacts

The project's hazards and hazardous materials impacts related to on-site soil contamination (Impact 3.7-1), the presence of hazardous building materials in the on-site residence (Impact 3.7-2), on-site storage of diesel fuel (Impacts 3.7-3 and 3.7-6), and proximity to an existing petroleum fuel transmission line (Impacts 3.7-4 and 3.7-5) are site-specific issues that have no potential to combine with any conditions or impacts of the cumulative projects. Therefore, there is no potential for these impacts to contribute to cumulative impacts.

Impacts related to project proximity to a school (Impact 3.7-5) entail exhaust emissions from vehicles idling at the intersection of Watkins Drive and Big Springs Road. Traffic patterns for trips associated with the various campus cumulative projects would not contribute traffic at this intersection. The two residential projects identified as cumulative projects by the City involve a total of 63 residential units. Considering the limited scale and consistency with general plan densities, quantitative traffic impact analysis was not conducted as part of the CEQA documentation for either of these projects. At this juncture, the likelihood and timing of implementation for either of these residential projects is speculative.

Impact 3.7-8 addresses impacts on evacuation zones. Aside from the EH&S Expansion Project, the location and nature of the balance of the identified cumulative projects is such that they do not present the potential for cumulative effects in this regard. The EH&S Expansion Project would move the central location for handling campus hazardous waste adjacent to the campus housing precinct and reroute associated transport routes to roads in proximity to the campus housing precinct; this potential change in the project setting presents the potential for significant impacts on the Glen Mor 2 project.

The EH&S Expansion Project is the subject of ongoing design studies and in the very early stages of environmental review. The formal environmental review process is expected to begin prior to UCR's consideration of the Glen Mor 2 EIR. For this reason, potential impacts resulting from relocation of the EH&S facility are analyzed here.

For routine activities, operation of the EH&S facility will be subject to LRDP Program and Practice 4.7-1. On this basis, it is not expected to substantially affect the future Glen Mor 2 site. Most operations would be conducted indoors, with multiple containment and control systems designed for the protection of the building, occupants, and the outside environment. Potential changes in on-campus transportation routes to the Linden Street access point to the new EH&S facility would involve Aberdeen Drive and Linden Street west of Pentland Way. These roads are removed from the Glen Mor 2 site and not anticipated to entail any increased hazard to the future Glen Mor 2 site. Routes to the Watkins Drive access point would involve routes even farther removed from the Glen Mor 2 site.

For upset conditions, outdoor storage aspects of the EH&S expansion facility could present a potential exposure to hazards from fire and explosion. Information from the 2004 Detailed Project Program document for the EH&S Expansion Project indicates a total of 10 outdoor storage containers, ranging from approximately 100 square feet in area to 725 square feet in area each (three portable storage containers, six cargo containers, and an explosives container). Assuming a scenario in which the six cargo containers are grouped within a single diked containment area, and assuming that both explosion and fire separations apply, the resultant acceptable separation distance would be approximately 50 feet for buildings and 275 feet for people. The Glen Mor 2 site is approximately 800 feet from the proposed EH&S expansion building, and on this basis, it is not expected to be exposed to significant hazards from the proposed EH&S facility. It is noted that the Glen Mor 2 project will be considered as a cumulative project in the forthcoming EIR for the EH&S expansion building.

Section 3.8
Hydrology and Water Quality

3.8.1 Introduction

This section describes the affected environment and regulatory setting pertaining to hydrology and water quality and describes the impacts on hydrology and water quality that would result from implementation of the proposed Glen Mor 2 Student Apartments Project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts. The discussion in this section is based in part on technical evaluations of site hydrology prepared for the project by the design team civil engineer, Flores Lund Consultants (FLC). These reports, titled “Preliminary UCR Glen Mor 2 – Summary of Arroyo Hydraulic Analyses” and “Preliminary Hydrology and Drainage Basin Calculations for Grading and Improvements at UC Riverside Glen Mor 2 Housing,” are provided as Appendices O and P of this EIR.

UCR received one comment in response to the NOP related to the hydrology analysis in the EIR. The letter from the Riverside County Flood Control and Water Conservation District (Riverside Flood Control) clarified what the extent of the 100-year floodplain in the vicinity of the project site is and stated that the design of any project-related encroachments into the flood zone would need to be reviewed by the community’s floodplain administrator—in this case, the City of Riverside. The letter also requested analysis of the project’s impacts on facilities included in Riverside Flood Control’s University Master Drainage Plan as well as impacts due to downstream flooding and erosion.

After consideration of the Riverside Flood Control comments noted above and information regarding floodplain limits within the Great Glen Arroyo that became available after release of the NOP, the scope of analysis for impacts on hydrology and water quality has been expanded from that disclosed in the NOP to include project-level analysis of floodplain encroachments.

3.8.2 Environmental Setting

Regional Hydrology

The proposed project is located within the Santa Ana River watershed, a drainage area of approximately 2,650 square miles that extends more than 100 miles, from the San Bernardino Mountains to the Pacific Ocean in Huntington Beach. For additional information regarding regional surface water and groundwater hydrology, please see Section 4.8.2 of the LRDP EIR (beginning on page 4.8-1).

Campus Hydrology

The majority of the East Campus, including the project site, is located within the University Arroyo watershed, which covers approximately 2,294 acres (see Figure 3.8-1). The University Arroyo watershed is generally defined by the Box Springs Mountains and the campus hills on the east and south, Interstate 215/State Route 60 on the west, and a line that follows Linden Street, Valencia Hill Drive (north of the railroad), and the local foothills in the vicinity of Mount Vernon Drive on the

north. The entire watershed drains through the campus, with off-site flows entering the campus at three locations: a culvert under Valencia Hill Drive within the project site, within Big Springs Road at Valencia Hill Drive, and within a drainage course that enters the UCR Botanic Gardens near Watkins Drive and Frost Court.

The campus has constructed integrated stormwater management facilities for the University Arroyo watershed, referred to as the University Arroyo Flood Control and Enhancement (FCE) System. The system consists of a network of open channels, basins, and buried conveyances. It accepts all upstream tributary flows at the campus boundary, moderates peak flows, and conveys both off-site flows and campus discharges to a downstream terminus at University Avenue and Canyon Crest Drive (the Gage Basin). From the Gage Basin, discharges pass through the City storm drain system and travel to the Santa Ana River. The University Arroyo FCE system was designed to convey discharge volumes for a 100-year storm based on buildout conditions within the watershed and moderate peak discharges so as not to exceed the capacity of the receiving City storm drain.

University Arroyo FCE components include buried storm drains and a surface channel that follows Big Springs Road and Campus Drive, a basin and storm drain that collect flows from the Botanic Garden tributary area, and the Gage Basin. These components of the campus stormwater management system correspond to the Line 1, Line 1-B, Line 1-C, and basin facilities identified by the Riverside Flood Control University Master Drainage Plan.¹

Project Site Hydrology

The Glen Mor 2 site includes a hill and ridge that define on-site drainage patterns. An approximately 2.5-acre portion of the site north of the ridgeline drains toward the Great Glen Arroyo. An approximately 2-acre area on the eastern boundary of the site, the eastern flank of the hill, drains to Valencia Hill Drive. The balance of the site drains to the south to Big Springs Road. Flows directed toward Valencia Hill Drive are collected in an 18-inch-diameter storm drain within the road that discharges to a 72-inch-diameter storm drain in Big Springs Road. Site discharges directed toward Big Springs Road currently leave the site as surface discharge, which is directed to catch basins along Big Springs Road that empty into the 72-inch-diameter storm drain.

Approximately 32 percent of the project site² is currently covered by impervious surfaces (i.e., parking lot, residence, and driveway). Current stormwater discharges to the Great Glen Arroyo from the site are approximately 3.8 cubic feet per second (cfs) for 10-year storms and 5.5 cfs for 100-year storms. Current stormwater discharges to the storm drain in Valencia Hill Drive are approximately 1.9 cfs for 10-year storms and 3.1 cfs for 100-year storms. Current stormwater discharges to the 72-inch-diameter storm drain in Big Springs Road are approximately 17.9 cfs for 10-year storms and 27.7 cfs for 100-year storms.

The Great Glen Arroyo spans the entire length of the north side of the project site. The arroyo accepts flows from an approximately 88-acre upstream tributary area through a 48-inch diameter storm drain with an outlet to the arroyo on the eastern boundary of the site at Valencia Hill Drive, opposite Goins Court. Storm discharges from the off-campus tributary area amount to 96 cfs for a 100-year storm. In addition to the culvert at Valencia Hill Drive, there are two existing culvert

¹ Riverside County Flood Control and Water Conservation District. Master Drainage Plan and Area Drainage Plan Reports. Available: <<http://rcflood.org/content/MDPADP.htm>>. Accessed: December 2010.

² This is the percentage noted in the FLC preliminary hydrology report and reflects consideration of the approximately 15.4-acre portion of the site outside the arroyo limits.

crossings within the on-site arroyo. One is 12 inches in diameter and located within a dirt path that crosses the arroyo northeast of Lothian Hall. This culvert is completely filled with sediment. The second culvert is 54 inches in diameter and passes under a paved path on the western boundary of the Glen Mor 2 site. This culvert is partially blocked with approximately 2 feet of sediment.

Downstream of the Glen Mor 2 site, discharges from the Great Glen Arroyo pass through a naturalized area west of the Lothian residence halls and into a feature of the University Arroyo FCE system known as the Junction Basin. From the Junction Basin, flows continue downstream within a surface channel parallel to North Campus Drive and through a turf basin (Glade Basin) at the corner of North Campus Drive and Aberdeen Drive; both of these features are part of the University Arroyo FCE system. From the Glade Basin, flows enter an underground culvert that discharges into the Gage Basin, which is located on campus at the northwest corner of University Avenue and Canyon Crest Drive.

Surface Water Quality

Surface water from the project site drains into the Santa Ana River, which is listed under the 2010 California Clean Water Act Section 303(d) List of Water-Quality-Limited Segments (State Water Resources Control Board 2010) for the following constituents, based on river reach:

- Reach 6: Cadmium (source unknown);
- Reach 3: Copper (source unknown; impairment is during wet season only) and pathogens (dairies); and
- Reach 4: Salinity/total dissolved solids (TDS)/chlorides (source unknown).

These reaches of the river are all substantially removed from the campus. No streams in the vicinity of the campus are listed as impaired. The LRDP EIR (page 4.8-9) states that runoff from the UCR campus is typical of urbanized areas, containing constituents that are often found in runoff from roadways, parking lots, and residential areas. Table 3.8-1 contains a list, compiled by the U.S. Department of Transportation, of typical pollutants, such as oil, grease, and brake dust from automobiles that have been sourced to common roadway runoff. Discharge of such pollutants into downstream receiving waters may affect designated beneficial uses, including recreation, municipal supply, groundwater recharge, and wildlife habitat.

Table 3.8-1. Common Roadway Pollutants and Sources

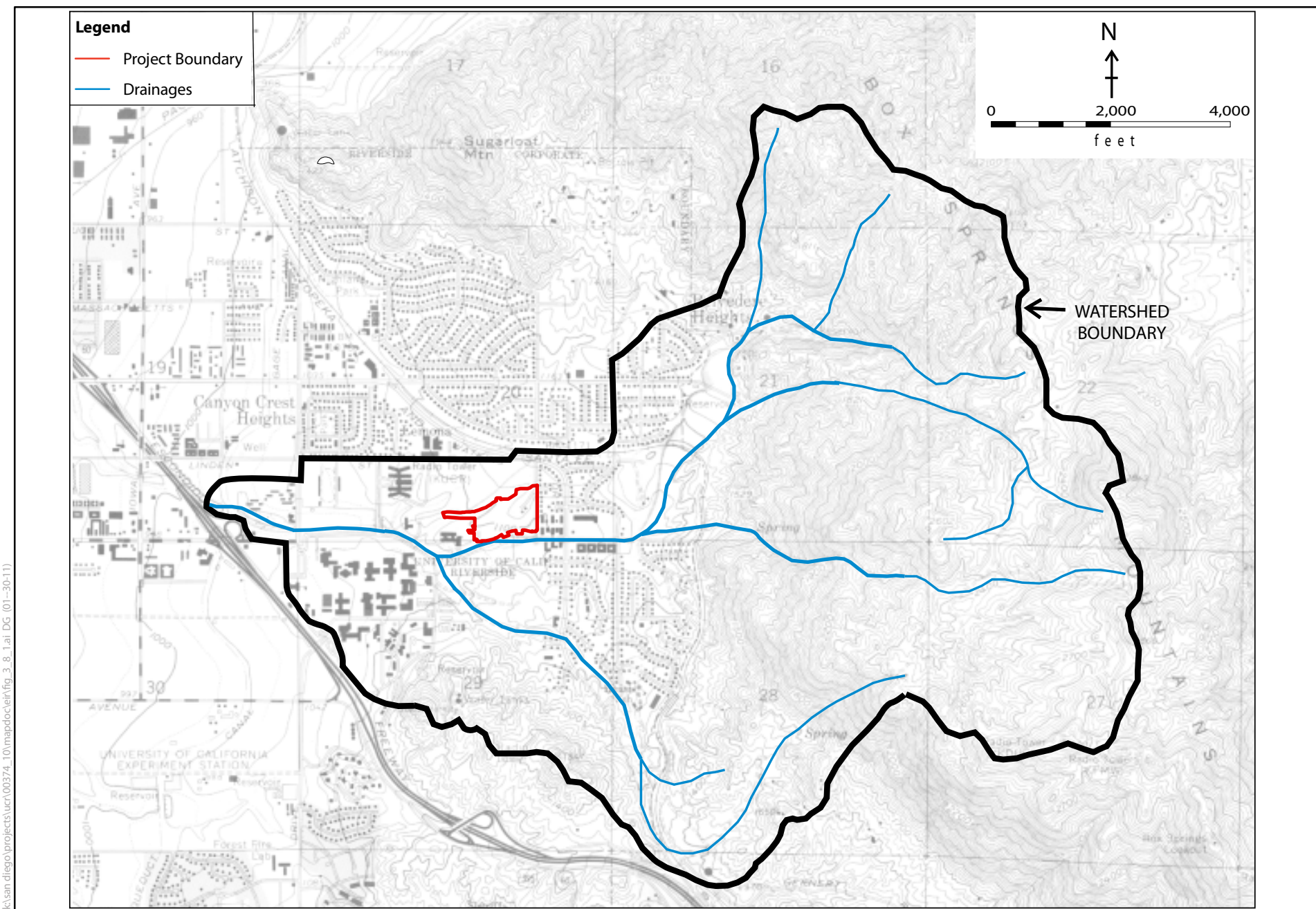
Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, sediment disturbance
Nitrogen, phosphorus	Atmosphere, roadside fertilizer application, sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, atmospheric fallout
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures, moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, fungicide and insecticide application
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, bushing wear, brake lining wear, asphalt paving, metal plating
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anticake compound used to keep deicing salt granular
Sodium, calcium	Deicing salts, grease
Chloride	Deicing salts
Sulphate	Roadway bed, fuel, deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt leachate
PCBs, pesticides	Spraying of highway rights-of-way, atmospheric deposition, the PCB catalyst in synthetic tires
Pathogenic bacteria	Soil litter, bird droppings, trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos*	Clutch and brake lining wear

* No mineral asbestos has been identified in runoff; however, some breakdown products of asbestos have been measured.
Source: U.S. Department of Transportation. 1996. Publication No. FHWA-PD-96-032. Federal Highway Administration. June.

Flooding

The Federal Emergency Management Agency (FEMA) delineates floodplains throughout the nation and publishes the data in Flood Insurance Rate Maps (FIRMs). The FIRM for the project site has been updated since adoption of the 2005 LRDP and is provided in Figure 3.8-2. This update reflects the elimination of flood hazards that affected portions of the campus as a result of completion of the University Arroyo FCE improvements, which are described above under Campus Hydrology. A small portion of the southeastern part of the project site is within Zone AE, indicating a 100-year flood zone for which base flood elevations have been determined.

The technical evaluations prepared in support of the project design include an evaluation of the 100-year floodplain limits within the Great Glen Arroyo, which were not mapped by FEMA

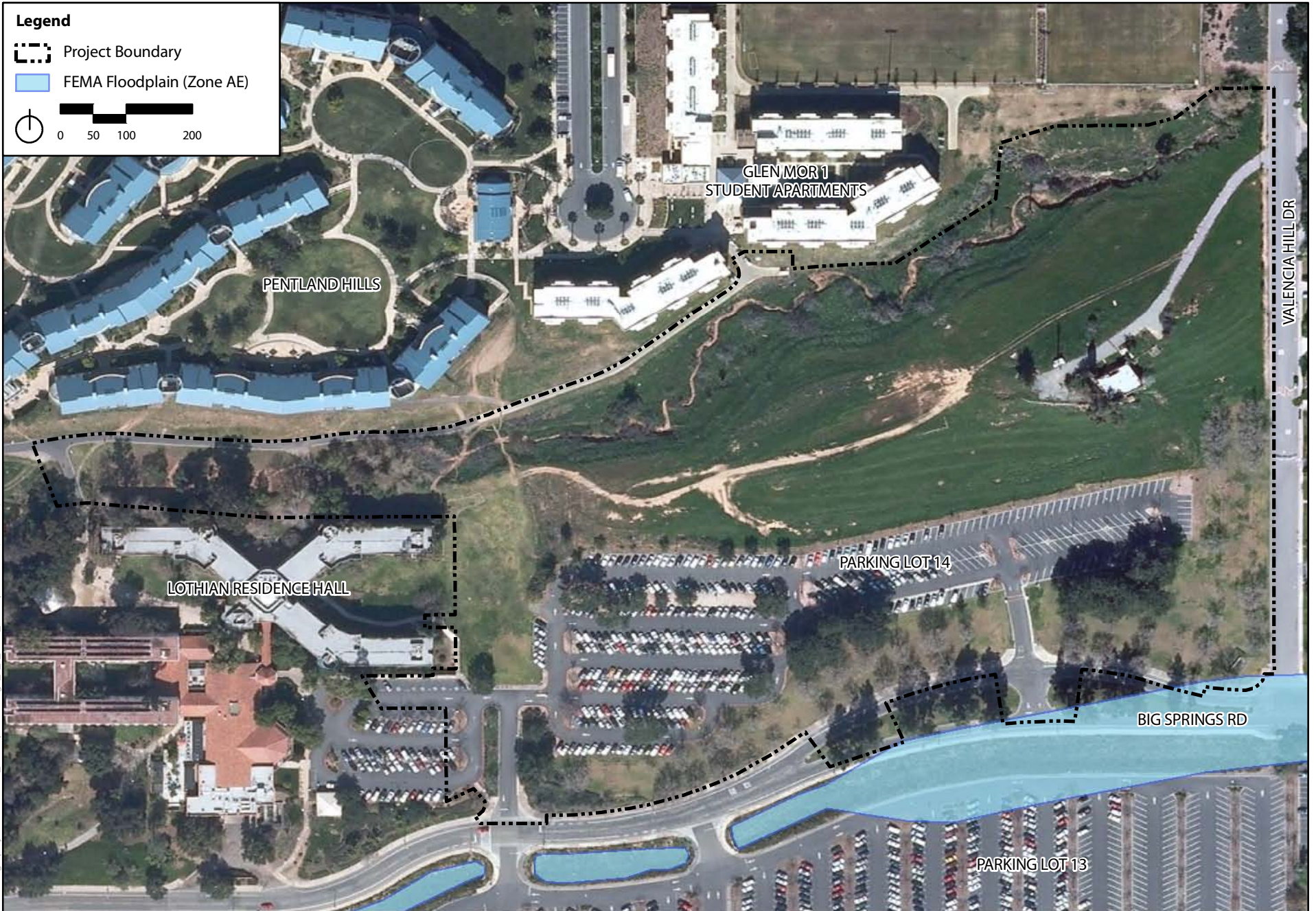


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Source: PWA Project #1418



Figure 3.8-1
University Arroyo Watershed
Glen Mor 2 Student Apartments



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Source: FEMA LOMR #10-09-0680P, 2010; FEMA NFHL, 2008

Figure 3.8-2
FEMA Floodplain
Glen Mor 2 Student Apartments

(Appendix P). The evaluation indicates that the typical depth of the flow within the arroyo is between 0.5 and 2.5 feet. However, there is one location where 100-year flows would overtop the arroyo banks. This location is at the west end of the drainage where existing culverts are blocked with sediment, resulting in increased depths of flow, in the range of 3 to 4 feet. The overflow limits affect a portion of the service/emergency access drive along the south side of the Pentland Hills residence halls. Within the Glen Mor 2 site, the flood limits are contained within the arroyo.

3.8.3 Regulatory Framework

Section 4.8.3 of the LRDP EIR presents a comprehensive discussion of regulations relevant to hydrology and water quality issues on the campus and the project site, including the federal Clean Water Act, the NPDES permit system, and the California Porter-Cologne Water Quality Control Act. It describes the regulatory authority of the Santa Ana RWQCB, Riverside County, and the City of Riverside within the project area. While the regulatory framework described in the LRDP EIR remains valid for this project-level analysis, several updates to the regulatory framework have been implemented since certification of the LRDP EIR. These are described below.

Federal Regulations

Clean Water Act – NPDES Permits

Since publication of the LRDP EIR, the NPDES permits for both construction-period stormwater discharges and general municipal runoff have been updated. The following summarizes the provisions of the updated regulations.

General Construction Activity Stormwater Permit

The current NPDES General Permit for Discharges of Stormwater Associated with Construction and Land Disturbance Activities (Construction General Permit) was adopted on September 2, 2009, and became effective July 1, 2010. As with the permit that was in effect at the time of LRDP EIR preparation, the current Construction General Permit (Order No. 2009-0009-DWQ) applies generally to projects that disturb 1 or more acres of soil. The new General Construction Permit retains the requirement for preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must be completed before construction begins. The new Construction General Permit takes a risk-based permitting approach that establishes three levels of possible risks for a construction site. Risk is calculated in two parts: (1) project sediment risk and (2) receiving water risk. Some of the new requirements under this general permit pertain to best management practices (BMPs), submittal of the SWPPP prior to commencement of construction, technology-based numeric action levels, technology-based numeric effluent limitations, receiving water monitoring and reporting, post-construction stormwater performance standards (effective September 2, 2012), a rain event action plan, and certification/training requirements for key project personnel.

Municipal Discharge Permit

A new Municipal Stormwater Permit for Riverside County was adopted by the Santa Ana Regional Water Quality Control Board in January 2010 (R8-2010-0033, NPDES CA8618033). While the campus is not a permittee under this program, the permit acknowledges the campus as a potential discharger to the municipal stormwater system and the intent that the campus and other such

dischargers will cooperate with the permittees in managing urban runoff. The City of Riverside is a permittee under the municipal stormwater permit; runoff from the campus discharges into the City's storm drain system.

The current municipal stormwater permit includes provisions related to new development and significant redevelopment, illicit and illegal connections, discharge prohibitions, inspections, monitoring and reporting, and public education and participation. The provisions for new development and significant redevelopment are directed at minimizing discharge of polluted runoff through design approaches that reduce impervious surface areas and provide for infiltration, filtration, and treatment of runoff.

The LRDP EIR (page 4.8-14) noted that the campus had filed for an individual NPDES stormwater permit. An individual permit was not obtained. The campus continues to implement the Stormwater Management Plan, which is consistent with the current municipal stormwater NPDES permit.

State Regulations

The Water Quality Control Plan (Basin Plan) for the Santa Ana region was last updated in February 2008. Basin plans provide the technical basis for determining waste discharge requirements (WDRs), taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every 3 years.

State Beneficial Uses for Surface Waters in the Project Area

The Santa Ana RWQCB Basin Plan (Santa Ana RWQCB 2008) describes beneficial uses for the waters in the Santa Ana River. Table 3.8-2 lists the beneficial uses for the three reaches of the Santa Ana River downstream of the campus.

Table 3.8-2. Beneficial Uses of the Santa Ana River

Beneficial Uses	Santa Ana River Reach 1	Santa Ana River Reach 2	Santa Ana River Reach 3
	17 th Street in Santa Ana to Pacific Ocean	Santa Ana Canyon to Orange County	Mission Boulevard to Prado Basin
Municipal and Domestic	+	+	+
Agriculture		X	X
Groundwater Recharge			X
Hydropower			
Water Contact Recreation	X ²	X	X
Noncontact Water Recreation	X	X	X
Freshwater Habitat—Warm	I	X	X
Freshwater Habitat—Cold Spawning—Cold			
Wildlife Habitat	I	X	X
Rare Species		X	X

Notes
 “X” indicates a present or potentially present beneficial use
 “I” indicates an intermittent beneficial use
 “+” indicates that this water body has been excepted from the municipal and domestic use designation in accordance with the State Water Resources Control Board’s “Sources of Drinking Water Policy”

3.8.4 Impact Analysis

This section presents a discussion of the potential hydrology and water quality impacts associated with construction and operation of the proposed project.

Methodology

As noted in the introduction to this section, the impact analysis presented herein is based in part on technical evaluations of site hydrology prepared for the project by the design team civil engineer, which include evaluations of pre- and post-project stormwater flow conditions and the project’s effect on flood elevations in the on-site arroyo. Hydrologic analyses prepared by Philip Williams & Associates in 2001 pertaining to the University Arroyo system were reviewed and adopted for input into hydraulic models, which were then used to define 100-year floodplain limits for the on-site arroyo, along with data obtained from a site visit to document the roughness coefficients and hydraulic parameters specific to the project site.

This discussion also considers the programmatic analysis provided in the LDRP EIR and the BMPs presented in a preliminary draft of the SWPPP prepared for the project.

Significance Criteria

The criteria for analyzing the project's impacts on hydrology and water quality are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criteria listed below.

- Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

The campus is not designated as a groundwater recharge area and does not serve as a primary source of groundwater recharge within the local subbasin. The proposed project is consistent with the type and intensity of development considered in the LRDP EIR. Established campus procedures pertaining to project design and construction management provide a mechanism to ensure incorporation of water conservation features in accordance with LRDP Planning Strategy Conservation 5 and Programs and Practices 4.8-2(a) through 4.8-2(c) into the completed project. Such features will help UCR reduce its demand for domestic water resources and, accordingly, its impact on local groundwater resources. Incorporation of the program-level determination (i.e., less-than-significant impact) remains valid, and no further analysis is required.

- Would the project otherwise substantially degrade water quality?

All impact analysis pertaining to water quality is provided in the discussion of Criterion 1, below.

- Would the project place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary Map, FIRM, or other flood hazard delineation map?

As shown in Figure 3.8-2, the FIRM 100-year floodplain occurring on the project site is limited to a very small area at the southeastern corner of the site, an area where no housing would be constructed. The 100-year flood limits associated with the Great Glen Arroyo are shown in Attachment C of Appendix P (Preliminary HEC-RAS Workmap). Because the proposed project would not place housing within a 100-year flood zone, impacts would not occur, and no further analysis is required.

- Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

The LRDP EIR (page 4.8-35) concludes that no reasonable threat of dam failure that would cause flooding on the UCR campus exists. A catastrophic impact related to failure of the California State Water Project pipeline is considered remote but possible; implementation of Programs and Practices 4.8-10 (Emergency Operations Plan) would reduce this impact to a less-than-significant level. Campus procedures for implementation of the Emergency Operations Plan are in place. The project's relationship to this plan is discussed in Section 3.7.4 of this EIR (see pages 3.7-11 through 3.7-12). This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

- Would the project result in inundation by seiche, tsunami, or mudflow?

Implementation of the proposed project would not result in buildings or persons being affected by seiche or tsunami because of the distance between the project site and the ocean or other water bodies and intervening topography. Although the LRDP EIR concludes that mudflows may occur in on-campus arroyos, the geotechnical evaluation conducted in support of the project design did not identify stability issues beyond two limited sections on the north bank of the arroyo, areas where stabilization improvements are proposed under the project. The proposed drainage improvements for the new housing site would not allow runoff to flow over the banks of the arroyo, thereby limiting potential exposure to mudflows. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Violate any water quality standards or waste discharge requirements;
2. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;
4. Place structures that would impede or redirect flood flows within a 100-year flood hazard area.

The issues addressed in the following criterion are addressed in the responses to criteria 1 through 3. Therefore, this criterion is not addressed separately in the analysis provided below.

- Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices that are relevant to hydrology and water quality. The applicable measures are identified in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the applicable measures pertain to policies regarding compliance with Santa Ana RWQCB requirements and NPDES permits, implementation of SCAQMD dust control measures (for erosion control benefit), minimized disturbance limits in naturalized open space areas, and review of individual projects to determine their potential to exceed the capacity of the storm drain system. Where necessary, project-specific measures related to LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project violate any water quality standards or waste discharge requirements?

Consistent with the campus-wide analysis on page 4.8-19 of the LRDP EIR, the project does not propose any point-source discharges and is not subject to waste discharge requirements related to such discharges. However, the project would entail work within and adjacent to the Great Glen Arroyo and generate runoff that would eventually discharge into the Santa Ana River. These circumstances present the potential for contaminated discharges during both the construction and operation phases.

Impact 3.8-1: Project construction would not violate water quality standards and or waste discharge requirements. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

The project would entail clearing, grading, and construction activity on the project site and stockpiling of excess soil material at an off-site campus location for an undetermined period of time. In general, the severity of construction-related water quality impacts would depend on the erosion potential of the soil; construction practices; the frequency, magnitude, and duration of precipitation events; and the proximity of construction to stream channels, rivers, or water bodies. Without proper safeguards, project construction could result in siltation or a discharge of chemical pollutants into the arroyo or the local storm drain system.

As required under the General Construction Permit, the campus Stormwater Management Plan, and LRDP Programs and Practices 4.8-3(d), project contractors would prepare and implement a SWPPP that specifies project-specific BMPs to limit the potential for the discharge of polluted water during construction. In addition to typical erosion-control provisions, the construction contractors and subcontractors would also be required to implement appropriate material management practices to reduce the potential for chemical spills or releases of contaminants, including any non-stormwater discharge, into drainage channels.

A preliminary SWPPP has been drafted for the project and will be updated and finalized prior to project construction. BMPs in the draft SWPPP include preserving existing vegetation, temporary soil stabilization, track-out control, street sweeping, storm drain inlet protections, controls along concentrated flow paths, and general good housekeeping practices to separate sources of pollutants from runoff. The Glen Mor 2 project has been classified as a Risk level 2 project under the Construction General Permit. Therefore, plan provisions must also include requirements for implementation of control measures 48 hours prior to predicted rain events (i.e., 50 percent or greater chance of precipitation) and both visual monitoring and stormwater quality monitoring to ensure that BMPs are functioning properly throughout construction.

The project would entail work within and adjacent to the arroyo and the associated stream, in part to improve bank stability and storm flow through this hydrologic feature. Improvements would include stabilizing two locations along the north bank, recontouring portions of the north bank, extending the existing culvert at Valencia Hill Drive, removing an existing culvert and associated fill northeast of Lothian Hall, clearing accumulated debris and sediment in the existing culvert at the downstream project limits, establishing a new storm drain outlet, and constructing two pedestrian bridges over the arroyo. In accordance with LRDP Programs and Practices 4.8-3(b), work within the arroyo would be completed primarily with manual labor, thereby limiting the disturbance, erosion

potential, and water quality issues that would otherwise be associated with the operation of mechanical equipment in the channel area. This ephemeral feature contains water for only very brief periods following infrequent storm events. Any work within the stream channel would be limited to times when flowing water is not present. Under these circumstances, proposed activities within the arroyo and associated stream channel would not have the potential to violate water quality standards.

With limited construction activity in the arroyo and channel area, in accordance with LRDP Programs and Practices 4.8-3(b), and implementation of the SWPPP, as required under LRDP Programs and Practices 4.8-3(d), potential water quality impacts associated with construction activity would be less than significant. Appendix F provides a cross-check for implementation of these LRDP programs and practices as part of the Glen Mor 2 project.

Impact 3.8-2: Operational stormwater discharges would not violate water quality standards or waste discharge requirements. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

Consistent with the conclusion stated in the LRDP EIR for overall campus development (see LRDP EIR, page 4.8-19), the project would increase the amount of impervious surface on the site by adding buildings and hardscape. This would result in additional stormwater runoff. Such runoff may contain contaminants that are considered typical for urbanized areas.

Project design would incorporate features to reduce runoff volume, including filtration features around building and hardscape perimeters and the use of permeable pavers for the segment of the perimeter access loop paralleling the arroyo. In addition, the on-site storm drain system would use broadly spaced inlets in landscaped areas to allow for infiltration and treatment of runoff prior to collection for discharge.

Runoff from approximately 2.5 acres in the northern portion of the project site would be collected in storm drains within on-site landscaped areas and directed to a modular wetland near the western arroyo bridge. This feature would treat the water before discharging it into the arroyo. Flows from an approximately 1.8-acre landscaped area along the Valencia Hill frontage would continue to discharge to the 18-inch-diameter storm drain in Valencia Hill Drive, which discharges to the 72-inch-diameter line in Big Springs Road. Runoff from the majority of the site would be collected in a series of on-site storm drains and discharged to the existing 72-inch-diameter storm drain in Big Springs Road, which flows into the Gage Basin at the northwest corner of the intersection of University Avenue and Canyon Crest Drive. The Gage Basin moderates flow velocities for sediment control and provides treatment in a natural riparian system.

LRDP Program and Practice 4.8-3(d) requires implementation of post-construction BMPs for new development in accordance with the campus Stormwater Management Plan and the project-specific SWPPP. Because the project would result in only common urban stormwater runoff, which would be properly treated through long-term BMPs, consistent with the Stormwater Management Plan, this impact would be less than significant, and no project-level mitigation is required. Appendix F provides a cross-check for implementation of this LRDP program and practice as part of the Glen Mor 2 project.

Criteria 2: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?

Impact 3.8-3: Implementation of the project would not substantially alter the existing drainage pattern of the site area in a manner that would result in substantial erosion or siltation on or off site. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

The potential for impacts in this regard would arise from direct alterations within a stream or alterations in discharge patterns involving concentrated discharges or increased flow volumes. The proposed project would involve direct alterations within the Great Glen Arroyo and construction of a new storm drain outlet within the arroyo, both of which present the potential for impacts. The arroyo improvements related to direct alteration of the stream channel are outlined below.

- Valencia Hill Drive Culvert Extension – This improvement would merely extend the discharge point. In accordance with standard design practice, the proposed improvements would include the placement of riprap at the new outlet, which can be expected to reduce the potential for erosion at this location.
- Culvert and Path Removal – This element of the proposed improvements would remove a constructed path as well as the blocked culvert beneath the path, both of which currently serve as impediments to flow through the arroyo. While the removal of existing impediments may initially increase the rate of flow within this reach of the channel, the arroyo bottom in this reach is approximately 60 feet wide, providing ample width for normalization. An unobstructed stream channel would be consistent with adjoining stream reaches, which are characterized by maximum widths of 5 feet. In the normalized condition, the altered stream channel would not be expected to present the potential for substantial erosion.
- Culvert Clean-out – This aspect of the proposed stream alteration would entail limited and temporary disturbance to restore the intended purpose of this culvert. As with the culvert removal work noted above, this element of the proposed improvements may be expected to increase the rate of flow. The area downstream of this culvert consists of a naturalized open space area that includes the Junction Basin element of the University Arroyo FCE system. These downstream features would control any increased sedimentation that may occur as the channel is normalizing to the improved-flow condition.

- **Bank Stabilization** – The bank stabilization element is intended to correct existing erosion damage to the banks of the arroyo. The proposed improvements would fill an approximately 125-foot-long reach of the existing stream channel just upstream of the longer of the two proposed bridges and an approximately 70-foot-long reach of a tributary to the main channel located generally south of the recreational fields. These improvements are intended to correct existing damage and adjust the stream channels to reduce the potential for future erosion and siltation. Within the tributary near the recreation fields, the filled section of channel would be permanently displaced.³ For the stabilization element closer to the easternmost pedestrian bridge, the adjacent arroyo bottom outside the proposed stabilization limits is approximately 50 to 100 feet wide. This would provide ample area for natural normalization of a new channel that would be consistent with the 10-foot width that characterizes the adjoining channel reaches.

With respect to project-related modification of the site's general drainage pattern, the proposed project has been designed to direct runoff to the three discharge locations that currently accommodate runoff from the site under existing conditions (i.e., Great Glen Arroyo, the Valencia Hill Drive storm drain, and the Big Springs Road storm drain), with a comparable area draining to each of the existing receiving features. Considering the finished site conditions under the proposed project as well as the existing University Arroyo FCE improvements, direct discharges to existing storm drains would not present the potential for increased erosion or sedimentation for the majority of the site. Proposed site development and drainage design would increase the volume of discharge to the arroyo by approximately 55 to 60 percent⁴ and concentrate the flow at a single point of discharge, potentially increasing the velocity of discharge and associated erosion potential. The proposed storm drain outlet would be located within the arroyo bottom, outside of the defined stream channel. Discharges from this outlet would be moderated by the proposed modular wetland feature and the installation of riprap at the outlet. These design features would reduce discharge velocity and the potential for substantial erosion.

The project design features noted above would eliminate the potential for substantial erosion due to changes in drainage patterns. These features are elements of the post-construction stormwater management design required under LRDP Program and Practice 4.8-3(d). Considering the overall beneficial nature of the proposed improvements and the established provisions for implementation of the LRDP program-level measure, this impact would be less than significant. Appendix F provides a cross-check for implementation of LRDP Program and Practice 4.8-3(d) as part of the Glen Mor 2 project.

³ This feature appears to be the result of erosional forces from a past upset condition in the immediate area. Field evaluation in conjunction with the biological resources investigation for this project revealed no evidence of an ongoing source of flow to this area.

⁴ Current site discharges to the arroyo are 3.71 cfs for 10-year storms and 5.56 cfs for 100-year storms. Post-project discharges would be 5.7 cfs for 10-year and 8.79 cfs for 100-year events.

Criteria 3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

Impact 3.8-4: The project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. *Impact Determination: Less than Significant*

As noted in the discussion of Impact 3.8-3, above, the Glen Mor 2 project would involve a number of elements that would alter existing drainage patterns. This impact focuses on (1) potential flooding impacts associated with the proposed increase in discharge volumes to the Great Glen Arroyo, (2) the potential increase in discharges to the University Arroyo FCE system due to site development in general, and (3) the potential increase in discharges to the University Arroyo FCE system due to the proposed LRDP land use designation amendment, which would replace the proposed athletic fields with a parking garage. Impact 3.8-5, below, addresses the potential direct effects of project elements that would be located within the defined flood limits for the Great Glen Arroyo and the University Arroyo.

The Great Glen Arroyo accepts flows of 96 cfs from off-campus tributary areas under 100-year flow conditions. The off-site tributary area is essentially built out, and major changes to the development pattern in the tributary area are not anticipated. Therefore, this condition is not expected to change substantially over time. Under existing conditions, approximately 2.5 acres along the northern edge of the proposed development limits drains toward the arroyo. While the exact nature of the existing discharge pattern is not known, no obvious points of concentration are evident in the field. Therefore, this is assumed to be a dispersed sheet flow. As depicted in the Existing Drainage Conditions and Proposed Drainage Conditions diagrams in the FLC hydraulic analysis of the arroyo (Appendix O), the proposed project would alter the boundaries of the area that drains toward the arroyo but would retain a comparable area of discharge (current area of 2.47 acres versus a post-project area of 2.48 acres). The developed site area that would discharge to the arroyo would include Building H and portions of buildings D, F, G and J. The added impervious surfaces associated with the buildings would increase the 100-year volume of discharge from 5.56 cfs to 8.79 cfs, representing an approximately 3 percent increase in the total 100-year discharge to the arroyo (3.23 cfs added to the existing 96 cfs). As noted under Impact 3.8-5, below, two existing impediments to flow in the immediate downstream area would be removed. These conditions, as well as the limited increase in discharge volume, would not substantially alter the flood limits within the arroyo. This impact is less than significant.

The campus has established storm drain improvements, identified previously as the University Arroyo FCE system, for the area of the campus where the Glen Mor 2 site is located. This system includes a network of buried conveyances, surface channels, and basins that have been sized to handle all tributary flows from upstream off-campus areas and all discharges from contributing portions of the East Campus. The design of the existing system was based on the assumed land use pattern and the associated impervious area percentages for the various defined subbasins (see Table 1 in Attachment A of Appendix P). The Glen Mor 2 site is within the subbasins referred to as Small 2 and Big DS in the referenced table. The arroyo area is within the Big DS subbasin. Proposed project improvements would result in a negligible amount of added impervious area in this subbasin, and the cumulative impervious area in this subbasin would not approach the 32 percent level assumed in the design study. Small 2 corresponds to the development site, which was assumed

to have an impervious area of 50 percent in the University Arroyo FCE design study. The project-specific hydrology study (see tables attached to Appendix O) indicates that the developed site would have 50 percent impervious cover, which is consistent with the design basis for the existing storm drain system. Accordingly, the existing storm drain improvements have adequate capacity to handle project runoff. The proposed project would not have the potential to result in flooding on site or off site. This impact is less than significant.

Criteria 4: Would the project place structures that would impede or redirect flood flows within a 100-year flood hazard area?

Impact 3.8-5: Proposed permanent and temporary encroachments into mapped floodplains would not impede or redirect flows in a manner that would adversely affect existing or proposed buildings or sensitive resources. *Impact Determination: Less than Significant*

As noted above, the FIRM 100-year floodplain is limited to a small portion of the site's southeastern corner, and the 100-year floodplain for the Great Glen Arroyo is largely confined by the arroyo banks. None of the proposed housing units would be placed in a 100-year flood hazard area.

Features in the FIRM floodplain area include the existing campus entry monument and landscaping at the northwest corner of Big Springs Road and Valencia Hill Drive, which would not be altered as part of the project, and an area of approximately 60 square feet within Big Springs Road where the ground surface would be raised by less than 1 foot to close an existing opening in the median. Adjoining lands within the mapped floodplain in the vicinity of the median improvements include the improved Big Springs Road right-of-way, the University Arroyo FCE Big Springs Road channel, and Parking Lot 13. No buildings or sensitive resources would be affected by the nominal changes in the floodplain limits that may result from the very limited amount of fill at the edge of the mapped floodplain.

Within the Great Glen Arroyo, several minor encroachments into the mapped floodplain limits are proposed (see Section 3.3, Figure 3.3-5).⁵ These are characterized below.

- Temporary encroachments are proposed to remove the path and the 12-inch-diameter culvert (at model station 582, identified in Appendix P, Preliminary HEC-RAS Workmap) and clean debris from the 54-inch-diameter culvert (between model stations 251 and 293, identified in Appendix P, Preliminary HEC-RAS Workmap). These improvements would eliminate existing flow impediments and adjust the floodplain limits so as to eliminate the existing flood exposure for the service/emergency access drive on the south side of Pentland Hills.
- The bridge abutment, water quality feature, and new storm drain outlet at the south end of the shorter of the two proposed pedestrian bridges would be located within the mapped floodplain between model stations 712 and 849 (identified in Appendix P, Preliminary HEC-RAS Workmap). In this reach of the arroyo, the grade along the channel bottom drops approximately 4 feet, the outer banks become much less pronounced, and the flood limits essentially correspond to the defined arroyo limits. The mapped flood limits in this location are affected by the existing downstream impediments, which would be removed as part of the path and culvert removal noted above. Elimination of the existing path and culvert would remove approximately 1,000 cubic feet of material from the immediate downstream area (assuming an average depth

⁵ The bank recontouring and abutment elements for the long bridge depicted in the referenced figure would not encroach on the flood limits.

of removal of 1 foot). The proposed encroachments associated with the bridge abutment and storm drain outlet would entail approximately 300 cubic feet of fill. These two encroachment elements would not displace floodplain volumes and, accordingly, would not have the potential to alter the floodplain limits in a manner that would adversely affect existing or proposed buildings or sensitive resources.

- The proposed bank stabilization improvements closest to the long pedestrian bridge (between model stations 1361 and 1555, identified in Appendix P, Preliminary HEC-RAS Workmap) would shift the stream channel in this location to a more central position within the arroyo bottom. The arroyo bottom is broad and has a uniform grade in this reach. The area within the arroyo bottom south of the stabilization area is approximately twice the width of the currently mapped flood limits, providing a width that would be more than adequate with respect to accommodating the proposed southward shift in the channel flow line and associated flood limits. The potential change in flood limits associated with this proposed encroachment would not have the potential to adversely affect existing or proposed buildings or other sensitive resources.
- The proposed bank stabilization improvements on the tributary flow line just upstream of model station 1826 (identified in Appendix P, Preliminary HEC-RAS Workmap) may encroach into the mapped floodplain. The encroachment at this location would involve rock or a commercial stabilization product. Considering the limited extent of the proposed encroachment, the potential change in flood limits here would not have the potential to adversely affect existing or proposed buildings or sensitive resources. Additional considerations supporting this conclusion include confinement of the mapped flood limits to the deeply incised channel at this location and the broad nature of the arroyo bottom in this area.
- Extension of the existing culvert at Valencia Hill Drive would shift the upstream limits of the arroyo to a point approximately 20 feet downstream of the existing condition. This proposed encroachment would eliminate the channel and associated flood limits upstream of the new headwall. Because the arroyo channel is a uniform depth and width in this reach, relocation of the outlet as proposed would not alter the downstream floodplain configuration.

As requested in Riverside County Flood Control's NOP response letter, the campus will coordinate with the City's Public Works Department regarding encroachments into the FIRM floodplain limits to confirm that the project would not impede or redirect 100-year flood flows.

3.8.5 Cumulative Impacts

Four cumulative projects listed in Section 3.0.4 of this EIR (i.e., the Barn Project, the Student Recreation Center expansion, the Health Sciences Teaching Center, and the Perris Valley Line Project) are located within the watershed boundary of the University Arroyo. As with the Glen Mor 2 project, construction of each of these cumulative projects would be conducted pursuant to a project-specific SWPPP that would prevent significant pollution of stormwater by eroded material or construction-related chemicals. Implementation of these individual SWPPPs will ensure that there is no cumulative construction-period impact on hydrology or water quality. All of these projects represent redevelopment of or reconstruction on existing sites and would not add a considerable amount of impervious surface; therefore, there would be no significant cumulative increase in the amount of stormwater runoff into the University Arroyo or the drainage system to which the Glen Mor 2 project would connect. Similarly, operation of these cumulative projects would not add a

significant amount of pollutants to the runoff. There would be no significant cumulative impact on water quality in this watershed. As with the Glen Mor 2 project, construction of these cumulative projects would be performed pursuant to a SWPPP to satisfy NPDES permit requirements. This would limit siltation and stormwater pollution in the watershed due to construction activities. Therefore, there would be no significant adverse cumulative impact on construction-period water quality.

Section 3.9
Land Use and Planning

3.9.1 Introduction

This section describes the affected environment and regulatory setting for land use and planning and describes the impacts on land use and planning that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts.

The City of Riverside response to the NOP acknowledged the campus' stated intent to address impacts related to land use compatibility with the surrounding area, and particularly the adjacent residential neighborhood. The City offered no additional detail as to specific aspects of land use compatibility that should be considered.

Several residents from the adjoining neighborhood raised concerns at the August 25, 2010, scoping meeting regarding potential land use compatibility issues related to the intensity of the proposed development and potential conflicts related to view changes, traffic, noise, and off-campus parking.

Two additional issues most closely related to land use were raised by area residents at the scoping meeting. The first centered on the effects on the local off-campus community due to a perceived trend by non-university private land owners to convert off-campus owner-occupied single family residences to multi-tenant rentals, typically occupied by students. This is not an issue that specifically relates to the project, and the campus and the University have no authority to control such conversions. The City of Riverside has acknowledged this trend and adopted regulations directed at controlling this issue by limiting the number of unrelated individuals who may occupy a single-family residence,¹ and the City and the campus continue to meet monthly as the City/UCR Planning Development Coordinating Committee to address such issues of mutual interest. Furthermore, by increasing the supply of on-campus student housing, this project is contributing in the only direct manner available to the campus to reduce the pressure for such conversions. The proposed student housing project is not likely to contribute to increased pressure for off-campus rentals; therefore, this circumstance is not addressed as a potential impact in this EIR.

The second issue related to the potential for a future blight condition resulting from possible abandonment of the proposed student housing following a major economic collapse and wholesale downscaling of the University of California system. State CEQA Guidelines Section 15145 provides that a Lead Agency may determine an impact is too speculative for evaluation, and may forego any further discussion of such an impact on this basis. The campus believes the possibility of the proposed student housing being abandoned in the future due to a major shift in the regional or global economy and, in turn, falling into a blighted condition, falls within the realm of speculation. This position is supported by the demand for on-campus student housing, which is evidenced by the waiting list, and tripling of double rooms, as noted in Section 3.4.12. On this basis, this circumstance is not addressed as a potential impact in this EIR.

¹ City of Riverside Municipal Code Chapter 19.52 defines rental of rooms and limits rentals to not more than four persons for a single-family residence.

3.9.2 Environmental Setting

The Glen Mor 2 Student Apartment Project is proposed to occupy an approximately 21-acre site generally situated at the northwest corner of Big Springs Road and Valencia Hill Drive. The project site is partially developed with an existing surface parking lot (Parking Lot 14) and a vacant single-family residence. The northern portion of the site features the Great Glen Arroyo and the remainder is covered in partially disturbed grassland, with mature landscape elements present along the Big Springs Road frontage and at the Big Springs Road/Valencia Hill Drive intersection. The project site currently includes interfaces with two edge conditions that are relevant to potential land use impacts.

First, the project site lies at the east edge of the campus and would complete development of the campus housing precinct planned for this area under the adopted LRDP. With respect to areas potentially affected by the Glen Mor 2 project, the off-campus neighborhood can be defined by the immediately adjoining area east of Valencia Hill Drive which may be directly impacted by physical changes on the project site, and the vicinity of the Watkins Drive and Big Springs Road intersection which may be impacted by project-related traffic using Watkins Drive. While there are apartment uses along Big Springs Road and a small commercial center at the intersection of Watkins Drive and Big Springs Road, the adjoining off-campus area is characterized by an established single-family residential community that developed concurrently with the founding and expansion of the UCR campus. Off-campus areas potentially affected by the Glen Mor 2 project are within the jurisdictional boundaries of the City of Riverside. Figure 2-2, provides an aerial photograph depicting the existing character of the campus and the adjoining off-campus areas. Section 2.2 provides a detailed discussion of the existing conditions in the surrounding area.

Second, the project site includes an area designated as *Naturalistic Open Space* under the adopted LRDP, corresponding to the Great Glen Arroyo. The Glen Mor 2 project is the last campus development to occur at the interface with this open space feature. The design development process for the Glen Mor 2 project has been focused upon minimizing intrusions upon the Arroyo. As the last campus development at this open space interface, the Glen Mor 2 project includes an arroyo enhancement element to implement the habitat restoration objectives of LRPP Planning Strategy Open Space 3.

3.9.3 Regulatory Framework

UCR LRDP

As a state agency, the University of California is exempt from local land use regulations. Land use authority for the campus is vested with the university, which administers land use authority through long-range development plans. The applicable land use plan for the campus is the 2005 LRDP. The adopted LRDP establishes three land use designations for the Glen Mor 2 site² (Figure 2-8). The primary designation for the site is *Family, Apartment Housing and Related Support*. For apartment uses, the

² The project site boundary extends into parking and landscape improvements associated with the existing Lothian Hall site, which is designated as *Residence Halls*. The proposed project improvements in these areas are limited to minor modifications of the existing improvements and are not addressed with respect to land use impacts.

LRDP (page 69) notes the intended intensity of development is 120 beds per acre³ and that this designation also includes associated resident student parking facilities. The LRDP (page 74) acknowledges the intent to transition the existing surface parking lots to parking structures.

The secondary LRDP land use designation for the site is *Athletics and Recreation*, depicted on the land use plan as occupying most of the Big Springs Road frontage. This designation is intended for locations in proximity to student housing and, campus-wide, is intended to accommodate curricular offerings, intramural sports, intercollegiate athletics, and student, faculty and staff recreation.

The third LRDP land use designation for the Glen Mor 2 site is *Open Space*. This designation applies to the Great Glen Arroyo along the north boundary of the site, which is further designated as *Naturalistic Open Space*, and to the frontage along Valencia Hill Drive which is further designated as *Buffer Area Landscaping*. The LRDP calls for preservation of existing landforms, native plant materials and trees within *Naturalistic Open Space*, and, where appropriate, restoration of habitat value. The boundaries of the *Naturalistic Open Space* designation on the LRDP Land Use Plan are conceptual. As part of the Glen Mor 2 project, the existing topographic feature and associated natural attributes have been evaluated to establish a defined boundary. This boundary is depicted in Figures 3.3-4 and 3.3-5 (following page 3.3-8) and has been used for the evaluation of the proposed limited encroachments into *Naturalistic Open Space* and as the basis for the proposed habitat restoration program. The *Buffer Area Landscaping* for the Valencia Hill frontage is described as approximately 100 feet in width with dense evergreen plantings and/or berms to visually screen the campus and buffer noise and lights (see LRDP page 124).

Other Plans

Information on the various federal, state, and local regulations governing land use and planning at UCR is provided in Section 4.9.3 of the LRDP EIR, beginning on page 4.9-5. Aside from updates to the plans noted below, the information in the LRDP EIR that is relevant to the Glen Mor 2 site remains valid.⁴

SCAG Regional Comprehensive Plan

Subsequent to certification of the LRDP EIR in 2005, an updated version of this regional plan was adopted in 2008. The comment letter submitted by SCAG in response to their review of the LRDP EIR advised of the SCAG determination that the overall campus development plan was not regionally significant and requested notice of any changes to the scope of the proposed project. The NOP for the Glen Mor 2 project was circulated to SCAG and no response was received. In the absence of a response and the fact that SCAG concluded that campus development on the whole is not regionally significant, it is appropriate to assume that the Glen Mor 2 is not considered regionally significant by SCAG. On this basis, a policy-by-policy evaluation of the most recent RCP is not required. The following provides a general characterization of the updated plan.

³ To yield approximately 4,800 additional beds from the approximately 40 acres so designated.

⁴ The information noted in the LRDP EIR regarding critical habitat for coastal California gnatcatcher is outdated. The final critical habitat designation included lands within the campus southeastern hills; this designation does not affect the Glen Mor 2 site. Critical habitat is addressed in the Biological Resources section of this EIR (Section 3.3) and the related technical report (Appendix I).

The 2008 RCP represents a complete reorganization of the previous plan format, with the previous four chapters (Growth Management, Regional Mobility, Air Quality and Water Quality) revamped into nine chapters (Land Use and Housing, Open Space and Habitat, Water, Energy, Air Quality, Solid Waste, Transportation, Security and Emergency Preparedness, and Economy). The plan identifies a program of policies and initiatives that are intended to provide a framework for growth and infrastructure development for a livable and sustainable region. The plan is the foundation for regional transportation and air quality planning, with an associated objective being positioning the Southern California region to obtain its fair share of State and federal funding opportunities.

As an advisory document, the RCP identifies policies that the public and private sector should consider in planning and daily operations, and identifies the implementation roles for various stakeholders. With respect to the Glen Mor 2 project, the relevant RCP roles and responsibilities are those identified for the private sector with respect to resource conservation and green building practices.

Each of the RCP chapters includes an action plan comprised of “Constrained Policies” and “Strategic Initiatives.” The policies and initiatives are categorized as best practices, legislation, or coordination. For development projects such as Glen Mor 2, the constrained policies identified as best practices are the applicable guidance. Best practices from each RCP chapter⁵ that would be applicable to the Glen Mor 2 project are characterized below. The project as designed and established campus operating procedures are substantially in conformance with these provisions.

- Land Use and Housing: integrate green building measures into project design (LU-6.2)
- Open Space and Habitat – minimize and mitigate impacts to natural lands (OSN-14); promote infill development (OSC-10); use resources efficiently, eliminate pollution, reduce waste (OSC-11); promote water-efficient land use and development (OSC-12)
- Water – infill development (WA-11); reduce water use (exterior and interior, WA-12); protect wetlands, groundwater recharge areas, woodlands, riparian corridors and production lands (WA-13); maximize pervious surface areas (WA-27); water management practices that avoid energy waste (WA-32)
- Energy – land use principles to increase biking and walking trips (EN-8); energy analysis in environmental documents (based upon State CEQA Guidelines Appendix F, EN-9); green building measures in project design (EN-10); provisions for rooftop solar panels/other renewable energy sources (EN-12); incentive to reduce single-occupancy vehicle trips (EN-14)
- Air Quality – minimize sensitive receptor exposure to local sources of air pollution (AQ-7); promote sustainable building practices/strive for carbon neutrality (AQ-8)
- Solid Waste – green building measures for waste reduction (SW-14); education programs for waste reduction (SW-21)

⁵ There are no applicable policies from the Transportation, Security and Emergency Preparedness, and Economy elements

City of Riverside General Plan

An updated General Plan for the City of Riverside was adopted in November 2007, with amendments in February 2009 and November 2009. The neighborhood provisions addressed in the LRDP EIR under the heading University Community Plan (page 4.9-7) are now included in the General Plan as the University Neighborhood Plan (General Plan Appendix C), with the most recent version adopted June 17, 2008.

The City of Riverside General Plan includes twelve elements – Land Use and Urban Design, Circulation and Community Mobility, Housing, Arts and Culture, Education, Public Safety, Noise, Open Space and Conservation, Air Quality, Public Facilities, Park and Recreations, and Historic Preservation. Consistent with the lack of regulatory authority over campus land use matters, the City of Riverside General Plan is largely silent to campus lands. The campus is identified as an Educational Institution in the Urban Design Framework (Figure LU-2), with an Open Space Connection running north-south through the campus, corresponding to the Gage Canal alignment, primarily within the West Campus. The campus Botanic Gardens and commons are identified as components of a comprehensive network of public open spaces referred to as “Riverside Park” (Figure LU-3) and are also noted in the Parks and Recreation Element as contributing to cultural and historical recreation (page PR-13). The Land Use Policy Map (Figure LU-10) designates the campus for Public Facilities/Institutional uses. Numerous campus facilities are noted as contributing to the City’s cultural environment in the Arts and Culture Element (Figure AC-1).

While the campus is not subject to local land use controls, the City General Plan establishes policies for lands adjoining the campus which are relevant to consideration of compatibility of campus development with the surrounding community. City General Plan policies relevant to particular resources found on campus are also noted in the spirit of City/campus cooperation. Relevant policies from each element⁶ are noted below and addressed further in the impact analysis.

- Land Use and Urban Design – span crossings of arroyos and streams (LU-5.3)
- Circulation and Community Mobility Element⁷ – maintain LOS D or better on Arterial Streets (CCM-2.3); sidewalk construction (CCM-8.4, CCM-10.6); bicycle and pedestrian facilities in development projects (CCM-10.2); provide adequate parking with new development (CCM 13.1)
- Housing – cooperation with UCR in meeting student, faculty and employee housing needs (H-4.3)
- Education – promote integration of universities and colleges with surrounding neighborhoods (ED-2.10); pedestrian-friendly facilities (ED-4.1)
- Historic Preservation – promote preservation of cultural resources controlled by other governmental agencies (HP-7.4)

⁶ The following City General Plan elements do not include policies relevant to the Glen Mor 2 project or compatibility with adjoining City areas: Arts and Culture, Public Facilities, and Park and Recreation

⁷ The Master Plan of Roadways (Figure CM-4) depicts a Special Boulevard extending through the East Campus from Martin Luther King Boulevard at SR60/I-215 to Watkins Drive in the vicinity of Valencia Hill Drive. This connection was dropped from campus plans with the 2005 LRDP update in favor of a limited access internal campus drive corresponding to Canyon Crest Drive and segments of the existing Campus Drive loop. This connection is not depicted in the University Neighborhood Plan. While this element of the City General Plan is not consistent with the LRDP, the Glen Mor 2 project would not interfere with future implementation of such a concept.

- Public Safety – new development conformance to geotechnical design standards (PS-1.1); proper handling of hazardous materials (PS-3.1); pedestrian accessibility, including sidewalks in new development (PS-5.1); streetscape design for safety and walkability (PS-5.2); adequate safety lighting in pedestrian areas and parking lots (PS-5.4); coordinate police services with campus police forces (PS-7.4)
- Noise – enforce noise abatement/control in residential neighborhoods (N-1.1; N-1.3); noise reducing features in project design (N-1.2); minimize noise impacts from vehicular sources (N-4.1)
- Open Space and Conservation – protect critical environmental areas, including arroyos⁸ (OS-2.2, OS-2.4, OS-5.1, OS-6.3); compliance with WRC MSHCP (OS-5.2); protect native plant communities, including riparian areas (OS-5.4); use of renewable energy sources (OS-8.1, OS-8.8); energy conservation features in new construction (OS-8.2, OS-8.6); alternative transportation to reduce non-renewable energy consumption (OS-8.10); new development conformance to NPDES requirements, including use of landscaping for runoff filtration (OS-10.8)
- Air Quality – protect sensitive receptors from significant sources of pollution (AQ-1.3); trip reduction plans (AQ-2.6); implementation of SCAQMD Rule 403 to reduce construction particulate emissions (AQ-4.2); suspend grading operation when winds exceed 25 miles per hour (AQ-4.5), energy efficiency and conservation through waste reduction, use of renewable energy sources, and building construction to meet or exceed Title 24 requirements (AQ-5.1, AQ-5.3, AQ-5.4, AQ-5.7); permeable surfaces for water infiltration (AQ-8.43)

The University Neighborhood Plan (UNP) covers an area in the northeast corner of the City of Riverside, encompassing the UCR campus and surrounding lands generally bounded by Chicago Avenue to the west, Spruce Street and the City boundary to the north, Le Conte Drive and University Drive to the south, and the City boundary to the east. Plan provisions related to through traffic on Valencia Hill Drive (Policy UNP 6.3) and off-campus parking (Policy UNP 6.1) have been addressed by placement of barricades on Valencia Hill Drive⁹ and by establishment of a permit-only parking program throughout the residential areas east of the campus. These improvements and programs are administered and enforced by the City of Riverside. The UNP also calls for establishment of the Watkins Drive Parkway (Policy UNP 6.4), to create a less auto-centric character for this circulation network element. As with the Valencia Hill Drive improvements, the City of Riverside has completed interim restriping improvements and parking restrictions that implement the primary functional elements of this policy.

Elements of the University Neighborhood Plan that are relevant to the Glen Mor 2 project relate to land use compatibility at the campus edge and coordination with the City and community interests. Specific relevant policies from the UNP are:

- Coordinate with UCR and neighborhood groups (UNP 1.1, UNP 7.2)
- Protect the character of the existing single-family neighborhoods; minimize potential “town-gown” conflicts (UNP 1.3)

⁸ While not reflected on Figure OS-4, Arroyos, the text of the City General Plan recognizes the University Arroyo (page OS-18).

⁹ UNP Tool 6.3.1 calls for evaluation of reconstruction of Valencia Hill Drive as a cul-de-sac. As noted in the UNP, temporary barricades to provide the functional equivalent of a cul-de-sac were established in January 2008.

3.9.4 Impact Analysis

This section presents a discussion of the potential land use and planning impacts associated with the construction and operation of the proposed project.

Methodology

The evaluation of land use and planning impacts considers consistency of the proposed Glen Mor 2 project with land use policies of applicable regional plans. In addition, existing and proposed land uses are compared to evaluate potential for incompatibilities, including consideration of related impact analyses for noise, air quality, and light and glare. Finally, evaluation of land use impacts compares potential on-campus recreational facility development under the proposed LRDP amendment to facility needs identified under the adopted LRDP.

The NOP for the Glen Mor 2 project indicated that parking supply would be addressed as a land use matter. Subsequent to issuance of the NOP, it was decided to address parking as an aspect of Transportation and Traffic. Parking is addressed as Impact 3.13-7, beginning on page 3.13-15, with existing conditions information presented on pages 3.13-4 through 6.

Significance Criteria

The criteria for analyzing the project's impacts on land use and planning are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, programmatic impact analysis provided in the 2005 LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments project does not present the potential for significant impacts for the following significance criterion.

- Would the project physically divide an established community?

The project proposes development at the edge of campus in an area planned for development in the LRDP. The LRDP EIR (page 4.9-9) concludes that there would be no impact regarding the division of any established communities because all development under the LRDP is confined to areas within the campus boundaries. This rationale remains applicable to the proposed Glen Mor 2 Student Apartment project. Therefore, this impact is adequately addressed in the LRDP EIR, and no further analysis is required.

The following Appendix G significance criterion is addressed in Section 3.3, Biological Resources (Impact 3.3-11) and, therefore, is not analyzed as a land use impact in this section.

- Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments project would result in a significant impact if it would:

1. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

2. Create other land use impacts?

The LRDP EIR included an added campus criterion related to development of land uses that are substantially incompatible with existing adjacent land uses or with planned land uses. This LRDP significance criterion is addressed as part of this Appendix G criterion.

LRDP MMRP Measures

The LRDP EIR identifies a series of land use Planning Strategies, Programs and Practices and Mitigation Measures. The applicable measures are identified in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the measures address increasing the stock of on-campus and campus controlled housing, replacing surface parking with structures, preserving and restoring open space features, and design considerations to minimize incompatibilities at campus edge locations. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments project are presented in this EIR as project-specific mitigation.

LRDP Planning Strategy 6 calls for expansion of athletic and recreational facilities and fields adjacent to concentrations of student housing. The potential conflict with this LRDP measure related to the LRDP Amendment aspect of the Glen Mor 2 Student Apartment project is addressed below under Impact 3.9-4.

The LRDP EIR also notes numerous Programs and Practices and Mitigation Measures for impact categories other than Land Use as contributing to consistency of LRDP implementing activities with applicable land use plans and policies. Measures applicable to the Glen Mor 2 project are identified below. Additional detail regarding project consistency with these elements maybe found in the indicated sections of Chapter 3 of this EIR.

Table 3.9-1 Other LRDP Programs and Practices Assuring Consistency with Land Use Plans and Policies

Measure	Summary Provisions
Programs and Practices	
4.4-1(b)	Avoidance measures and management practices to reduce disturbance of Naturalistic Open Space (see Section 3.3, Biological Resources)
4.5-3	Surveys for, and protection of, archaeological resources (see Section 3.4, Cultural Resources)
4.5-5	Consultation requirements if human remains are encountered (see Section 3.4, Cultural Resources)
4.6-1(a)	Consideration of geotechnical constraints (see Section 3.5, Geology and Soils)
4.7-7(a) and (b)	Construction access, traffic control and detours (see Section 3.13, Transportation and Traffic)
4.10-7(a) through (d)	Hours of operation, management practices and coordination efforts related to construction noise (see Section 3.10, Noise)
4.10-8	Coordination with off-campus constituents regarding construction noise (see Section 3.10, Noise)
4.14-1	Transportation Demand Management program (see Section 3.13, Transportation and Traffic)

Measure	Summary Provisions
Mitigation Measures	
4.3-2 and 4.3-3	Construction-period air pollutant emission reductions and design features to reduce energy consumption and associated areawide air pollutant emissions(see Section 3.2, Air Quality)
4.4-1(a) and (b)	Surveys, avoidance measures, and mitigation for special status species (see Section 3.3, Biological Resources)
4.4-3(a) and (b)	Surveys, avoidance measures, and mitigation for wetlands, jurisdictional waters and riparian habitat (see Section 3.3, Biological Resources)
4.4-4 (a) and (b)	Protection of nesting birds (see Section 3.3, Biological Resources)
4.5-1 (a) and (b)	Evaluation and preservation of historic structures (see Section 3.4, Cultural Resources)
4.5-2	Relocation/recordation of historic structures (see Section 3.4, Cultural Resources)
4.6-1(a)	Site-specific geotechnical studies (see Section 3.5, Geology and Soils)
4.7-8(a) and (b)	Landscaping and fuel management adjacent to open space features (see Section 3.3,see Section 3.3, Biological Resources)
4.8-9 (a) and (b)	Considerations within floodplains (see Section 3.8, Hydrology and Water Quality)

Impacts and Mitigation Measures

Criteria 1: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

As required by CEQA Guidelines Section 15125 (d), the discussion of impacts below focuses upon project consistency with applicable general plans, specific plans and regional plans. Project consistency with four applicable regional plans adopted for the purpose of avoiding or mitigating environmental effects (i.e., AQMP, WRC MSHCP, SKR HCP and Basin Plan) is addressed in the Air Quality, Biological Resources and Hydrology and Water Quality sections of Chapter 3 of this EIR. Impact 3.9-1, below, addresses project consistency with the remaining applicable regional plan, the SCAG RCP.

City General Plan Evaluation

While the campus is not legally subject to provisions of the City of Riverside General Plan, in the spirit of campus/City/community cooperation, the Glen Mor 2 project has been evaluated for consistency with City General Plan provisions governing resources and infrastructure potentially affected by the proposed development.

The Glen Mor 2 project includes two bridges across the Great Glen Arroyo, a tributary of the University Arroyo. These bridges are designed as span structures, consistent with City General Plan Policy LU-5.3. The bridges will replace existing foot paths through the arroyo, eliminating this existing source of disturbance.

The evaluation of Traffic and Transportation (see Impact 3.13-1) documents compliance with City General Plan Policy CCM-2.3 relative to maintaining a service level of LOS D or better on arterial streets. Consistency with this policy is based upon implementation of TR-1, which provides for a proportional contribution to installation of a traffic signal at the Watkins Drive/Big Springs Road intersection.

The evaluation of Cultural Resources (see Impact 3.4-1) determined that the existing residence is not historically significant, considering both architectural integrity and associations with individuals or events. Accordingly, the proposed demolition would not conflict with City General Plan Policy HP-7.4.

With respect to City General Plan provisions related to public safety, the evaluation of Geology and Soils (Section 3.5) documents project design features and established campus practices that ensure conformance to geotechnical design standards, consistent with City General Plan Policy PS-1.1. The project was modified based upon City and community comments at the NOP stage to include a sidewalk along the Valencia Hill Drive frontage (Policies PS-5.1 and PS-5.2). The location of diesel storage tanks associated with proposed emergency generators provides recommended separations from off-campus residential uses (see Impact 3.7-3, beginning on page 3.7-7). The discussion of Public Services in Section 3.11 notes the campus' ongoing participation in the UNET program in furtherance of City General Plan Policy PS-7.4.

The evaluation of noise impacts (Section 3.10) identifies mitigating design features for the parking structure to reduce operation phase impacts upon nearby off-campus residential receptors (Policy N-1.2). The campus has voluntarily agreed to impose the more restrictive City construction time periods for this project (see Mitigation Measure NOI 2, Section 3.10). Neither construction phase nor operation phase traffic changes result in significant noise impacts to sensitive receptors along affected roads (Policy N-4.1).

City policies related to Open Space and Conservation are addressed by project design features, including substantial avoidance and enhancement of the Great Glen Arroyo, consistency with the WRC MSHCP, and design features for energy conservation, alternative transportation, and water quality.

Provisions of the City Air Quality Element relate to construction period emission minimization measures, green building practices, and protection of sensitive receptors from significant sources of pollution. As previously noted, project design incorporates numerous green building practices intended to qualify the Glen Mor 2 development for LEED Gold status (Policies AQ-5.1, 5.3, 5.4, 5.7, and 8.43). With implementation of mitigation measures (see Section 3.2), air emissions associated with project construction, the proposed parking structure, area emissions from the proposed buildings, and project traffic on local roads are all below applicable significance thresholds (Policies AQ-1.3, 2.6, 4.2 and 4.5).

The University Neighborhood Plan includes recommendations for specific improvements to Valencia Hill Drive and Watkins Drive. The Glen Mor 2 project does not conflict with these recommended improvements and would not preclude future implementation in accordance with the City General Plan. In furtherance of City General Plan policies UNP 1.1 and 7.2, the campus presented the Glen Mor 2 project to the City/UCR Planning Development Coordination Committee (City of Riverside 2010) and conducted two community meetings in support of the design process (one on April 7, 2010 and one on May 12, 2010).

Impact 3.9-1: The Glen Mor 2 project is consistent with the SCAG Regional Comprehensive Plan. *Impact Determination: Less than Significant*

As noted in the summary of the RCP in the Existing Setting section above, policies relevant to the Glen Mor 2 project involve resource conservation and green building practices. The Glen Mor 2 Student Apartment project is at an infill location within an urbanized setting. The proposed development plan substantially avoids impacts on a riparian open space feature (the Great Glen Arroyo) and includes a restoration element to enhance habitat values within the conserved feature. The project has been designed to achieve a LEED Gold rating, through building design practices that reduce water and energy consumption (including solar systems for water heating and energy production), site design elements that promote alternative transportation, site design incorporating low impact design features for runoff reduction and treatment, provisions to reduce construction waste, and use of building materials from local sources and with recycled content.

Notwithstanding the fact that the Glen Mor 2 project is not a regionally significant project and, therefore not technically subject to a determination of consistency with the RCP, project features are consistent with the relevant RCP policies. The project would not conflict with RCP policies directed at avoiding or mitigating environmental effects. This impact is less than significant.

Impact 3.9-2: The Glen Mor 2 project is consistent with the UCR Long Range Development Plan. *Impact Determination: Less than Significant with Mitigation Incorporated*

The proposed project would amend the LRDP to change the land use designation of approximately 4.8 acres from *Athletics and Recreation* to *Family, Apartment Housing and Related Support*. While an amendment would seem, by definition, to be inconsistent with the adopted plan, this is not necessarily the case. Ramifications of this change in land use designation related to ability to meet the on-campus recreational needs and land use compatibility are addressed separately in Impact 3.9-4.

The NOP (page 27) determined that the intensity of development for the Glen Mor 2 project in terms of projected student population and provision of on-campus housing is consistent with the adopted LRDP. The basic intensity of the proposed project has not changed since issuance of the NOP and the previous general consistency determination remains valid. The following addresses project consistency with the remaining LRDP planning strategies and programs and practices applicable to land use.

The Glen Mor 2 project has been developed under the campus design review process (PS Development Strategy 1), with the design development overseen by a design team consisting of campus representatives and consulting professionals, with input from a design review board that draws in representation from campus administration and faculty as well as three architects and a landscape architect who are not affiliated with the design team. This review has been focused upon design in accordance with Programs and Practices PP4.9-1(a) with respect to building scale and massing, architectural style, color palettes, preservation of existing site features, and lighting. The design review process has also considered the proposed landscape design in accordance with PP 4.9-1(b), with the design considering plantings to screen proposed structures, to buffer adjacent land uses, to transition to natural areas, and to reduce water demand. The proposed project is consistent with the design process aspects of these LRDP provisions. Impact 3.9-3, below, provides additional discussion of land use compatibility aspects of PP 4.9-1(a).

In accordance with LRDP measures PS Open Space 4 and Campus and Community 1, the proposed development plan (Figure 2-3) incorporates the designated landscaped buffer along the Valencia Hill Drive frontage. The minimum buffer from the existing curb on the west side of Valencia Hill Drive (“campus edge”) is a little more than 100 feet to the edge of the access drive and parking court serving the proposed Executive Retreat. The nearest building edge is approximately 115 feet from the campus edge, which corresponds to the private patio areas for the two guest suites at the proposed Executive Retreat. The outdoor use areas for the Executive Retreat are approximately 175 feet away from the campus edge and have been placed so that the building shields this area from the off-campus residential area. The nearest residential building to the campus edge is Building G, situated approximately 175 feet from the existing curb on Valencia Hill Drive. The other residential building on the east side of the site (Building H) is approximately 290 feet from the campus edge. The east wall of the proposed parking structure is approximately 115 feet from the campus edge. Landscaping that currently buffers the existing Lot 14 from off-campus areas to the east would remain as part of the project, with enhanced planting of additional trees as part of the Glen Mor 2 project. For these reasons, the proposed project is consistent with the LRDP’s buffer provisions.

The evaluation of biological resources impacts (Impact 3.3-15 and Figure 3-4) documents consistency with PS Open Space 3 and PS Conservation 1 by means of substantial avoidance of the arroyo limits and the proposed Arroyo Enhancement program (Mitigation Measures BIO 3 through 7). On this basis, the Glen Mor 2 project is consistent with these provisions of the UCR LRDP.

In accordance with PS Conservation 1, the project design protects mature trees along the Big Springs Road and Valencia Hill frontages. The proposed tree removal plan was reviewed by the Campus Landscape Architect (Personal Communication, Bullock 2010) and, based upon protection of a specimen oak tree near the westernmost project entrance, was determined to be consistent with campus provisions for protection of mature trees as required in LRDP PP 4.9-1(b). There are no mature specimen trees on the site requiring consideration for relocation pursuant to LRDP PP 4.9-1(c).

Finally, as noted above with respect to the University Neighborhood Plan provisions for cooperative efforts with the City under PP 4.9-1(d), the Glen Mor 2 project has been considered by the joint City/campus development review committee and has been the subject of two community meetings for review of the proposed design, which resulted in modifications to the project design, including the proposed sidewalk along Valencia Hill Drive.

In summary, the Glen Mor 2 project is consistent with the basic intensity of student housing development envisioned under the LRDP. The proposed project design, direct physical impacts, and operational impacts, with incorporation of numerous LRDP MMRP provisions and project-specific mitigation measures, comply with applicable LRDP provisions as detailed above and as addressed in the other sections of this EIR identified in Table 3.9-1. On this basis, the proposed Glen Mor 2 project would not conflict with the LRDP and this impact is less than significant. No additional project-specific mitigation measures beyond those identified above for other impact issue areas are necessary to address this land use impact.

Criteria 2: Would the project create other land use impacts?

Impact 3.9-3: Implementation of the Glen Mor 2 project will establish multiple-family style student apartment buildings and associated support facilities, including a parking structure, at a campus edge location adjacent to an established residential neighborhood. *Impact Determination: Less than Significant*

The LRDP EIR acknowledges proposed development of student housing at this location and the potential for land use conflicts with establishment of multiple-family residential intensity uses in proximity to an established single-family residential neighborhood. The program-level review in the certified LRDP EIR (page 4.9-13) determined that incorporation of setbacks, landscape buffers and site design considerations in furtherance of PS Campus and Community 1, PS Open Space 4, and PP 4.9-1(a), (b) and (d), would provide for development of student housing that would be compatible with the existing off-campus uses.

In general, the potential for land use conflicts may arise from incompatibilities related to type of use, intensity of use, noise, air quality, and light and glare. While the residential nature of the Glen Mor 2 project is consistent with the residential setting, the proposed intensity of use is multiple-family in character, with an established single-family residential neighborhood situated on the opposite side of the street that forms both the project boundary and the campus boundary. This basic contrast in intensity of use warrants more detailed examination of site specific circumstances in the evaluation of potential land use incompatibility.

Several aspects of design of the Glen Mor 2 project are directed at minimizing the potential incompatibility due to the contrasting intensities of use. Figures 2-3 and 2-4 (Section 2, Project Description), the architectural exhibits provided in Appendix B, and the photosimulations provided in Section 3.1 (Aesthetics) may be referred to for clarification of the following descriptions of the proposed developed site.

The project design incorporates the planned landscape buffer along the Valencia Hill Drive frontage, in accordance with LRDP policy, with the building closest to the adjacent single-family residential neighborhood being the proposed Executive Retreat. The size, height and configuration of the Executive Retreat building are comparable to the single-family homes in the adjoining neighborhood. As noted under Impact 3.9-2, the orientation of proposed use areas within the Executive Retreat is directed at buffering the existing neighborhood from the active use areas. Access for group events at this location would entail parking in the proposed parking structure or nearby Parking Lot 13, with pedestrian or campus shuttle access along the indicated path.

The two residential apartment buildings that are located in the east quadrant of the site (Buildings G and H) would be approximately 200 feet and 300 feet, respectively, from the existing curblin on the west side of Valencia Hill Drive. Valencia Hill Drive and the setbacks to the existing houses provide an additional separation of at least 65 feet. The buildings have been oriented with the narrow ends facing the neighborhood to reduce the mass and scale perceived from this viewpoint. The terraced site plan places the proposed pool deck—a potential hub of on-site activity—approximately 15 feet below the level of the open area between these two buildings. This grade change and the intervening Community Building (Building F) provide an impediment to noise from outdoor activities drifting toward the off-campus area. Open areas to the north edge of the residential site are intended for limited campus maintenance and emergency vehicle access, pedestrian movement, and quiet enjoyment of the restored arroyo.

The proposed parking structure is set into the existing ridgeline. The proposed finished grades and intervening Building G would effectively shield this use from the single-family uses on the north part of Valencia Hill Drive. The separation provided by the landscape buffer along the Valencia Hill Drive frontage would provide substantial attenuation of noise from this new parking structure as perceived at the nearby off-campus apartments.

The balance of the proposed site development consists of the Resident Services building (Building E), three residential buildings (Buildings B, C, and D), and the Food Emporium (Building A). These elements of the project would be situated approximately 500 to 1,000 feet from the campus edge along Valencia Hill Drive and would be buffered from the off-campus community by the intervening buildings and grade differential.

Site design eliminates the existing driveway on Valencia Hill Drive and establishes a fence along the Valencia Hill Drive frontage. These project elements better define the campus edge. Together with the proposed groundcover and shrub treatments for landscaping in the area north of the proposed parking structure, these improvements would serve to limit campus-related activity within the buffer area and interaction between on-site uses and the adjacent off-campus residential area.

Air quality (Section 3.1), noise (Section 3.10) and aesthetics (Section 3.1) impacts are addressed in detail in the indicated sections of this EIR. For air quality, the evaluation considered emissions from energy consumption and general vehicle use associated with the student apartments and support uses, as well as carbon monoxide emissions from the parking structure and from idling traffic at the intersection of Big Springs Road and Valencia Hill Drive. Noise analysis focused upon the parking structure. Aesthetics considered changes in the viewshed from key observation points, and proposed lighting of the parking structure. For all of these potential impacts, the respective analyses conclude that the operational impacts of the proposed project at this interface with the off-campus community would be less than significant.

While it is clear that implementation of the Glen Mor 2 project will change existing land use at this location, the issue is whether the resultant change is significant in the context of land use compatibility. On the basis of the substantial setbacks and various mitigating project design features described above, and the less-than-significant impacts related to air quality, noise, and aesthetics, the proposed project would not be incompatible with the nearby off-campus neighborhood. This impact is less than significant and no additional project-specific mitigation beyond that identified above for other impact issue areas is required to address this land use impact.

Impact 3.9-4: Implementation of the Glen Mor 2 project will reduce the amount of land designated for *Athletics and Recreation* uses under the LRDP. *Impact Determination: Less than Significant*

The LRDP designates 67.5 acres of land campus-wide for *Athletics and Recreation* uses. The acreage was deemed adequate to provide the various indoor and outdoor recreational facilities required to meet projected demand for curricular offerings, intramural sports, intercollegiate athletics, and student, faculty and staff recreation for the LRDP build-out population of 35,540 total campus population (25,000 students). The inventory of campus facilities considered in establishing the designated land area is presented in Section 3.12, Recreation (see Table 3.12-2).

LRDP Planning Strategy Land Use 6 calls for expansion of athletic and recreation facilities and fields adjacent to concentrations of student housing. This policy is directed, in part, at placing these activity centers, and associated impacts, in proximity to the users, and away from campus academic

precincts. While the proposed LRDP amendment would eliminate an area currently designated for *Athletics and Recreation* uses in the student housing precinct, it does not preclude the ability to establish such uses in proximity to student housing. The proposed LRDP amendment is not in conflict with this planning strategy.

With respect to land use impacts, the relevant consideration is designation of suitable land area to accommodate the necessary facilities as campus development proceeds. The inventory of existing campus recreational facilities presented in Section 3.12 (Table 3.12-1) indicates that existing campus recreational facilities encompass an area of approximately 44.5 acres. This includes approximately 5 acres currently occupied by the softball and soccer facilities east of Canyon Crest Drive at University Avenue, which are on land designated for *Academic* uses.¹⁰ The remaining 39.5 acres are designated for *Athletics and Recreation* uses and provide a range of recreational facilities contributing to the planned facilities for the LRDP build-out population.

Considering the existing facilities that are located on lands designated for *Athletics and Recreation* uses, Table 3.9-2 provides a summary of the additional facilities contemplated for the build-out population under the LRDP. Required land area is also identified, based on National Recreation and Parks Association standards (Lancaster 1990).

Table 3.9-2. Recreational Facilities to Be Provided for LRDP Build Out

Facility and Required Area	Rule of Thumb per Headcount	2010/2011 Existing	LRDP Buildout Need	To Be Provided	Required Land Area (acres)
Outdoor Lighted Multi-Use Fields (1.7 to 2.1 acres)	1 per 2,500	8	14	6	10.2 to 12.6
Outdoor Basketball Courts (8,000 square feet)	1 per 2,500	5	14	9	1.7
Indoor Multi-Purpose Courts	1 per 2,500	8	14	6	See note
Multi-Use Hockey/Basketball/Indoor Soccer (8,000 square feet)	1 per 2,500	1	14	13	See note
Sand Volleyball Courts (4,000 square feet)	1 per 2,500	2	14	12	1.1
Racquetball/Handball	Unknown	4	N/A	N/A	See note
Squash	Unknown	1	N/A	N/A	See note
Recreational Softball Diamonds (1.5 to 2.0 acres)	1 per 7,500	2	5	3	4.5 to 6
Baseball Stadium	1 per	1	1	1	--

¹⁰ The UCR 10-year Capital Financial Plan (available at <http://www.ucop.edu/capitalprojects/documents/cfp09-10/rv.pdf>) does not include any proposed building projects that would displace these existing facilities. Any replacement will occur well beyond the occupancy date for the Glen Mor 2 project.

Facility and Required Area	Rule of Thumb per Headcount	2010/2011 Existing	LRDP Buildout Need	To Be Provided	Required Land Area (acres)
	campus				
Softball Stadium (replace existing)	1 per campus	1	1	1	2.2
Soccer Competitive Pitch with Spectator Seating (replace existing)	1 per campus	1	1	1	2.4
Soccer Practice Pitch (1.7 to 2 acres)	1 per campus	None	1	1	1.7 to 2
Track with Field Events Venue r	1 per campus	1	1	0	--
Swimming Pool—Recreational	1 major pool per 15,000	None	2	2	1 to 4
Swimming Pool—Instructional/Competitive Physical Education	1 per campus depending on programs	1	1	0	--
Tennis Courts (7,200 square feet)	1 per 1,000	10	36	26	4.3

Note:

Facilities considered part of proposed West Campus Student Recreation Center, encompassing approximately 3.8-acre site (comparable to existing East Campus facility).

As reflected in Table 3.9-2, the total land area required to provide the recreational facilities anticipated under LRDP build out ranges from 32.9 to 40 acres. This analysis does not take into account the ability to accommodate some facilities on overlapping sites (e.g., recreational softball field overlays on multi-use fields). Taking this potential economy into consideration, the land areas needed to accommodate the recreational program would be 26.9 to 35.5 acres. Recent campus master planning efforts have introduced the concept of accommodating courts or recreational fields on the upper deck of future parking structures, providing the opportunity for further economies.

The LRDP currently designates approximately 28 acres for *Athletics and Recreation* uses that have not been developed with such uses. The loss of 4.8 acres with the proposed LRDP amendment would leave 23.2 acres designated for such uses. At the low end of the required land area calculations, the proposed LRDP amendment would result in a potential deficit of 3.7 acres of land designated for *Athletics and Recreation* uses. This potential deficit includes 4.6 acres that would be required to replace the existing softball and soccer competitive facilities. Proposed parking structures for general use and housing use in proximity to existing recreational facilities and East Campus student housing areas would also provide more than 10 acres of roof deck for development of recreation uses. Proposed parking structures are identified in Figure 2-8. These include locations adjacent to the joint city/campus recreation complex on Blaine Street, within the existing and planned student housing precinct at Canyon Crest Drive and Blaine Street (on the east side of Canyon Crest Drive between University Avenue and Linden Street) and on the south side of Big Springs Road at Valencia Hill Drive. On this basis, the elimination of the *Athletics and Recreation* land use designation from the Glen Mor 2 site would not compromise the ability to establish athletics and recreational facilities to

serve the 2005 LRDP buildout population. This impact would be less than significant. No mitigation is required.

3.9.5 Cumulative Impacts

Land use impacts for the Glen Mor 2 project relate to the project location at the campus edge and the potential for incompatibility with nearby off-campus uses (Impact 3.9-3). The proposed EH&S project is also at the campus edge along Watkins Drive, west of Valencia Hill Drive. This project involves relocation and expansion of an existing campus function that involves management of campus hazardous materials and wastes. Potential compatibility issues relate to traffic patterns and on-site storage activities. As addressed relative to cumulative impacts for Hazards and Hazardous Materials (Section 3.7.5), traffic patterns will involve routes to and from the west that would not pass through the residential neighborhoods east of the campus. A preliminary evaluation of on-site storage suggests that residential uses at least 275 feet from the proposed facility would be at an acceptable separation. The nearest home in the off-campus neighborhood is more than 500 feet from the nearest edge of proposed EH&S facility. For these reasons, the proposed EH&S facility is not expected to combine with impacts of the Glen Mor 2 project to create a cumulatively significant land use impact with respect to compatibility with off-campus neighborhoods.

The remaining cumulative projects involve campus core and West Campus locations that do not present the potential for cumulative contributions to land use compatibility impacts at this campus edge.

Section 3.10
Noise

3.10.1 Introduction

This section describes the affected environment and regulatory setting for noise and vibration and describes the noise- and vibration-related impacts that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce those impacts. The information and conclusions presented in this section are derived from the Noise Technical Report for the project (Noise Report), prepared by ICF in January 2011 and provided as Appendix Q of this EIR.

UCR received comments during the project scoping meeting regarding the project's noise generation. Residents of the neighborhood east of the project site expressed concern for noise levels they would experience as generated by the proposed parking structure, on-site student activity, and increased traffic on area roads.

This section discusses the project's noise-related impacts using terms that are defined in the LRDP EIR and in the Noise Report. For a discussion of the fundamentals of noise and definitions of decibels (dB), A-weighted decibels (dBA), Equivalent Sound Level (L_{eq}), Minimum Sound Level (L_{min}), Maximum Sound Level (L_{max}), Community Noise Equivalent Level (CNEL), and vibration decibels (VdB), please see section 4.10.2 of the LRDP EIR (beginning on page 4.10-1) or Appendix Q.

3.10.2 Environmental Setting

Noise

The noise environment in the project area is characterized by vehicle noise from traffic on surrounding roadways and the on-site parking lot, human activity on the athletic fields north of the site, and other ambient noise typical of residential neighborhoods, such as people talking, birds chirping, and aircraft periodically flying overhead. The area east of the site also receives noise from train pass-bys on the BNSF railroad tracks, which occur up to approximately eight times during a typical 24-hour period. Noise measurements published in the Perris Valley Line Draft EIR disclosed the daily train activity and included several measurements taken at 396 East Big Springs Road, approximately 0.5 mile east of the project site, and at 277 Nisbet Way, approximately 500 feet northeast of the site. Measurements at the Big Springs Road location ranged from 54 dBA at 125 feet from the tracks to 62 dBA at 90 feet from the tracks. Measurements at the Nisbet Way location ranged from 62 dBA at 180 feet from the tracks to 70 dBA at 50 feet from the tracks (RCTC 2010, see Tables 4.10-3, 4.10-4, and 4.10-5 of the referenced EIR).

Noise-sensitive land uses are generally defined as locations where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, and certain types of passive recreational uses. Sensitive land uses in the project area include the single- and multi-family residences across Valencia Hill

Drive from the project site, on-campus student residences in the existing student housing precinct, and a private school and day care center¹ on the northeast corner of Big Springs Road and Watkins Drive.

Ambient Noise

ICF determined existing noise conditions by taking noise 15-minute-duration measurements at seven representative locations near the project site, including at residential sensitive receptors. Measurements at ST-1 and -2 were recorded in the evening; ST-3, -4, and -5 were recorded in the late morning, and ST-6 and -7 were recorded in the early afternoon. Table 3.10-1 summarizes the results of this noise monitoring; the measurement locations are identified by Site ID number in Figure 3.10-1.

Table 3.10-1. Noise Monitoring Results

Site ID	Measurement Location	Start Time	Noise Sources	Sound Level (dBA)		
				L _{eq}	L _{max}	L _{min}
ST-1	Athletic fields	7:09 p.m.	Intramural football game; distant music; birds; distant aircraft; distant traffic	57.3	74.5	46.1
ST-2	3624 Valencia Hill Drive	7:28 p.m.	Intramural football game; distant music; birds; distant aircraft; distant traffic	52.6	66.7	45.6
ST-3	University Village Apartment Pool	10:45 a.m.	Traffic along West Big Springs road; birds	52.0	68.4	44.0
ST-4	University Village Apartment	11:08 a.m.	Traffic along West Big Springs road; birds	49.6	60.4	43.6
ST-5	3706 Valencia Hill Drive	11:39 a.m.	Traffic along Watkins Drive; birds	48.0	60.7	44.3
ST-6	3592 Valencia Hill Drive	12:02 p.m.	Traffic along Watkins Drive; birds; distant aircraft	49.0	57.4	45.0
ST-7	Common area of Glen Mor 1 student apartments north of project site	12:32 p.m.	Birds; distant aircraft	48.0	58.9	43.6

As shown in Table 3.10-1, the highest noise readings were recorded at ST-1, an on-campus location adjacent to the athletic fields north of the site, which averaged a reading of 57.3 dBA L_{eq}. This reading was recorded during an intramural football game. Noise levels at off-campus residential receptors, including single-family residences on Valencia Hill Drive and a multi-family complex on Big Springs Road, were lower, ranging from 48.0 dBA L_{eq} at ST-5 to 52.6 dBA L_{eq} at ST5.

¹ The Apple Tree Learning Center is included because of potential noise impacts resulting from project-related traffic at the Watkins Drive/Big Springs Road intersection. The UCR Child Development Center is approximately 0.5 mile from the Glen Mor 2 site, with intervening campus development contributing to further attenuation of noise. The project does not contribute substantial volumes of traffic to the segment of Watkins Drive adjacent to the UCR Child Development Center.



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Figure 3.10-1
Noise Measurement and Modeling Locations
Glen Mor 2 Student Apartments

Traffic Noise

In addition to the ambient measurements presented above, ICF modeled existing traffic noise along the roadways most affected by project trips to provide a baseline for estimates of the noise generated by project trips. This noise was modeled using the Federal Highway Administration (FHWA) lookup tables and based on average daily trip (ADT) data inferred from the project traffic study (Appendix S). Noise was modeled for the existing year (2010), project opening year (2013), and LRDP buildout year (2015) at the roadway segments featuring sensitive receptors that would be most affected by project traffic. The segments modeled in this noise analysis were Big Springs Road between Watkins Drive and Valencia Hill Drive, and Watkins Road between Big Springs Road and Valencia Hill Drive.² Modeled receivers included the off-campus noise measurement locations ST-3 and ST-4 and the on-campus receptor ST-7. In addition to the monitoring locations, modeling was performed for two receivers not included in the noise measurement locations—MR-1, located off-campus at 3653 Watkins Drive, north of Big Springs Road; and MR-2, located on campus at the edge of Lothian Residence Hall, directly west of the project site. Results of the traffic-noise modeling are shown in Table 3.10-2.

Table 3.10-2. Modeled Traffic Noise Levels: Existing Conditions

Receptor	Receptor Location	Existing Noise Level	Opening Year (2013) without Project	LRDP Build out Year (2015) without Project
ST-3	277 W Big Springs Drive (Pool)	55	55	57
ST-4	277 W Big Springs Drive (apt)	55	55	57
ST-7	Glen Mor 1 Student Apartments	36	36	38
MR-1	3653 Watkins Drive	52	52	54
MR-2	Lothian Residence Hall	41	41	43

Note: All noise levels in dBA CNEL.

As shown in Table 3.10-2, the increase in vehicle trips anticipated to occur in the project area between 2010 and 2013 would not result in any increase in the decibel levels received from traffic noise at these receptors, but the addition of trips by 2015 is anticipated to result in a slight increase in noise (2 dBA) at ST-3, ST-4, and MR-1.

Noise generated by the on-site Parking Lot 14 is also received by nearby on- and off-campus receptors, including ST-3, -4, -5, and -6. This noise is caused by cars entering/exiting the lot and driving within the lot, and by parking-related noise occurrences such as car doors slamming, engines starting up, and people operating audible remote keyless entry systems. Loud car stereos and car alarms also produce occasional noise from the parking lot. ICF modeled this vehicle-related noise generated under existing conditions from Parking Lot 14. This noise was modeled based on distances from the acoustical center of the parking noise source.³ The estimates assume a conservative scenario in which 50 percent of the parking spaces would be vacated within 1 hour,

² ST-1, ST-2, and ST-6 were not considered because the project design does not include access to Valencia Hill Drive, and the existing barricade prevents through traffic between Big Springs Road and Watkins Drive.

³ The acoustical center is the idealized point from which the energy sum of all noise would be centered, as received by individual receptors. This is further described in the methodology discussion.

and that 50 percent of those vacating vehicles have audible remote keyless entry systems. The results of the noise modeling are shown in Table 3.10-3, which shows the estimated L_{max} noise level generated by these individual events at a reference distance of 50 feet from the edge of the existing parking lot. The table also shows the estimated L_{eq} for the parking lot as a whole, as measured at the 50-foot distance, at the nearest off-campus receiver (ST-4), and at two representative on-campus receivers (ST-7 and MR-2).⁴

Table 3.10-3. Existing Operational Noise from Parking Lot

Noise Source	L_{max} at 50 Feet	Estimated Hourly Noise Level	Estimated Existing Average Noise Level (dBA L_{eq})		
			50 feet from edge	ST-4 ¹	ST-7/MR-2 ²
Door slam	57	35			
Car start-up	61	49			
Car backing out	55	50			
Remote keyless entry	64	49			
Car driving away	62	57			
TOTAL			59	41	39/41

Notes:
¹ the closest off-campus sensitive receiver
² on-campus receivers

Vibration

There are no regular sources of vibration on the project site, and ICF perceived no detectable vibration during the site visits for noise measurements. Low levels of vibration may be experienced in the area surrounding the project site from occasional passing of large trucks traveling on Big Springs Road and Watkins Drive. Train pass-bys on the BNSF railroad tracks east and north of the site are also a potential source of vibration; vibration measurements taken at 396 East Big Springs Road, approximately 0.5 mile east of the project site, in conjunction with the Perris Valley Line Draft EIR, reported an average vibration level of 58 VdB at a distance of 50 feet from the tracks (RCTC 2010, Table 4.10-7).

3.10.3 Regulatory Framework

Information on the federal and state regulations governing noise at UCR is provided in Section 4.10.3 of the LRDP EIR, beginning on page 4.10-11. There have been no changes to the applicable regulations pertaining to noise on the project site since certification of the LRDP EIR. See Section 4.10.3 of the LRDP EIR for a discussion of CCR Title 24 requirements for interior noise insulation standards.

⁴ All noise levels represent noise from the acoustical center, as received by the respective receivers. The distances used to calculate the acoustical center for the parking lot are shown below in Table 3.10-4.

3.10.4 Impact Analysis

This section presents a discussion of the potential noise impacts associated with construction and operation of the proposed Glen Mor 2 Student Apartment project.

Methodology

The noise and vibration impact analysis presented in this section was conducted by predicting noise and vibration levels generated by construction and operation of the proposed project and comparing predicted levels to existing conditions. Project noise and vibration conditions resulting from vehicle traffic were estimated using modeling software that predicts the levels generated by this source. For a more detailed description of the noise and vibration modeling methodology, see Appendix Q.

Noise and groundborne vibration from construction were evaluated based on the FHWA Roadway Construction Noise Model and the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*.⁵ The construction noise analysis used the model to analyze different phases of construction based on the list of construction equipment provided by the project team's construction manager, and considers vehicle mix, duty cycles, distance to sensitive receivers, and intervening shielding to estimate resultant noise levels.

Construction noise levels were predicted from the edge of construction and from the "acoustical center" of the construction activity, which is the idealized point from which the energy sum of all construction activity noise would be centered, as received by individual receptors. Acoustical center analysis is a common method of estimating noise levels generated from within larger areas that acknowledges that noise is not stationary within that area. For this project's construction analysis, the acoustical center represents the typical distance from the sum of audible activity within the applicable construction area. To calculate the distance from each representative receiver location to the acoustical center of both facilities, the farthest distance from which activity could occur is multiplied by the closest distance, and the square root of the resultant product is taken. Table 3.10-4 shows the closest and farthest distances between project construction activities during the noisiest phase (grading) and the relevant receivers, as well as their distance from the acoustical center of that activity.

⁵ This model is often used for various types of construction projects, not just roadway projects, because it incorporates levels for a variety of representative equipment common to many types of construction and thereby allows an accurate representation of potential construction-related noise levels for a wide range of projects.

Table 3.10-4. Acoustical Center Calculations for On- and Off-Campus Sensitive Receivers

Receiver	Closest Distance to Receiver (Feet)	Farthest Distance to Receiver (Feet) ¹	Distance from Acoustical Center of Construction ²
Off Campus Receivers			
ST-2	164	1,100	425
ST-3	240	1,015	494
ST-4	140	958	366
ST-5	149	963	379
ST-6	288	1,100	563
On Campus Receivers			
ST-7	195	679	364
MR-2 Lothian	16	947	123

¹ see Figure 3.10-2 for depiction of distance requirements
² distance from acoustical center is derived from the square root of the closest distance multiplied by the farthest distance

Vibration modeling used reference levels for typical construction equipment contained in the above-referenced FTA manual, with an adjustment for the actual distance to project-related receptors.

Impacts from traffic noise were analyzed using FHWA's Traffic Noise Model lookup tables, which are based on computer program algorithms that predict on-road traffic noise. The parameters used to estimate vehicular traffic noise were receiver locations; average daily traffic volumes and posted speed limits; percentages of automobiles, medium trucks, buses, motorcycles, and heavy trucks; and site conditions (terrain or structural shielding and ground propagation characteristics). Project impacts were analyzed by comparing traffic noise conditions with the project to traffic noise conditions without the project, including the opening year (2013) and the LRDP buildout year (2015).

Noise generated by the parking structure was modeled based on measurements of parking-related noise "events" (e.g., car door slamming, engine start ups, operation of keyless entry systems), with estimated dBA levels for the various events based on the results of a noise study prepared for another project that modeled noise from a parking structure. Noise was modeled at several distances from the acoustical center of the noise generated by the parking structure.

Significance Criteria

The criteria for analyzing the project's noise impacts are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, programmatic impact analysis provided in the 2005 LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments project does not present the potential for significant impacts for the following significance criteria.

- For a project located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

As stated on page 4.10-13 of the 2005 LRDP EIR, the UCR campus is not located within an airport land use plan study area or within 2 miles of a public airport or public use airport, and no impacts would occur. This aspect of the project setting has not changed. This impact is addressed adequately in the LRDP EIR, and no further analysis is required.

- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

As stated on page 4.10-13 of the 2005 LRDP EIR, the UCR campus is not located in the vicinity of a private airstrip, and no impacts would occur. This aspect of the project setting has not changed. This impact is addressed adequately in the LRDP EIR, and no further analysis is required.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments project would result in a significant impact if it would:

1. Result in the exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies.
2. Result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction).

This analysis uses quantified thresholds consistent with those uses for the program analysis in the certified LRDP EIR.

For Criterion 1, this analysis uses the Title 24 threshold of 45 dBA for interior noise at the proposed on-site residences.

For Criterion 2, a significant vibration impact would occur if the project resulted in vibration levels of 80 VdB at residences and student housing buildings.⁶

For Criterion 3, a significant impact would occur if the project would cause a permanent increase of 5 dBA CNEL over ambient noise levels at any on-campus or off-campus noise-sensitive land use, or a permanent increase of 3 dBA CNEL at a noise-sensitive land use location where the future resulting noise level would exceed 70 dBA CNEL.

For Criterion 4, a significant impact would occur if construction activities increase the ambient noise levels by 10 dBA L_{eq} or more over a 1-hour period at any on-campus or off-campus noise-sensitive location.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to noise. The applicable measures are identified in Appendix F of this EIR. These

⁶ The LRDP EIR also uses a 65 VdB threshold for vibration received by on-campus research buildings. Because there are no such facilities in the vicinity of the site or proposed as part of the project, this threshold was not used to analyze the Glen Mor 2 project's impacts.

applicable measures are considered part of the project for purposes of this analysis. In general, when the project has a potential to exceed a significance threshold the LRDP Programs and Practices and Mitigation Measures are identified as applicable to reduce noise levels received on and off campus to a less than significant level. Where necessary, project-specific mitigation measures may also be presented in this EIR to further reduce a potentially significant project impact.

In conjunction with ongoing coordination efforts with neighboring residents, the campus has committed to adhere to the City of Riverside Noise Ordinance for construction hour limits for the Glen Mor 2 project. These standards, in contrast to the provisions of LRDP PPs 4.10-2 and 4.10-7(a) are reflected in the impact analysis below.

Impacts and Mitigation Measures

Criteria 1: Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?

As discussed above under Significance Criteria, this impact discussion focuses on Title 24's 45-dBA interior noise standard for the proposed apartments.

Impact 3.10-1: The project would not result in interior noise levels at the proposed student apartments in excess of the State's 45 dBA CNEL interior noise standard. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measures*

The project entails constructing new buildings for student housing on the project site. All of the new apartment buildings would be subject to Title 24 interior noise standards requiring that interior noise not exceed 45 dBA. As stated on page 4.10-15 of the LRDP EIR, the exterior-to-interior noise reduction for new residential units constructed in California is generally 30 dBA or more, and the LRDP EIR indicated that a Title 24-related impact could occur if exterior noise levels at a new residence exceeded 75 dBA. Furthermore, LRDP Program and Practice 4.10-1(b)(iv) states UCR's commitment to complying with Title 24 requirements related to noise.

In accordance with LRDP Program and Practice 4.10-1(b)(i), the project has been designed such that noise from the parking structure and air conditioning/refrigeration units would be minimized. However, by nature of the space available on the site, it is inevitable that some residential structures be located near the parking structure. As shown in Figure 2-2, Building G would be located approximately 50 feet north of the parking structure, and Building B and Building E would be located approximately 180 feet west of the parking structure. The other apartment buildings would be farther away or would be obstructed from receiving parking-structure noise by intervening structures.

The proposed parking structure would generate types of noise similar to those generated by the existing Parking Lot 14. Noise would be generated by cars driving inside the structure and from parking-related noise such as car doors slamming, engines starting up, and remote keyless entry systems. These noise events would be periodic and brief in nature, but occasionally would be audible from outside the structure. Loud car stereos and car alarms would also produce noise from within the structure that would be periodic and brief in nature. A complete discussion of the noise levels generated by the parking structure is provided under Impact 3.10-5. The analysis presented

below concludes that the parking structure would result in an average noise level of 60 dBA L_{eq} at a distance of 50 feet (which is the distance to proposed Building G). Considering the 30 dBA exterior-to-interior noise reduction that would be provided by the proposed buildings, the interior noise level at Building G would be 30 dBA or lower, which is lower than the Title 24 standard of 45 dBA. Other project-related housing buildings would be located farther away from the parking garage and would receive lower levels of noise and also would meet Title 24 interior standards.

Another noise source that could affect these residences is the mechanical heating, ventilation, and air conditioning (HVAC) equipment that would be installed on the roofs of the residential buildings. The type of equipment currently installed on new buildings within the campus generates noise levels that average around 66 dBA L_{eq} on the air inlet side and 62 dBA L_{eq} on the other sides (without consideration of standard shielding features) when measured at 50 feet from the source. The 24-hour CNEL noise levels are about 6.7 dBA greater than 24-hour L_{eq} measurements. This means that this equipment could generate noise levels that average 69 to 73 dBA CNEL at 50 feet when the equipment is operating constantly for 24 hours. Shielding installed around all new equipment at the campus reduces these noise levels by at least 15 dBA, which would reduce the 24-hour noise levels of the equipment to 54 to 58 dBA CNEL. Insulation at the residences would further reduce these noise levels, and the HVAC systems would not cause interior noise at the proposed residences to exceed the Title 24 45 dBA interior noise standard.

One final noise source that would affect project residences is the delivery area for the Food Emporium (Building A), which is proposed to be located on the northern side of the building. The delivery adjoins residences in Building C, which is located approximately 50 feet away from the delivery area. Noise generated by trucks and other activity in the delivery area throughout the day would be minimal because of the limited amount of delivery activity associated with the small facility. Average noise levels would not be expected to reach 75 dBA, and standard insulation of the new buildings would ensure that interior noise levels within the new student apartments would not exceed the Title 24 45 dBA standard.

In summary, noise attenuation is provided by shielding stationary sources and by designing and constructing new residential buildings in accordance with standard building code requirements. This impact is less than significant, and no project-level mitigation is required.

Criteria 2: Would the project result in the exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?

The project does not propose any permanent features that would generate considerable vibration or groundborne noise. The impact analysis below focuses on the temporary vibration that may be generated by project construction, as received by on- and off-campus areas.

Impact 3.10-2: Project construction would exceed LRDP standards for groundborne vibration as received by on-campus residences. *Impact Determination: Significant and Unavoidable*

The LRDP EIR identified a significant and unavoidable impact from construction-period vibration levels affecting on-campus uses (Impact 4.10-2, discussed starting on page 4.10-16 of the LRDP EIR). Excessive vibration for LRDP implementation was attributed to construction occurring as close as 25 feet from existing on-campus sensitive receptors, including residences and research buildings. The document identified one program and practice and one mitigation measure to limit the receipt and the effects of the construction-related vibration. Program and Practice 4.10-2 limits the hours of exterior construction activities from 7:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to

6:00 p.m. on Saturday, when necessary. Mitigation Measure 4-10-2(a) requires the campus to notify all academic and residential facilities within 300 feet of approved construction sites of the planned schedule of vibration-causing activities so that the occupants and/or researchers can take necessary precautionary measures to avoid negative effects on their activities and/or research. It should be noted that neither of these measures would serve to reduce actual vibration levels generated by construction.

The Glen Mor 2 project would entail construction that was anticipated in the LRDP EIR and analyzed in Impact 4.10-2, as referenced above. Construction would occur as close as 16 feet to Lothian residence hall west of the project site (MR-2), including paving activities that may entail use of equipment typically associated with vibration impacts. Table 3.10-5 shows the velocity in decibels (Vdb) of typical pieces of construction equipment that likely would be used for the proposed project, as measured at a reference distance of 25 feet. These levels are similar to those shown in Table 3.10-8 of the LRDP EIR.

Table 3.10-5. Typical Vibration from Construction Equipment

Equipment	Approximate Lv ¹ at 25 Feet
Large bulldozer	87
Loaded trucks	86
Vibratory roller	94

Source: Federal Transit Administration 2006.

¹ Lv stands for Velocity Level, as measured in micro-inches per second

The noise report concluded that, when measured from the acoustical center of construction, vibration levels from the largest piece of vibration equipment (vibratory roller) at the closest receptor (MR-2) would be approximately 73 VdB, which is below the significance threshold of 80 VdB. If a vibratory roller were used at the western edge of construction, the vibration level received by parts of Lothian residence hall would be approximately 100 VdB, which exceeds the 80 Vdb threshold and likely would be very perceptible to people and disruptive to activities in and near the structure. If large bulldozers or loaded trucks were used within this distance of Lothian Residence Hall, vibration levels would exceed the levels noted in Table 3.10-5, and also would exceed the 80 VdB threshold. As shown above in Table 3.10-4, all other receivers would be more than 50 feet from the edge of construction. This distance would greatly reduce the vibration levels caused by project construction, and a significant impact would not occur at any other on- or off-campus receivers. However, the impact at Lothian would be significant. This impact was addressed in the LRDP EIR, but project-specific mitigation is warranted.

The project will implement LRDP EIR Program and Practice 4.10-2 (limiting hours of exterior construction activities, as modified by Mitigation Measure NOI 2) and LRDP EIR MM 4-10-2(a) (notifying residential facilities within 300 feet of approved construction), but neither of these measures would serve to reduce actual vibration levels generated by construction, and Lothian residents still would receive significant vibration levels. In addition to the LRDP measures identified above, the following project-specific mitigation measure would reduce potential vibration impacts to the extent feasible, but this measure would not reduce potential construction-related vibration to less than-significant-levels. Therefore, this impact would be significant and unavoidable. A similar conclusion was reached in the LRDP EIR. This project would not present new impacts in this respect,

but the projected vibration levels received at Lothian Hall would be more severe than the levels anticipated in the LRDP EIR.

NOI 1: Use of high-vibration construction equipment near Lothian Residence Hall.

To the extent feasible, schedule construction activity entailing use of high-vibration generating equipment within 75 feet of Lothian Residence Hall during periods when students are not in residence.

Level of Significance after Mitigation

Significant and unavoidable.

Impact 3.10-3: Project construction would not exceed LRDP EIR standards for groundborne vibration as received by off-campus residences. *Impact Determination: Less than Significant*

The LRDP EIR concluded that off-campus sensitive receptors would not be exposed to significant vibration levels because they would be located more than 100 feet from campus construction (Impact 4.10-3 of the LRDP EIR). As shown in Table 3.10-4, the nearest sensitive receptor is located approximately 140 feet from project construction. Based on the levels shown in Table 4.10-8 of the LRDP EIR and Table 3.10-5 above, off-campus receptors would not be exposed to levels above the 80 VdB threshold because of their adequate distance from project construction, and this impact would be less than significant.

Criteria 3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The project would permanently increase ambient noise levels in the project vicinity, as received by on- and off-campus receptors, from the following sources: increased vehicle traffic on local roads, replacing an existing surface parking lot with a parking structure that accommodates more cars, installing roof-mounted HVAC equipment, and increasing human activity on the site. Noise increases associated with increased vehicle traffic, HVAC equipment, and the parking structure are discussed below.

Impact 3.10-4: The project would generate increased local traffic volumes, but would not cause a substantial permanent increase in noise received at on- and off-campus locations. *Impact Determination: Less than Significant*

As discussed in detail in Section 3.13 of this EIR, the project would increase the number of vehicles traveling local roadways, which in turn would increase noise levels received adjacent to roads carrying the project traffic, including on- and off-campus receptors. This project impact was analyzed with noise modeling software, comparing modeled noise levels after the addition of project traffic to modeled noise levels without the project. This comparison is shown in Table 3.10-6, which provides modeled noise levels for existing conditions, opening year (2013) conditions without and with the project, and LRDP buildout year (2015) conditions without and with the project.⁷

⁷ Because the project would not be occupied until 2013, the existing conditions baseline is not relevant, and the opening year has been used as the baseline. Furthermore, it should be noted that noise levels are not anticipated to noticeably increase between the existing scenario and the 2013 without-project scenario, as shown in Table 3.10-6.

The noise levels that would be generated along these segments and received by nearby receptors were modeled at the noise measurement locations ST-3, ST-4, and ST-7, and at the two modeled-only receivers MR-1 and MR-2. These locations were modeled in order to assess changes in noise levels of the roadways in the project area.

The modeled traffic noise levels for the Existing Year scenario are presented in Table 3.10-2. The existing traffic noise levels at off-campus noise-sensitive land uses were found to range from approximately 45 dBA CNEL at ST-2, ST-5, and ST-6 (residences east of the project site along Valencia Hill Drive) to approximately 55 dBA CNEL at ST-3 and ST-4 (apartments along Big Springs Road).

Table 3.10-6. Modeled Traffic Noise Levels: Project Impacts

Receptor	Existing	Opening Year (2013)			LRDP Buildout Year (2015)			Threshold	Impact?
		Without Project	With Project	Δ^1	Without Project	With Project	Δ^1		
ST-3	55	55	55	0	57	58	1	5	No
ST-4	55	55	56	1	57	58	1	5	No
ST-7	36	36	37	1	38	39	1	5	No
MR-1	52	52	52	0	54	55	1	5	No
MR-2	41	41	42	1	43	43	0	5	No

¹: Δ = project-related change.

Note: all levels shown in dBA CNEL.

As shown in Table 3.10-6, all noise levels are anticipated to remain below 70 dBA CNEL; therefore, the 5-dBA increase applies as the threshold for identifying a significant impact.

Table 3.10-6 shows the dBA levels without the project in 2013 are anticipated to be the same as those under existing conditions. In the 2013 analysis year, the project-related change in noise levels is 1 dB at ST-4, ST-7, and MR-2. Project-related traffic is not anticipated to increase noise levels received by ST-3 and MR-1. The increase in ambient traffic by 2015 is anticipated to generate slightly higher ambient conditions at all of the modeled receptors. The project-related increase in noise under this scenario is estimated at 1 dBA at ST-3, ST-4, ST-7, and MR-1.

Because project-related traffic noise is not anticipated to increase ambient noise levels by 5 dB CNEL or greater, impacts associated with increased traffic from the proposed project would be less than significant, and no mitigation is warranted.

Impact 3.10-5: The project parking structure would increase noise levels on and near the site, but would not cause a substantial permanent increase in noise received at on- and off-campus locations. *Impact Determination: Less than Significant*

The project site currently features a surface parking lot that generates noise received by nearby on- and off-campus receivers attributable to the typical functions of a parking lot, such as cars entering/exiting the lot and driving within the lot, and parking-related noise occurrences such as car doors slamming, engines starting up, and audible remote keyless entry systems. The project proposes a multi-level parking structure to replace a portion of this surface lot, which would be placed in a similar location on the site but would have a smaller footprint. The parking structure would generate similar types of noise as those generated by the existing lot, but noise levels are

anticipated to be slightly higher because the proposed structure accommodates 159 more cars than the existing surface lot. The existing lot and the proposed structure have similar locations and access points; therefore, potentially affected receptors for noise from the proposed garage would be similar to the receptors that are currently exposed to noise from the parking lot.

The project's parking noise impact was estimated by modeling noise levels based on distances from the acoustical center of the parking noise source. This modeling was performed at the nearest off-campus receptor (ST-4) and two representative on-campus receptors (ST-7 and MR-2). Table 3.10-7 compares the distances between the existing/proposed parking uses and the respective receptors—including the distances from the nearest and farthest edges of the uses, as well as the respective acoustical centers.

Table 3.10-7. Parking Structure Acoustical Center Noise

Receptor	Existing Parking Lot			Proposed Parking Structure		
	Closest Distance to Receptor (Feet)	Farthest Distance to Receptor (Feet)	Acoustical Center ^a	Closest Distance to Receptor (Feet)	Farthest Distance from Receptor (Feet)	Acoustical Center ^a
ST-4	150	960	379	140	515	270
ST-7	450	575	509	395	550	466
MR-2	175	970	412	565	930	725

^a rounded to the nearest whole foot.

As shown in Table 3.10-7, the nearest edge of the parking structure would be 10 feet closer to ST-4 than is the existing surface lot because the footprint shifts slightly toward the east. Because the proposed structure takes up less square footage than the surface lot, the acoustical center is more than 100 feet closer. The acoustical center of the parking structure is slightly closer to ST-7 than the surface lot, but the structure would be much farther away from MR-2 than the existing lot.

The parking structure impact analysis considers a worst-case hour for operations, assuming a conservative scenario in which 50 percent of the parking spaces would be vacated within 1 hour, and in which 50 percent of those vacating vehicles have audible remote keyless entry systems. Because the existing surface lot and proposed parking structure accommodate on-campus residences and are not commuter-based facilities where many users would be accessing their cars at the same time, this is an unlikely scenario, but it informs useful conservative analysis.

As stated above, noise types generated by the parking structure would be similar to those of the existing surface lot. Table 3.10-3 above shows the typical noise levels generated by these types of noise at a distance of 50 feet from the source. Noise levels estimated for the parking structure are compared to those estimated for the surface lot in Table 3.10-8, showing the estimated composite L_{max} noise level for the features at a reference distance of 50 feet from their respective edges and from ST-4, ST-7, and MR-2.

Table 3.10-8: Parking Lot/Parking Structure Noise

	50 Feet from Edge	ST-4 ¹	ST-7 ²	MR-2 ²
Existing parking lot	59	41	39	41
Proposed parking structure	60	45	41	37
Project-related change	+1	+4	+2	-4

¹ the closest off-campus sensitive receiver
² on-campus receivers

As shown in Table 3.10-8, all noise levels are anticipated to remain below 70 dBA CNEL; therefore, the 5-dBA increase applies as the threshold for identifying a significant impact.

Table 3.10-8 shows that the proposed structure would be approximately 1 dB louder than the parking lot, when measured at a distance of 50 feet. This is because of the increased number of cars accommodated by the structure. The project is anticipated to increase the noise level received by ST-4 by 4 dB, which is attributable to a combination of the increased parking activity and the decrease in the distance between ST-4 and the respective parking area acoustical centers (i.e., more noise would be generated closer to the receptor). Parking noise is anticipated to increase slightly at ST-7 and is anticipated to decrease at MR-2.⁸

Because partial replacement of the on-site parking lot with a multi-level parking structure is not anticipated to increase ambient noise levels by 5 dB CNEL or more, this impact is less than significant, and no mitigation is warranted.

It should be noted that the existing noise levels measured during field measurement were higher than the modeled results for the parking lot and parking structure, as ambient conditions include noise sources beyond just the parking lot. At receiver ST-4, for instance, the existing measured noise level was approximately 50 dBA L_{eq} , which is higher than the modeled 44 dBA level. The Noise Report concludes that if the parking structure noise increase were added to the measured conditions, the resultant increase would be 1 dB, rather than 4 dB, resulting in 51 dBA L_{eq} at ST-4. This is because of noise energy's logarithmic (not arithmetic) properties.⁹ Accordingly, the project's noise increase would be lower under actual conditions than under the estimated modeled conditions stated above for purposes of conservative analysis.

Impact 3.10-6: The project would install new stationary equipment and other stationary noise sources that would not cause a substantial permanent increase in on- and off-campus ambient noise. *Impact Determination: Less than Significant*

The project would place HVAC equipment on the roofs of the proposed residential buildings. The type of equipment currently installed on new buildings within the campus generates noise levels that average around 66 dBA L_{eq} on the air inlet side and 62 dBA L_{eq} on the other sides (without

⁸ The parking structure would generate a lower noise level at MR-2 because the acoustical center would be farther away; however, it should be noted that this model does not account for the fact that the portion of the existing parking lot nearest MR-2 would remain with the project, and this would generate noise received at MR-2. This noise would not exceed the 41 dB modeled at this location under existing conditions.

⁹ Noise is not additive like normal arithmetic values. Noise is based on a logarithmic scale whereby two noise sources of equal value added together combine to create a 3 dBA increase, not a doubling of the noise level. Similarly, adding the same sound energy to two unequal noise levels produces a greater increase in the lesser of the two levels.

consideration of standard shielding features), when measured at 50 feet from the source. Shielding installed around all new equipment at the campus reduces these noise levels by at least 15 dBA, which would reduce the 24-hour noise levels of the equipment to 54 to 58 dBA CNEL.

The proposed structures that would have HVAC units and that are nearest to existing receptors are Building J, which is located more than 200 feet from off-campus residences east of the site; and Building G, which is located approximately 100 feet from on-campus residences west of the site. This distance would provide attenuation of noise generated by this shielded HVAC equipment and would not increase noise levels at the nearest sensitive receptors by 5 dBA or more.

The delivery area for the Food Emporium (Building A) would generate noise from infrequent truck deliveries and other activity in the delivery area throughout the day. The noise generated by this source would be minimal because of the small scale of the Food Emporium and the limited amount of delivery activity associated with the small facility, and noise levels at the nearest sensitive receptors would not increase by 5 dBA or more.

In summary, project-related stationary sources of noise would not result in a substantial permanent increase in ambient noise levels, and no mitigation is warranted.

Criteria 4: Will the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?

Impact 3.10-7: Project construction would result in a substantial temporary increase in on- and off-campus ambient noise. *Impact Determination: Significant and Unavoidable*

The LRDP EIR concluded that construction of campus projects would result in a significant and unavoidable impact of increasing ambient noise at on- and off-campus locations by more than 10 dBA over a 1-hour period for activities lasting more than 1 day. That EIR identified a number of Programs and Practices and Mitigation Measures to reduce the impact of this construction noise, which are discussed later in this section, but these measures were not enough to reduce the impact to a less-than-significant level.

The project entails an intensive construction process in an area surrounded by development. Construction is estimated to begin in July 2011 and be completed in June 2013. Project construction would increase noise levels at sensitive receptors on and off campus, including off-site residences east of the site and on-campus residences west and north of the site. The magnitude of the increases would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, site geometry (i.e., shielding by intervening terrain or other structures), and the distance between the noise and the receptor. Project construction entails multiple phases that would generate noise from different areas of the site at different times. The specific construction schedule has not yet been determined definitively. As such, the noise analysis provided herein reflects a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner.

The most intensive phase of project construction would be grading, as the project requires a large amount of over-excavation and recompaction of soil to create building foundations suitable for the proposed structures. Grading would occur over much of the site, including the western and eastern edges that are near sensitive receptors. Grading in these areas would entail the operation of large backhoes, front loaders, and haul trucks, all of which would generate noise received by nearby off-

site receptors. Grading would not occur up to the very limits of project construction, but would occur at distances shown in Figure 3.10-2.

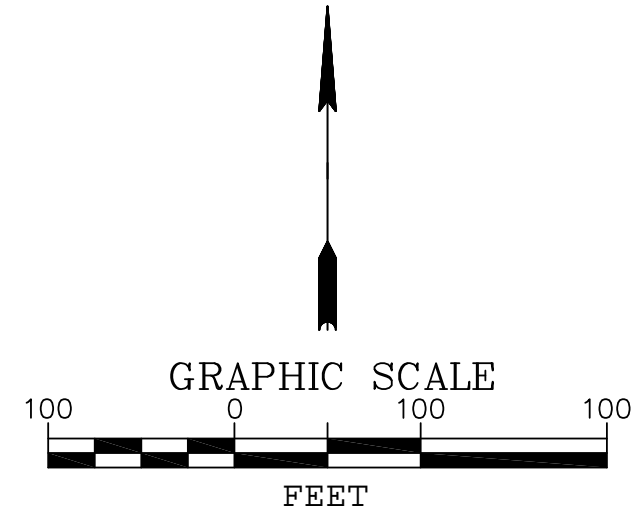
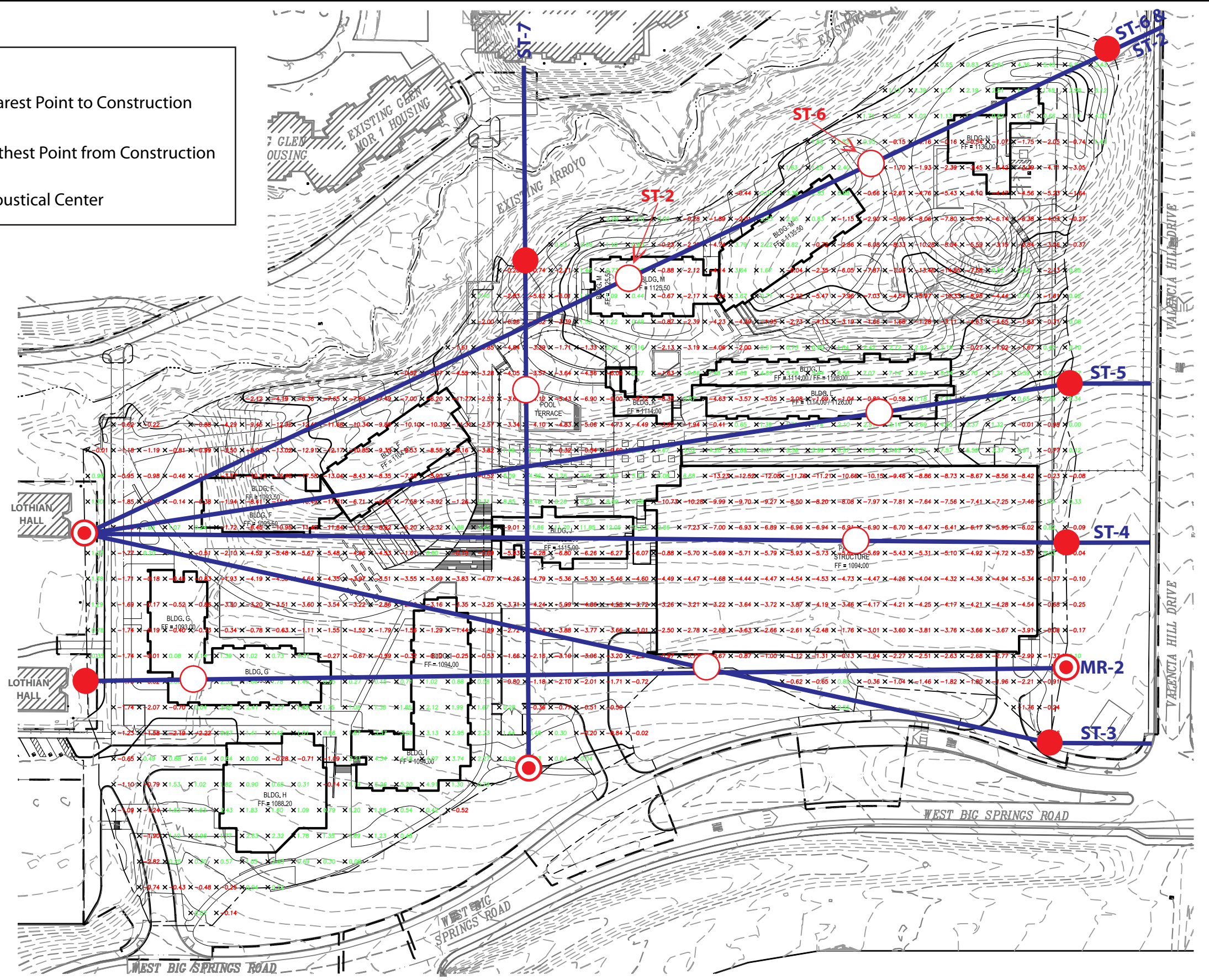
Because of the extent of grading required for project construction, it is likely grading would occur on certain parts of the site while other construction activity is taking place elsewhere. According to the project contractor, the period of project construction that would entail the largest amount of equipment is anticipated to occur in the second half of November 2011, when the following phases would overlap: clear/grub/demolition, parking structure construction, miscellaneous grading, utilities trenching, building construction, and concrete work. This would entail a large amount of work throughout the site and would generate the highest noise levels of any period of project construction. Later, building construction would also occur near the edges of the site, including parking structure construction on the eastern part of the site, near off-campus residential receptors, and residential construction on the western part of the site, near on-campus residential receptors.

The closest construction activity that would occur close to nearby receptors includes sidewalk paving, culvert modification, and landscaping on the edge of Valencia Hill Drive. This would entail some work within Valencia Hill Drive and the presence of and operation of construction vehicles in that area, noise from which would be received by off-campus residences. With respect to on-campus receptors at Lothian Residence Hall, the closest construction activity would be a minor amount of grading, as well as sidewalk paving and landscaping. Finally, for on-campus residences at Glen Mor 1, the closest activity would be arroyo enhancement work and construction of the proposed bridges.¹⁰

Construction noise analysis was conducted by running models of noise levels generated at the edge of construction as well as at the acoustical center of construction, as explained above in the methodology section (see Table 3.10-4). An equipment list for the estimated worst-case construction period, which was used to estimate construction noise levels, is shown in Table 5 of the Noise Report (Appendix Q). Noise levels generated by project construction as received by the various on- and off-campus receptors are shown below in Table 3.10-9. The table includes the measured ambient noise level at the receptor, along with modeled noise levels that would be perceived by the receptor as a result of construction activity at the acoustical center and at the closest distance to the receiver. These measurements are conservative because they assume the worst-case construction period, as indicated by the project construction management specialist, but it should be noted that these noise levels would not persist throughout the 2-year term of project construction.

¹⁰ It should be noted that the bridge abutments would be supported on drilled, cast-in-place caissons and would not require pile driving.

- Legend**
- Nearest Point to Construction
 - ⊙ Farthest Point from Construction
 - Acoustical Center



Note:
The modeling location for ST-7 is located beyond the boundaries of this map. Please see Figure 3.10-1 for a representation of this modeling location

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Source: Flores Lund Consultants, 2010



Figure 3.10-2
Modeled Acoustical Center Distance
Glen Mor 2 Student Apartments

Table 3.10-9. Total Modeled Noise Levels during Construction

Receptor	Measured Ambient Noise Level	Modeled Noise Level Calculated from the Acoustical Center (hourly dBA L_{eq})	Modeled Noise Level Calculated from the Closest Distance to Receptor (hourly dBA L_{eq})
ST-2 ¹	49	76	84
ST-3	52	69	76
ST-4	50	77	84
ST-5	48	77	85
ST-6	49	73	79
ST-7	48	77	82
MR-2 ²	48	86	104

¹The measurement at ST-2 was taken to quantify noise levels associated with an athletic event at the existing sports fields located on campus, and is not representative of normal ambient noise. Therefore, the noise level for ST-6 was used as a representative noise level for ST-2, as this receiver is located across the street.

²No measurement taken at MR-2 during field measurements. The noise level for ST-7 was used as a representative noise level for MR-2, as this receiver has a similar setting.

Modeled noise levels from the acoustical center of construction range from 69 dBA L_{eq} at modeled off-campus receiver ST-3 up to 86 dBA L_{eq} modeled at on-campus receiver MR-2 at Lothian Residence Hall. Maximum noise levels modeled from the closest distance at which construction equipment could be located would range from 76 dBA L_{eq} at ST-3 up to 104 dBA L_{eq} at MR-2. Noise levels of this nature are considerably higher than the existing noise level at any of these receivers and would completely dominate the existing noise environment during periods of heavy construction.

As indicated in the table, construction would increase noise levels by more than 10 dBA at each of the studied receptors. Noise levels would vary over time depending on the construction phase, and this analysis has provided a conservative estimate of noise levels received during the most intensive periods of project construction when several phases would overlap. While the noise would cease once project construction is complete, these noise increases exceed the 10 dBA significance threshold, and this is a significant impact warranting mitigation.

The LRDP EIR identifies several Programs and Practices and Mitigation Measures that the campus is committed to implementing during on-campus construction. LRDP EIR measures pertaining to construction include Program and Practice 4.10-7(a) and Program and Practice 4.10-2 (limiting construction hours), Program and Practice 4.10-7(b) (requiring use of noise mufflers or shielding on construction equipment), Program and Practice 4.10-7(c) (placing stationary equipment and vehicle staging away from sensitive receptors), Program and Practice 4.10-7(d) (conducting meetings with on-campus constituents to provide advance notice of construction activities), and Program and Practice 4.10-8 (conducting meetings with off-campus constituents to provide advance notice of construction activities). All of these measures will be incorporated into the project. Only two of these measures, Program and Practice 4.10-7(b) and Program and Practice 4.10-7(c), actually would reduce construction noise levels received by on- and off-campus receivers. The noise reduction achieved by these measures would be limited and would not reduce levels to below the applicable threshold, therefore, the project would still result in a significant impact. Project contractors would abide by more restrictive time constraints than indicated in Program and Practice 4.10-7(a) and

Program and Practice 4.10-2 (see project-specific mitigation measure NOI 2, below). While this would not actually reduce noise levels, it would limit noise-generating activity to periods when they are generally less obtrusive to sensitive receivers. Finally, the two coordination measures (Program and Practice 4.10-7(d) and Program and Practice 4.10-8) would not actually reduce noise levels generated by project construction, but would provide information to on- and off-campus community members so as to limit the annoyance of project construction. The combined effect of these measures would not reduce project construction noise to less-than-significant levels.

In addition to the LRDP measures identified above, the following project-specific mitigation measures would reduce construction noise impacts received on and off campus, but these measures would not reduce construction-related noise to less-than-significant levels; therefore, this impact would be significant and unavoidable. A similar conclusion was reached in the LRDP EIR. This project would not present new impacts in this respect, but the projected noise levels received by on- and off-campus receptors would be more severe than the levels anticipated in the LRDP EIR.

NOI 2: Restrict construction hours.

The Office of Design and Construction will ensure that all construction contracts will limit exterior construction activities to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on Saturday. Construction will not be allowed on Sunday or federal holidays.

NOI 3: Appoint construction noise liaison.

The Office of Design and Construction will appoint a campus liaison for the project who will be available to respond to community concerns regarding construction noise, and will establish a clear appeal process to another designated campus representative that will allow resolution of noise problems that cannot be solved immediately by the appointed liaison.

NOI 4: Require mufflers and other noise attenuators on project construction equipment.

The Office of Design and Construction will ensure all construction contracts specify that noise-producing construction equipment and vehicles using internal combustion engines will be equipped with mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) will be equipped with shrouds and noise-control features that are readily available for that type of equipment.

NOI 5: Require use of electrically powered equipment.

The Office of Design and Construction will ensure all construction contracts specify that work use electrically powered equipment instead of pneumatic or internal combustion-powered equipment, where feasible.

NOI 6: Specify construction site speed limit.

The Office of Design and Construction will ensure all construction contracts specify that construction site and access road speed limits will be established and enforced during the construction period.

NOI 7: Prohibit noise-producing signals.

The Office of Design and Construction will ensure all construction contracts prohibit the use of noise-producing signals, including horns, whistles, alarms, and bells, except for safety purposes only. Public address or music systems will also be prohibited.

Level of Significance after Mitigation

Although they would not reduce actual noise levels generated by project construction, Mitigation Measures NOI 2 and NOI 3 would reduce the effects of this construction noise on the on- and off-campus receptors by providing further limitation on the typical campus construction timeframes and by ensuring community awareness and coordination regarding noise issues. Mitigation Measures NOI 4 through NOI 7 would reduce noise levels generated on the site and received by nearby receptors to the greatest extent possible. However, the reduction in noise level would be limited and project construction noise still would be expected to increase by more than 10 dBA, as received at nearby on- and off-campus receptors. Therefore, this impact is significant and unavoidable.

Impact 3.10-8: Construction haul traffic would result in a temporary increase in on- and off-campus ambient noise. *Impact Determination: Less than Significant*

The project entails construction traffic that would use on- and off-campus roads on a temporary basis. The main construction haul route (shown in Figure 3.13-2) would traverse on- and off-campus areas, following Big Springs Road, Campus Drive, Aberdeen Drive, Linden Street, Iowa Avenue, Martin Luther King Boulevard, and Canyon Crest Drive. This route would be used for delivering equipment and materials to the project site and hauling excavated material to the temporary stockpile location. The heaviest construction traffic is anticipated during the excavation phase, with approximately 178 daily truck trips anticipated to remove excess soil during portions of the 3-month initial site preparation phase. These trips would be spaced throughout the 8-hour workday, averaging 22.25 trips per hour.

One limited stage of project construction, demolition of the on-site residence, would entail construction traffic that may use the existing on-site residence driveway to Valencia Hill Drive, Watkins Drive, and Blaine Street. This construction traffic, which would be limited to the demolition phase, would be minor in scale and duration (estimated at 4 to 5 vehicles per day over a 2-week period) and would not generate considerable noise.

Construction traffic along the main haul route would increase traffic noise levels along the proposed route, which would be received by sensitive receivers located adjacent to haul route roadways. Table 3.10-10 shows an estimate of modeled existing noise levels and modeled project-related noise levels along four representative segments of the haul route.

Table 3.10-10. Haul Route Traffic Noise

Road Segment	Existing Traffic Noise Level (peak-hour L_{eq} dBA) ^a	Existing Traffic plus Haul Route Traffic Noise Level (peak-hour L_{eq} dBA) ^a	Project-Related Increase (dB) ^a
Campus Drive between Big Springs Road and Aberdeen Drive	56	60	4
Aberdeen Drive between Campus Drive and Linden Street	57	60	3
Linden Street between Aberdeen Drive and Iowa Avenue	64	65	1
Iowa Avenue between Linden Street and Martin Luther King Boulevard	71	71	0

Sources: FHWA 2008; City of Riverside 2011; Kunzman Associates 2010.
^aNoise levels rounded to the nearest whole number.

As shown in the table, construction traffic would increase noise levels along the haul route. Traffic noise increases would range from 4 dB along Campus Drive to 1 dB along Linden Street. Iowa Avenue would increase marginally, but not more than 1 dB. The proposed haul route traffic would not increase noise levels along these roadways more than 10 dBA. Therefore, the impacts would be less than significant, and no mitigation is warranted.

3.10.5 Cumulative Impacts

Cumulative Permanent Noise Impacts

Cumulative increases in permanent noise sources in the surrounding area would result from additional vehicle trips on the local roadways from new development, and from increased operation along the BNSF tracks east and north of the site as a result of the Perris Valley Line project.

The noise analysis performed for the project incorporated an analysis of the project's contribution to cumulative traffic noise on the studied circulation system. The year 2015 was identified as the future cumulative analysis year because that is the horizon year of the LRDP. This was also deemed a reasonable future analysis year because the study area is largely built out, and major changes in non-project-related traffic conditions are not anticipated. The cumulative operational traffic analysis was conducted using the projections method of cumulative analysis, as described in Section 3.0.4 of this EIR. Future conditions at the studied roadway segments were estimated by adding traffic trips, assuming a 1.7 percent annual growth rate, which was the rate used in the LRDP EIR, based on SCAG modeling data for the area surrounding UCR. As shown in Table 3.10-6, noise along the studied roadway segments is anticipated to increase slightly as a result of ambient traffic growth by 2015. The project would contribute to this, as shown in the referenced table, but the project's contribution is less than significant. Noise originating from the Glen Mor 2 parking structure may be heard faintly at the apartment complex at Big Springs Road and Valencia Hill Drive (represented by ST-3), but the incremental levels over existing conditions would not represent a considerable contribution to cumulative increases in traffic-related noise received in this area.

Increased train noise attributable to the Perris Valley Line project was analyzed in the Draft EIR for that project. Section 4.10.4 of that EIR concludes that the rail project would result in a significant impact at several residential locations north and northeast of the Glen Mor 2 project site, mostly from train horns sounding at the Watkins Drive at-grade crossings. Sound barriers near the affected residential areas are proposed as mitigation for the Perris Valley Line project impacts. The impact at residences east of the Glen Mor 2 project site was identified as less than significant because of the ample distance between the tracks and residences and because, with no roadway/railway crossings in this area, train horns do not sound. The project would contribute a minor amount of noise to these cumulative conditions from operational vehicle traffic, but, as depicted in Table 3.10-6, project-related noise increases are very minor, and they would not represent a considerable contribution to these cumulative impacts. Noise generated by the Glen Mor 2 parking structure would not be heard at the same receptors as would be affected by the train noise, so this aspect of the project would not contribute to the cumulative impact.

Cumulative Temporary Noise Impacts

Given the preliminary construction schedules for the cumulative projects listed in Section 3.0.4, there is a chance that Glen Mor 2 construction may overlap construction of three on-campus projects (the EH&S expansion, the Student Recreation Center expansion, and the Health Sciences Teaching Center) and one off-campus project (portions of the Perris Valley Line Project located near the project site). The Student Recreation Center expansion project is located approximately 0.4 mile from the Glen Mor 2 project site; at that distance, construction noise would not affect the same receptors. Construction at the Health Sciences Teaching Center is mostly limited to interior construction, noise from which would not be perceived at areas affected by Glen Mor 2 construction noise. The scope of construction on the Perris Valley Line Project in the vicinity of the Glen Mor 2 project site is limited to minor improvements of existing track and the erection of sound walls. Construction noise from these activities on the Perris Valley Line Project could be received by residences east of the Glen Mor 2 project, though noise levels would be limited by their distance from the tracks and the limited nature of project construction. Nevertheless, the potential overlap of noise from the two projects would create a cumulative impact. On-campus residences at Glen Mor 1 may receive combined noise from Glen Mor 2 and the EH&S project. Based on the impact conclusion provided under Impact 3.10-7, the Glen Mor 2 project's contribution to this cumulative impact would be considerable, and there is no mitigation that would reduce this contribution. This issue is addressed adequately under Impact 3.10-7.

Based on the respective projects' locations, there is also potential for construction traffic associated with the EH&S expansion and the Student Recreation Center expansion to use the same route as proposed for the Glen Mor 2 haul route. This means noise from this activity could combine to affect receptors along the route, resulting in a cumulative impact. Implementation of LRDP EIR Programs and Practices 4.14-2 requires the campus to assess construction schedules of major projects to determine the potential for overlapping construction activities and adjust construction schedules, work hours, or access routes to the extent feasible, which would minimize overlapping noise and result in a less-than-significant cumulative impact.

The cumulative projects with potentially overlapping construction schedules all are located more than 500 feet from the Glen Mor 2 project site, with the closest being the EH&S expansion to the north. This considerable distance would prevent any construction-related vibration caused by the cumulative projects from combining with that of the Glen Mor 2 project to affect the same receptors. Therefore, there would be no cumulative vibration impact.

Section 3.11
Public Services

3.11.1 Introduction

This section describes the affected environment and regulatory setting for public services and describes the potential for implementation of the Glen Mor 2 Student Apartments Project to result in substantial adverse physical impacts associated with the provision of new or physically altered facilities to provide appropriate levels of service. This analysis focuses on fire protection, police protection, schools, and library services. Parks, while included in the Public Services section in Appendix G of the State CEQA Guidelines, are analyzed under Recreation (Section 3.12) of this EIR. Impacts related to emergency access, which involves fire and police services, are analyzed in Section 3.14 (Transportation/Traffic).

No comments related to public services were received in response to the NOP for this project. Comments provided during the public scoping meeting requested consideration of issues related to increased criminal activity in the event the proposed buildings become abandoned.

3.11.2 Environmental Setting

Section 4.12.2 of the LRDP EIR provides a detailed description of the environmental setting for public services (Section 4.12.2, beginning on page 4.12-1). While no substantial changes have occurred with respect to public services since certification of the LRDP EIR, updates related to fire and police services are noted below.

- Fire protection on the campus is provided jointly by the City and the campus, with RFD responsible for fire suppression and UCR EH&S responsible for fire protection engineering and prevention (includes design consultation, construction inspection, operational safety inspection, and safety training). Campus fire protection engineering and prevention services are conducted under a Memorandum of Understanding with the Office of the State Fire Marshal. First response for City fire protection is provided from Station No. 4 (3510 Cranford Street), approximately 0.5 mile from the campus. Since certification of the LRDP EIR, a new RFD fire station has been established near the intersection of Central Avenue and Canyon Crest Drive, approximately 1 mile from the campus. The County of Riverside also provides fire suppression on the campus on a back-up basis.
- Primary responsibility for police protection lies with UCPD. At the time of certification of the LRDP EIR, there were approximately 1.4 sworn officers per 1,000 persons in the campus population (students, faculty, and staff). The current campus staffing level is approximately 1.1 sworn officers per 1,000; two positions are unfilled (Smith pers. comm.). UCPD has a formal Memorandum of Understanding with the Riverside Police Department (RPD) for mutual aid. The two departments jointly operate the University Neighborhood Enhancement Team (UNET), which provides a team of eight patrol officers who are responsible for a 17.5-square-mile area, including the UCR campus and surrounding City areas. Station facilities are consistent with those identified at the time of the LRDP EIR, with UCPD operating from a station at the

intersection of Canyon Crest Drive and Linden Street and UNET operating from a storefront in the University Village center at University and Iowa avenues. Emergency response times are under 5 minutes; non-emergency response times are usually under 30 minutes (Freese pers. comm.).

3.11.3 Regulatory Framework

Information regarding the various federal, state, and local regulations governing public services at UCR is provided in Section 4.12.3 of the LRDP EIR (page 4.12-7).

LRDP EIR references to fire regulations note applicability of California Health and Safety Code Sections 13000 et seq., the California Building Code, and CCR Title 24, Part 9. These regulations have all been subject to updates since certification of the LRDP EIR, but none of these updates is explicitly related to public services impacts of the Glen Mor 2 project. Any necessary adjustments to campus programs for fire prevention services are addressed in the course of normal duties by the campus fire marshal.

3.11.4 Impact Analysis

This section presents a discussion of the potential public services impacts associated with construction and operation of the proposed project, including fire, police, school, and library impacts.

Methodology

This analysis considers demands on police and fire services given the potential increase in the on-campus resident student population and whether such increased demand would require new or physically altered government facilities.

This analysis also presents an evaluation of the proposed project design in comparison with campus design criteria for fire and accident prevention, in furtherance of LRDP Programs and Practices 4.12-1 (a) and (b).

Analysis of the water system's ability to meet required fire flow is based on a technical evaluation by Carl Sepponen, civil engineer (Appendix R).

Significance Criteria

The criteria for analyzing the project's impacts on public services are based on Appendix G of the State CEQA Guidelines.¹ Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criteria outlined below.

¹ The LRDP EIR addresses potential impacts on park facilities (Appendix G, subquestion d) under Recreation. Potential impacts in this regard for the proposed Glen Mor 2 Student Apartments Project are addressed in Section 3.12 of this EIR (see discussion of Impact 3.12-1, page 3.12-2).

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
 - Schools?

Implementing the LRDP would increase the number of school-aged children in local school districts but not beyond the districts' capacities. This impact would be less than significant. The proposed student housing project is consistent with the nature and intensity of development proposed in the adopted LRDP. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.
 - Other public facilities?

The LRDP EIR's consideration of potential impacts on other public facilities identified off-campus libraries as the focus of analysis. The impact of implementation of the LRDP on off-campus libraries would be less than significant because adequate library facilities would be provided on campus. The proposed student housing project is consistent with the nature and intensity of development proposed in the adopted LRDP. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.
- Create other public service impacts?
 - No other potential public services impacts specific to the project were identified based on conditions at the time of preparation of the certified LRDP EIR, and no potential impacts in this regard have been identified for the current environmental setting. No further analysis is required.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
 - a. Fire protection, and
 - b. Police protection.

LRDP MMRP Measures

The LRDP identifies a series of Programs and Practices that are relevant to public services. Applicable measures are identified in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the measures address project design to support fire protection and access, fire prevention staffing, project design for accident prevention, police staffing and facilities, and coordinated law enforcement with the City. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and

construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criterion 1: Will the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for fire protection?

Impact 3.11-1: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for fire protection services. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

The Glen Mor 2 Student Apartments Project would place several new buildings within an established residential precinct, thereby completing development of this sector of the campus and accommodating an additional 810 students in on-campus housing. The proposed development plan includes five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat, totaling approximately 370,000 square feet of habitable building space, with an approximately 192,000-square-foot parking structure. The residential buildings are up to five stories in height. While these buildings are taller than the existing residential buildings in the precinct, there are many academic buildings on campus that exceed this height.

The campus fire marshal has determined that the proposed infill development, with student housing and support services, would pose no additional fire hazard to the neighboring community or create additional demand on local fire and emergency medical service providers (Corrin pers. comm.). RFD Station No. 4 (350 Cranford Street) and Station No. 14 (725 Central Avenue) both provide fire and emergency medical services to the site with a 5-minute response time. Equipment housed in these stations can be used to fight fires in the existing high-rise buildings on the campus; the proposed five-story buildings would not require new firefighting equipment. Accordingly, the project would not require new or physically altered fire prevention facilities, the construction of which could cause significant environmental impacts. This aspect of potential impacts on fire protection and emergency services is less than significant.

The campus project design process to date has taken into consideration the requirements of LRDP Programs and Practices 4.12-1(a) relative to project design features for fire protection. Fire protection systems, including sprinklers, alarms, and emergency exits, are reflected in the preliminary design plans, with continuing oversight by the campus fire marshal, as the design process proceeds. Campus programs for design, construction, and ongoing facility operation provide an established mechanism to ensure that such features are carried through the design process, included in the constructed buildings, and maintained in working order in accordance with applicable building and fire codes. Potential impacts related to building design for fire protection are less than significant given the documentation of compliance under LRDP Programs and Practices 4.12-1(a) for the design progress to date and in consideration of established campus programs

under the MMRP for the LRDP EIR, which ensure continued compliance for the balance of project design, construction, and operation.

The overall project layout provides for emergency access throughout the site and to each building, as evidenced by the system of drives and walks depicted in Figure 2-6. This aspect of project design has been undertaken in consultation with the campus fire marshal, who will have continued oversight through the balance of the design process and throughout the construction and operation phases. Campus programs for design, construction, and ongoing facility operation provide an established mechanism to ensure that such features are carried through the design and construction process and maintained in serviceable order in accordance with applicable building and fire codes. Potential impacts related to site layout for fire protection and emergency access are less than significant given the documentation of compliance under LRDP Programs and Practices 4.12-1(a) for the design progress to date and in consideration of established campus programs under the MMRP for the LRDP EIR, which ensure continued compliance for the balance of project design, construction, and operation.

Appendix F provides a cross-check for implementation of design and construction elements of this LRDP Programs and Practices as part of the Glen Mor 2 project.

Impact 3.11-2: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for fire prevention services. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

LRDP Program and Practice 4.12-1(a) provides for ongoing assessment of campus fire prevention staffing needs and increases in staffing, as determined through the assessments. Fire prevention staffing, consisting of the fire marshal and two fire inspectors, is currently adequate and able to meet campus fire prevention needs, including design consultation, plan check, inspections, and safety training. The campus fire marshal has determined that the proposed infill development, with student housing and support services, would not pose additional demands on campus fire prevention resources to the extent that additional staffing would be required (Corrin pers. comm.). This aspect of potential impacts related to fire prevention is less than significant.

Impact 3.11-3: Implementation of the Glen Mor 2 Student Apartments Project would increase building area on the campus, potentially increasing demand for fire flow. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

Prior to implementation of individual campus projects, LRDP Program and Practice 4.12-1(a) requires a determination of the adequacy of the water supply and water pressure to ensure sufficient fire protection services. This evaluation is required as part of the project design process. A determination of inadequate fire flows would require consideration of additional improvements to provide necessary flow volume and pressure, which could have environmental effects.

Fire flow information for the Glen Mor 2 project was not available at the time of issuance of the NOP. Since then, design efforts have identified a required fire flow of 1,500 gallons per minute at a residual pressure of 20 pounds per square inch (psi). An evaluation of the existing campus water distribution and storage system was conducted to evaluate its ability to meet these requirements (Appendix R). The modeling effort considered a conservative scenario in which the water system meets general campus maximum daily demand and fire sprinkler demand concurrently. Calibration of the model with actual fire-flow tests at existing fire hydrants revealed that the model provided

conservative results (i.e., the resultant pressures from the model were lower than those obtained by testing at the actual hydrants).

The hydraulic modeling determined that required flows can be delivered for the required duration with the existing campus distribution and storage system at a residual pressure of 35 psi, which exceeds the required residual pressure of 20 psi. The increase in fire-flow demand from the Glen Mor 2 Student Apartments Project would not require any improvements to the campus water distribution or storage system, and therefore, no environmental effects associated with such improvements would occur. This impact is less than significant.

Criterion 2: Will the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for police protection?

Impact 3.11-4: Implementation of the Glen Mor 2 Student Apartments Project would increase building area and the campus residential population, potentially increasing demand for police protection services. *Impact Determination: Less than Significant*

The Glen Mor 2 Student Apartments Project would place several new buildings within an established residential precinct, thereby completing development of this sector of the campus and accommodating an additional 810 students in on-campus housing. LRDP Program and Practice 14.2-2(a) requires hiring additional UCPD officers and support staff as development under the LRDP occurs to maintain adequate staffing, service, and equipment levels and includes expansion of the existing police facility when additional space is required.

The LRDP EIR (page 4.12-12) noted a then-existing service level of 1.4 sworn UCPD officers per 1,000 persons in the campus population (25 sworn officers for the campus population of 17,641) and service levels at other University of California campuses ranging from 0.7 to 1.6 sworn officers per 1,000 persons. Currently, the campus police force has 27 sworn officers for a campus population of 25,040, corresponding to 1.1 officers per 1,000 persons. Response times for emergency calls remains well under the goal of 5 minutes. With respect to the 2009 ratios for sworn officers per 1,000 persons in the campus population, statistics from UCPD reveal that service levels for the entire University of California system range from 0.7 to 2.2., which is higher than the range reported in the LRDP EIR.²

The LRDP EIR (page 4.12-12) stated that adequate levels of service could be provided with a lower ratio of officers to population, based on the general adequacy of service with lower ratios at other University of California campuses, as discussed on the referenced page of the LRDP EIR. At the current ratio of 1.1 sworn officers per 1,000 persons in the campus population, the addition of 810 students from the Glen Mor 2 project would require one additional sworn officer to maintain current service levels. Based on the current campus population and staffing levels for sworn officers, the addition of the Glen Mor 2 students, with no new sworn officers, would result in a service level of 1.0 sworn officer per 1,000 persons. While not considered in the service ratios in the LRDP EIR, it is noted that the UNET

² The 2.2 sworn officers per 1,000 persons in the campus population is for the new Merced campus (campus population 3,717). For the remaining campuses, the ratios range from 0.7 to 1.4, with an average of 0.9.

team includes four City officers whose dedicated beat includes the campus. Also, as noted in the LRDP EIR, the sworn officers are supported by a team of non-sworn community service officers (CSOs) who assist with non-emergency matters. The campus currently employs 24 CSOs (Smith pers. comm.).

While the addition of 810 students at the Glen Mor 2 site could reduce the UCPD officer/campus population ratio from both the service level at the time of certification of the LRDP EIR and current levels, the resultant 1.0 sworn officers per 1,000 persons in the campus population is consistent with service levels maintained at other University of California campuses and would not compromise UCPD's ability to meet response time objectives for emergency calls (Freese pers. comm.).

The UCPD facilities at Canyon Crest Drive and Linden Street are approximately 0.75 mile from the Glen Mor 2 site. The University Village storefront occupied by the joint City/UNET team is approximately 1.5 miles from the Glen Mor 2 site. These two facilities are designed to accommodate 39 sworn officers and a support staff and are more than adequate for current UCPD and UNET needs (Freese pers. comm.). Accordingly, the project would not require new or physically altered police facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection. This impact is less than significant.

3.11.5 Cumulative Impacts

The Glen Mor 2 Students Apartment Project would establish new on-campus housing in a developed sector of the campus, within a mostly built out area of the surrounding Riverside community. Project impacts related to site design for fire prevention are site-specific, on-campus issues that do not present the potential for cumulative effects.

The campus fire prevention staff is currently participating in the design processes for campus construction projects (Barn, EH&S expansion, Student Recreation Center expansion, and the Health Sciences Teaching Center projects). The East Campus Infrastructure Phase 2 Project is currently progressing to the construction stage. The currently anticipated construction schedules for all these projects, except the Barn project, overlap with the Glen Mor 2 project and may require concurrent plan check and inspection services. This level of activity can be supported with existing fire prevention staff and does not require the construction of additional facilities (Corrin pers. comm.).

The campus and surrounding areas within the City are situated within a largely developed area. Four City fire stations are located within a 2-mile radius of the campus. The benchmark for adequate fire protection service is response time, which in a developed area is a location-based factor. Equipment may also be an issue when high-rise structures are involved. In this case, the fire stations that serve the campus are currently equipped to respond to fires in the high-rise structures that already exist on campus and in the surrounding community. The incremental demand associated with cumulative infill development, both on-campus and off-campus, would not require new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts. The potential cumulative impact on fire protection services is less than significant.

Fire flow is a campus-specific issue that is not affected by, or relevant to, off-campus areas or projects. The cumulative projects on the east campus (Barn, EH&S expansion, Student Recreation Center expansion, and Health Sciences Teaching Center projects) involve the redevelopment/minor expansion of existing facilities and an infill site within the developed campus core where fire flow is

adequate for current conditions. The East Campus Infrastructure Improvements Phase 2 Project will increase fire-flow capacity to the north and east quadrants of the campus before occupancy. The School of Medicine is located on the West Campus, within a separate water service area. Accordingly, it does not present the potential for cumulative environmental impacts in combination with the proposed project. Police service is typically addressed on a per capita basis. Because police service is provided by both campus police and City forces, consideration of both on-campus and off-campus factors that influence cumulative demand for service is appropriate. With respect to off-campus demand, the two small residential projects identified by the City are very limited in scale (63 total units), and the timing for implementation of these projects is uncertain. The essentially built-out condition of the surrounding area presents limited potential for substantial cumulative impacts on City police services in this area. For the campus, the identified cumulative projects mostly involve service and infrastructure improvements that would not substantially increase the campus population and therefore do not present the potential for significant cumulative impacts associated with the provision of facilities to house police personnel. The exception is the School of Medicine project, which is anticipated to increase the campus population by approximately 6,253 persons on a daily basis at full buildout (this includes students, doctors, employees, patients, and visitors).

Because of the School of Medicine's large scale, the NOP for this project acknowledged that it is likely to require augmentation of the campus police force. Given the LRPD EIR campus service ratio of 1.4 sworn officers per 1,000 persons and the current service level of 1.1 sworn officers per person, the School of Medicine can be expected to require seven to nine additional sworn campus police officers. It may also warrant augmentation of the City component of the UNET team. Though timing for construction and occupancy of the School of Medicine is uncertain, it is well beyond the horizon of the Glen Mor 2 project. According to the NOP for the recently proposed LRDP amendment, the forthcoming EIR for the LRDP amendment to accommodate the School of Medicine project will address that project's impacts related to facilities to house any associated increased level of police staffing at both a project level and with respect to cumulative development. Solutions to any identified need for new or expanded police facilities would likely involve expansion of the existing campus police facility, expansion of leased UNET space in the existing commercial development, or construction of a new facility on the West Campus. Considering the scale of such improvements and the environmental setting, none of these solutions are likely to involve significant impacts.

Section 3.12

Recreation

3.12.1 Introduction

This section describes the recreational facilities currently available at the UCR campus and in the surrounding community as well as the impacts on recreational resources that would result from implementation of the Glen Mor 2 Student Apartments Project.

Comments made in response to the NOP regarding recreational resources focused on neighborhood concerns with noise and light. General compatibility issues stemming from use of the existing Glen Mor 1 recreation fields were also mentioned. Residents in the single-family residential neighborhood east of Valencia Hill Drive also expressed concerns regarding noise and light as well as compatibility with the existing Glen Mor 1 outdoor fields. Use of these fields is subject to the operational restrictions negotiated between the campus and its neighbors, with use of the easternmost field prohibited after 10 p.m. and use of the two remaining fields prohibited after 12 a.m. The campus recently installed fencing around these fields, which is intended to eliminate unauthorized use and confine related recreational activity to the campus. The neighbor concerns relate to an existing condition on the campus, and the campus is actively engaged with residents to provide solutions to these concerns. The analysis presented in this section considers the potential for increased use of the existing facilities due to the increased supply of on-campus housing. Issues regarding noise and light from these facilities are discussed in Sections 3.1 (Aesthetics) and 3.10 (Noise).

3.12.2 Environmental Setting

The LRDP EIR identified then-existing campus recreational resources, consisting of 46.1 acres of active recreational space and approximately 98,269 gross square feet of facilities within developed buildings. This included resources used for physical education, intercollegiate athletics, intramural sports, sports club activities, and general recreation. Specific facilities noted in this inventory include the football/track stadium, the Student Recreation Center, the outdoor complex adjacent to the Student Recreation Center, the lower intramural fields (along the extension of North Campus Drive between Canyon Crest Drive and Aberdeen Drive), and the Riverside Sports Complex (a joint-use complex at Canyon Crest Drive and Blaine Street [with campus use on Monday, Tuesday, Thursday, and Friday]).

The current inventory of recreational facilities differs from that identified at the time of the LRDP program EIR. Recreational areas previously identified as the lower intramural fields have been eliminated because of the construction of an academic building (i.e., the Material Science and Engineering Building). The seven tennis courts previously affiliated with the Physical Education Building have been displaced by a new academic building (College of Humanities, Arts, and Social Sciences [CHASS]). The western portion of the former lower intramural field site that was not displaced by the new Material Science and Engineering Building has been developed with soccer and softball fields to support the intercollegiate programs. Three new recreational fields have been provided at the Glen Mor 1 site, and a recreational field and outdoor basketball court have been provided at the International Village site on the West Campus. With these changes, on-campus

recreational resources consist of 44.5 acres of active recreational space and approximately 98,269 square feet of facilities in buildings, reflecting a loss of 1.6 acres of recreational field/court area compared with the 2001/2002 baseline condition from the LRDP EIR. An updated summary of existing facilities is presented in Table 3.12-1.

Table 3.12-1. On-campus Active Recreational Facilities Fall 2010

Facility	Acres	Description
Student Recreation Center	3.8 acres	An 80,000-square-foot facility with four racquetball/volleyball courts, one squash court, a 6,000-square-foot weight training facility, and a 3,000-square-foot area dedicated to cardio-fitness machines. The center also has full locker rooms, three multipurpose rooms, and a four-court gymnasium.
UCR Sports and Recreation Complex	5.8 acres	Ten tennis courts, one multi-use field, two sand volleyball courts, two basketball courts, a full-size roller hockey rink that can be converted into two full-length basketball courts, an outdoor ropes course, and an 8-foot-wide jogging trail. All but the ropes course are lighted for evening use.
UCR Softball Field	2.6 acres	One fully improved softball field, including signage, wind screens, enclosed dugouts, a scoreboard, and PA system.
UCR Soccer Field	2.4 acres	One fully improved regulation soccer field, including scoreboard, PA system, and bleachers.
UCR/Riverside Sports Complex	18.1 acres	A 2,500-seat baseball stadium and two recreational softball fields, with option for multi-use field overlay (two fields). This facility is jointly owned and maintained by UCR and the City and is on campus land.
International Village	1.0 acre	One multi-use field and one outdoor basketball court
Glen Mor 1 Fields	4.6 acres	Three multi-use fields with fencing and lights
Housing Recreational Pools	N/A	One each at the Bannockburn, Plaza, Falkirk, and Oban student apartment sites
UCR Track	6.2 acres	Track and field stadium, including a dedicated throwing facility (hammer throw/discus cage and shot put platform).
UCR Fitness Center	N/A	A 5,100-square-foot facility with extensive cardiovascular and weight training machines as well as traditional free weights. Available to Highlander intercollegiate teams, physical education classes, students, and staff.
Physical Education Pool	N/A	Multi-lane outdoor swimming pool

The LRDP EIR also acknowledged campus open space resources that provide passive recreational opportunities. Approximately 275 acres of open space is provided on the East Campus, including the southeast hills, the Botanic Garden, Picnic Hill, arroyos, malls, quadrangles, plazas, and buffers. With respect to open space resources, conditions have not changed since certification of the LRDP EIR.

The 2005 LRDP establishes an overall campus parkland goal of 3 acres per 1,000 persons. This objective considers both passive and active recreational opportunities. With approximately 275 acres of general open space available for passive recreational use and 45 acres for active recreational facilities, the campus currently encompasses a total of 320 acres of parkland. For the current campus population of 25,040, parkland resources are presently available at a ratio of approximately 13 acres per 1,000 persons, far exceeding the parkland goal.

In addition to on-campus resources, the UCR campus population has access to parks and recreational facilities managed by the City and the County of Riverside. The LRDP EIR (beginning on page 4.13-5) identifies 18 City parks within 2 miles of the campus and acknowledges the nearby Box Springs Mountain Regional Park, which provides nearly 2,400 acres of county-managed parkland with opportunities for riding, hiking, and picnicking. An evaluation of current City and county park inventories indicates that no changes have occurred at off-campus facilities. City records reflect nominal acreage changes at several parks, with the most notable changes involving the development of approximately 37 acres at Andulka Park, the addition of several fields at Reid Park, and an expansion of the Sycamore Canyon Wilderness Park (from 483 acres to 1,590 acres) (City of Riverside 2010).¹

3.12.3 Regulatory Framework

There are no federal, state, or local regulations that are applicable to the provision of recreational opportunities at the UCR campus.

3.12.4 Impact Analysis

Methodology

Analysis of the project's recreational impacts considers the project-level impacts associated with campus demands on existing recreational facilities at both on-campus and off-campus facilities. The analysis presented in the LRDP EIR compared the inventory of the then-existing on-campus recreational facilities with associated demand based on rule-of-thumb facilities requirements (LRDP EIR, Table 4.13-2, page 4.13-4). The project-specific analysis presented in this EIR uses the same methodology as the program-level EIR, with updates to reflect the current inventory of campus resources and updated campus population statistics.

The proposed student housing development is intended to contribute to the LRDP objective to house an increased percentage of students in campus-controlled housing. For fall 2010, 451 residence hall beds were accommodated by adding a third bed to rooms that were intended to have a double configuration.

The campus population consists of students, faculty, and staff. An increase in student enrollment, therefore, entails a commensurate increase in the number of faculty and staff positions. Campus statistics for fall 2010 (20,746 students; 4,294 faculty and staff) indicate that approximately 0.2 faculty and staff positions currently exist for each student. In comparison, the LRDP EIR considers a faculty and staff ratio of 0.4 per student. To accommodate an increase of 810 in the student population on campus, associated faculty and staff growth would need to range from 162 to 324.

It is reasonable to assume that some proportion of the future Glen Mor 2 residents will come from the existing student body. For this analysis, the potential increased demand for recreational facilities is based on a conservative assumption of a campus population increase of 810. This approach treats the unknown proportion of future Glen Mor 2 residents from the existing student body as equivalent

¹ The updated statistics for the 18 City parks indicate a total area of approximately 2,170 acres, with approximately 354 acres that have been developed. A substantial component of the undeveloped acreage consists of the Sycamore Canyon Wilderness Park.

to any associated increase in faculty and staff numbers. Considering the number of double rooms that are currently occupied as triple units and the unmet housing need, as evidenced by the waiting list for housing, this assumption is reasonable.²

Significance Criteria

The criteria for analyzing the project's impacts on recreational facilities are based on Appendix G of the State CEQA Guidelines, with an additional campus-specific criterion established in the LRDP EIR. Considering existing conditions on the project site, the Glen Mor 2 Student Apartments Project does not present the potential for impacts for the following significance criterion:

- Affect existing recreational opportunities?

This added criterion was directed at LRDP implementing activities that would displace existing campus recreational facilities. Inasmuch as there are no existing recreational facilities on the Glen Mor 2 site, this criterion is not applicable to the proposed project.

For the Appendix G criteria, implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated, or
2. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

These criteria are addressed in Section 3.12.4, below.

LRDP MMRP Measures

The LRDP EIR does not identify any program-level programs and practices or mitigation measures pertaining to recreation.

Impacts and Mitigation Measures

Criteria 1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

As noted in Section 3.12.2, above, the campus presently encompasses a total of 320 acres of parkland and has a population of 25,040, equating to approximately 13 acres of parkland per 1,000 persons, which exceeds the LRDP goal of 3 acres per 1,000 persons. With the addition of 810 students from the Glen Mor 2 project, general parkland resources would be available at a ratio of approximately 12 acres per 1,000 persons. The number of acres of parkland per 1,000 persons far exceeds the LRDP goal for both existing and plus-project conditions. Given the extent to which this goal is exceeded, increased use of existing on-campus facilities resulting from the proposed project would not lead to substantial physical deterioration of general parkland resources.

² The most recent waiting list information is from summer 2010, during which time the waiting list for housing in the 2010/2011 academic year included 769 students for residence halls, 1,213 for campus apartments, and 506 for family housing (Plumley pers. comm.).

The LRDP EIR (pages 4.13-8 and 4.13-9) concluded that increased use of off-campus parks and recreational facilities due to LRDP buildout would not result in substantial deterioration of these off-campus resources. The proposed Glen Mor 2 Student Apartments Project is consistent with the scale of development contemplated in the LRDP EIR, and as documented in Section 3.12.2, above, the inventory of off-campus recreational facilities in the immediate campus environs has expanded substantially since certification of the LRDP EIR. The LRDP EIR conclusion in this respect remains valid.

The focus of analysis for this criterion is project-related demand on existing active recreational facilities on the UCR campus and spillover demand on City park facilities.

Impact 3.12-1: The project-related increase in campus population would not increase the use of existing active recreational facilities on campus such that substantial physical deterioration of the facilities would occur or be accelerated. *Impact Determination: Less than Significant*

The LRDP EIR (Table 4.13-2, page 4.13-4) identified per capita facility standards for various active recreational facilities and compared the current inventory of facilities with existing demand and future needs. Table 3.12-2 updates the LRDP EIR table to reflect current conditions. A shortage of active recreational facilities was noted at the time of preparation of the LRDP EIR. Table 3.12-2 indicates a continuation of that condition. For outdoor multi-use fields, the baseline condition today is comparable to the condition that existed at the time the LRDP EIR was prepared (a deficit of two fields).

The LRDP EIR concluded that implementation of the 2005 LRDP would meet the active recreational needs at campus buildout. However, this programmatic level of analysis did not consider the interim conditions that would precede LRDP buildout. For each of the on-campus recreational activities defined under the LRDP (Table 3.12-2), existing facilities fall short of the corresponding demand given the existing campus population. UCR personnel carefully manage the existing active recreational facilities to optimize availability for the campus population and maintain the facilities in the appropriate physical condition.

Increasing the campus population by 810 (i.e., new students who would be housed at the Glen Mor 2 student apartments) would not substantially worsen the current facility deficits (compare the “2010/2011 Need” and “With Glen Mor 2” columns in Table 3.12-2). On this basis, while the proposed project may increase the use of existing campus recreational facilities, the anticipated increase would not be of a magnitude that would result in, or accelerate, substantial physical deterioration. Furthermore, the project would provide a pool and indoor fitness facility for use by residents of the housing precinct, which would reduce the potential increase in demand on on-campus facilities. This potential impact would be less than significant, and no project-level mitigation is required.

As noted above, the population increase resulting from the Glen Mor 2 Student Apartments Project would not alter the current level of need on campus for active recreational facilities. As discussed above in Section 3.12.1, the Glen Mor 1 recreational fields operate under stipulated limitations that were negotiated between the campus and off-campus residents east of the site. The proposed project would introduce students to the project site, which is located near the subject fields, but these additional students would not cause the operational limitations to be altered. The proposed Glen Mor 2 project is not projected to increase use of the Glen Mor 1 fields substantially and would not change the hours or terms of operation. This potential impact would be less than significant and no project-level mitigation is required.

Impact 3.12-2: The project-related increase in campus population would not increase the use of existing off-campus neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. *Impact Determination: Less than Significant*

The LRDP EIR concluded that implementation of the 2005 LRDP would meet active recreational needs at campus buildout. However, this programmatic level of analysis did not consider interim conditions that would precede LRDP buildout. For each of the on-campus recreational activities defined under the LRDP (Table 3.12-2), existing on-campus facilities fall short of the corresponding demand given the existing campus population. While UCR personnel carefully manage the existing facilities to optimize availability and meet active recreational needs on campus, it is reasonable to expect that unmet campus demand for active recreational facilities may lead to use of off-campus facilities.

There are 18 City parks within 2 miles of the campus, providing a wide array of active recreational facilities. With respect to the potential for project-related population growth to affect the physical condition of City parks substantially, the nominal incremental population increase resulting from implementation of the Glen Mor 2 Student Apartments Project would not increase use of City parks to an extent that would result in substantial physical deterioration or accelerated physical deterioration. It is noted that the comment letter provided by the City in response to the NOP for this project (included in Appendix A) did not raise any specific concerns regarding impacts on City park facilities. This potential impact would be less than significant and no project-level mitigation is required.

Table 3.12-2. UCR Active Recreational Facilities

Facility and Locations	Rule of Thumb per Headcount	2010/2011 Existing	2010/2011 Need	With Glen Mor 2	LRDP Buildout Need
Outdoor Lighted Multi-Use Fields International Village (1), UCR/Riverside Sports Complex (2), Track Stadium (1), UCR Sports and Recreation Complex (1), Glen Mor 1 (3)	1 per 2,500	8	10	10	14
Outdoor Basketball Courts International Village (1), UCR Sports and Recreation Complex (4)	1 per 2,500	5	10	10	14
Indoor Multi-Purpose Courts (basketball, badminton, volleyball) Student Recreation Center (8)	1 per 2,500	8	10	10	14
Multi-Use Hockey/Basketball/Indoor Soccer UCR Sports and Recreation Complex (1)	1 per 2,500	1	10	10	14
Sand Volleyball Courts UCR Sports and Recreation Complex (2)	1 per 2,500	2	10	10	14
Racquetball/Handball Riverside Sports Complex (4)	Unknown	4	N/A	N/A	N/A
Squash Student Recreation Center (1)	Unknown	1	N/A	N/A	N/A
Recreational Softball Diamonds UCR/Riverside Sports Complex (2)	1 per 7,500	2	3	3	5
Baseball Stadium UCR/Riverside Sports Complex	1 per campus	1	1	1	1
Softball Stadium East of Canyon Crest Drive at University Avenue	1 per campus	1	1	1	1
Soccer Competitive Pitch with Spectator Seating Adjacent to softball stadium and track	1 per campus	1	1	1	1
Soccer Practice Pitch	1 per campus	None	1	1	1
Track with Field Events Venue South of Linden Street adjacent to Student Recreation Center	1 per campus	1	1	1	1
Swimming Pool—Recreational	1 major pool per 15,000	None	2	2	2
Swimming Pool— Instructional/Competitive Physical Education	1 per campus depending on programs	1	1	1	1
Tennis Courts UCR Sports and Recreation Complex (10)	1 per 1,000	10	25	26	36

Criteria 2: Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

Impact 3.12-3: Implementation of the proposed Glen Mor 2 Student Apartments Project includes recreational facilities that would not have adverse physical effects on the environment. *Impact Determination: Less than Significant*

The proposed improvements include an outdoor swimming pool and indoor fitness facilities (within the Community Building [Building F]) for student use. The pool would be located in the center of the site, on a terrace framed by residential and community buildings to the west, south, and east (Figure 2-3). Because the proposed recreational facilities are a component of the overall Glen Mor 2 Student Apartments Project, potential impacts related to construction and operation are addressed under air quality (Section 3.2), land use (Section 3.9), and noise (Section 3.10) sections of this EIR. These related impact analyses do not identify any potential for adverse physical effects on the environment resulting from the proposed pool or Community Building. This impact would be less than significant and no project-level mitigation is required.

The discussion of Impacts 3.12-1 and 3.12-2, above, addresses the deficit in active recreational facilities on the campus as well as the nominal incremental increase to the existing deficit with the addition of the future Glen Mor 2 residents (compare the “2010/2011 Need” and “With Glen Mor 2” columns in Table 3.12-2, which indicate a difference of one tennis court). While the expansion of campus recreational facilities would provide improved access to such facilities, the project does not require the construction or expansion of recreational facilities.

A portion of the Glen Mor 2 student apartments site is currently designated for Athletics and Recreation uses. The project includes an amendment to the LRDP to change the land use designation for this portion of the site to Family, Apartment Housing and Related Support. Impacts associated with this aspect of the proposed project are addressed under Land Use and Planning (Impact 3.9-4).

3.12.5 Cumulative Impacts

The project’s potential impacts on recreational resources are related to incremental demands on existing on-campus active recreational facilities. As noted in Impact 3.12-1, above, the campus is currently deficient in its provision of active recreational facilities. This is an existing cumulative condition that eventually would be mitigated through the development of the additional recreational facilities anticipated in the LRDP.

The cumulative projects considered in this analysis involve infrastructure projects; service improvements; the redevelopment of existing uses on the East Campus, which would not increase demand on on-campus recreational facilities; and an LRDP amendment involving a future School of Medicine on the West Campus, which would entail on-campus recreational facilities. The off-campus cumulative projects (two small residential projects and a commuter rail project) do not present the potential to contribute to cumulative impacts on on-campus active recreational facilities. Therefore, the existing on-campus deficit in recreational facilities is not likely to worsen significantly with implementation of the cumulative projects.

One of the cumulative campus projects, expansion of the Student Recreation Center, would contribute substantially toward the ultimate provision of the on-campus active recreational facilities envisioned under the LRDP. Expansion of the Student Recreation Center would improve the availability of on-campus active recreational facilities substantially, on a timeframe concurrent with the Glen Mor 2 Students Apartments Project, and lessen the existing cumulative impact.

Section 3.13
Transportation and Traffic

3.13.1 Introduction

This section describes the affected environment and regulatory setting for transportation and traffic and describes the impacts on transportation and traffic that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts. The discussion in this section summarizes the analysis and conclusions of the traffic impact analysis prepared for the project by Kunzman Associates (Kunzman) in November 2010, which is provided in Appendix S.

The LRDP EIR provided detailed analysis regarding the impacts of implementing the campus development plan on a wide-reaching network of on- and off-campus roads, including local freeways. The project proposes student housing, which was anticipated in the LRDP EIR. Therefore, it does not propose vehicle trips that are beyond the scope of the traffic impact analysis presented in the LRDP EIR. However, because conditions have changed in the vicinity of the project site and the Glen Mor 2 student apartments would entail an interim condition during construction when Parking Lot 14 would not be available, as well as new driveways and an additional intersection that was not analyzed in the LRDP EIR, updated project-level analysis is included as part of this EIR to focus on project traffic and the affected on- and off-campus roadway network.

The scoping period for this EIR identified several issues related to traffic, which are addressed in this section. An NOP response letter from the City Public Works Department (copy included in Appendix A) requested that the traffic analysis consider the current barricaded situation on Valencia Hill Drive and the existing parking restrictions in the nearby off-campus area. City representatives also requested that the Big Springs Road/Valencia Hill Drive intersection be included in the study area and that the campus traffic consultant coordinate with the City traffic engineering staff regarding the study scope and trip distribution assumptions. In addition to this formal response letter, several neighbors commented on traffic issues during the public scoping meeting, mostly expressing concern for existing traffic levels generated by the campus and requesting that the EIR analyze the project's impacts on the immediate off-campus area. Neighbors also requested that the traffic analysis consider traffic patterns with a closed Campus Drive loop, based on LRDP statements indicating an ultimate intent to limit traffic in the campus core.

3.13.2 Environmental Setting

Local Roadway Network

The proposed project is located at the edge of the UCR campus, in an area accessed by a combination of on-campus roads and off-campus City roads. In coordination with City staff, Kunzman identified the study area for the project, which is shown in Figure 3.13-1. Kunzman determined that project traffic would be carried by three on-campus roadways (Aberdeen Drive, Campus Drive, and Eucalyptus Drive), two City roadways (Valencia Hill Drive and Watkins Drive), and two roads that

occur both on and off campus (Big Springs Road and Linden Street).¹ Full descriptions of these roads are provided in Section 4.14.2 of the LRDP EIR (beginning on page 4.14-2), with the exception of Valencia Hill Drive, which is a north/south two-lane undivided road that serves as the eastern boundary of the project site. The road is a City facility and not classified in the City General Plan Circulation Element. Barricades have been placed on Valencia Hill Drive north of the multi-family residential complex on the northeast corner of Valencia Hill Drive and Big Springs Road to prevent cut-through use of Valencia Hill Drive, which served as an alternate to Watkins Drive.

In general, conditions on the listed roadways have not changed significantly from the conditions described in the LRDP EIR. One notable change is the intersection of Big Springs Road and Watkins Drive where the baseline LOS in the evening peak hour has improved from LOS E to LOS D. This change is likely attributed to improvements on State Route 60/Interstate 215 since certification of the LRDP EIR and the resultant decrease in the volume of traffic using Watkins Drive as an alternate route.

Study Area Intersections

The study area for the project includes the following eight intersections, with the listed numbers corresponding to those shown in Figure 3.13-1. These intersections were selected in coordination with City traffic engineering staff and include all intersections that are projected to receive 50 or more peak-hour trips as a result of the proposed project:

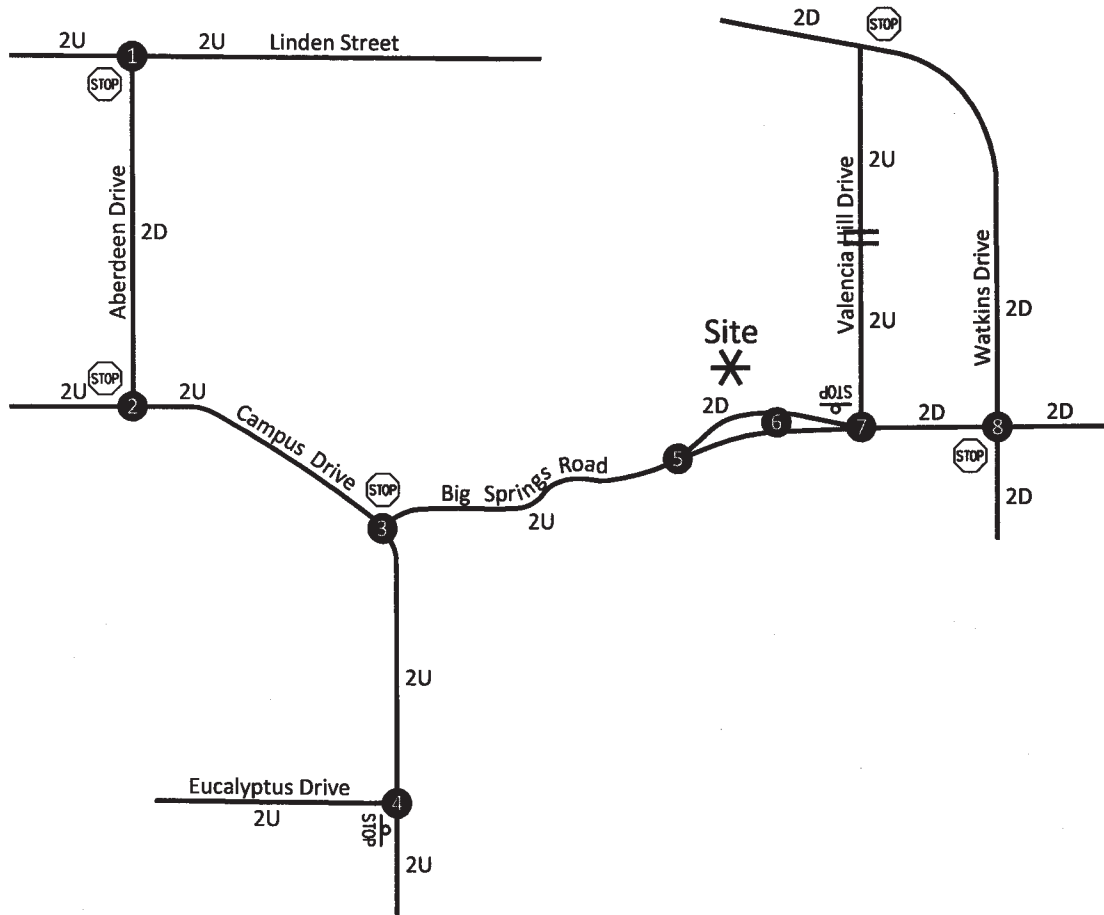
1. Aberdeen Drive/Linden Street,
2. Aberdeen Drive/Campus Drive,
3. Campus Drive/Big Springs Road,
4. Campus Drive/Eucalyptus Drive,
5. Western project driveway/Big Springs Road,²
6. Eastern project driveway/Big Springs Road,
7. Valencia Hill Drive/Big Springs Road, and
8. Watkins Drive/Big Springs Road.

Existing lane configurations and controls (stop signs or signals) for these intersections are also shown in Figure 3.13-1. With the exception of the two project driveways and the Valencia Hill Drive/Big Springs Road intersection, these facilities were included in the LRDP EIR study area.

¹ Big Springs Road is errantly referenced as Big Springs Drive in the LRDP EIR.

² Two driveways currently provide access to the on-campus Parking Lot 14 along Big Springs Road. The west driveway would be maintained with the project. The east driveway and the associated median opening in Big Springs Road would be eliminated. Two new driveways would be established on the north side of Big Springs Road, one at the main project entry court (including modifications to shorten the existing Big Springs Road median [this driveway would allow entry to the parking structure and serve as the sole point of egress]) and one at the southeast corner of the parking structure (entry only). The two new driveways are included in the analysis presented in this section of the EIR. The existing west driveway is not analyzed because traffic conditions at this location would not change substantially with project implementation. This driveway would continue to serve the remaining portion of Parking Lot 14 as well as provide service access to the Food Emporium.

Existing Through Travel Lanes and Intersection Controls



Legend

- = All Way Stop
- = Stop Sign
- 2 = Through Travel Lanes
- D = Divided
- U = Undivided
- = Road Closure

1 	2 	3 	4
5 	6 	7 	8

Intersection reference numbers are in upper left corner of turning movement boxes.

K:\San Diego\projects\UCR\00374_10\outgoing\pdf\NIR\Fig3_13-1.pdf DG 20101222



Source: Kunzman Associates, Inc



Figure 3.13-1
Traffic Study Area
Glen Mor 2 Student Apartments

Existing Traffic Conditions

Traffic conditions in the project study area are represented in this analysis by intersection delay, which informs an LOS score that compares an intersection's existing traffic volume with its traffic capacity and assigns a letter-based grade to the facility, with "A" indicating an optimally functioning intersection and "F" indicating a poorly functioning intersection. For this analysis, LOS D represents the lowest level of acceptable delay, with LOS E and LOS F indicating unacceptable service. See Section 4.14.2 of the LRDP EIR (beginning on page 4.14-7) for a full explanation of the LOS methodology. Tables 4.14-1 and 4.14-2 of the LRDP EIR (page 4.14-7) identify the delay ranges that correlate to the LOS grades for signalized and unsignalized intersections.

Existing delay and LOS for the studied intersections are shown in Table 3.13-1. This information is based on manual counts taken at the studied intersections in May 2010.³

Table 3.13-1. Existing Intersection Operations

Intersection	Traffic Control 1	Delay/LOS	
		Morning	Evening
1. Aberdeen Drive/Linden Street	AWS	8.9/A	12.7/B
2. Aberdeen Drive/Campus Drive	AWS	8.5/A	9.5/A
3. Campus Drive/Big Springs Road	AWS	8.7/A	9.5/A
4. Campus Drive/Eucalyptus Drive	CSS	10.7/B	11.3/B
5. Western project driveway/Big Springs Road2	NA	NA	NA
6. Eastern project driveway/Big Springs Road2	NA	NA	NA
7. Valencia Hill Drive/Big Springs Road	CSS	9.9/A	10.3/B
8. Watkins Drive/Big Springs Road	AWS	30.7/D	33.2/D

Source: Kunzman, 2010.

1: AWS = All-Way Stop; CSS = Cross-Street Stop.

2: Existing delay and LOS are not shown for the two project driveways because they do not yet exist.

As shown in Table 3.13-1, all studied intersections are operating at acceptable levels under existing conditions. The Watkins Drive/Big Springs Road intersection is operating at LOS D, the lowest acceptable level.

Because this housing project is not anticipated to be occupied until 2013, the intersection impact analysis includes estimated 2013 conditions without the project. This approach allows a good estimate of traffic conditions as they would occur when the project opens and provides a means to evaluate the project's contribution to those conditions. Future conditions were estimated by adding traffic trips, assuming a 1.7 percent annual growth rate, based on the rate used in the LRDP EIR, and calculating the resultant intersection delay at this project's studied intersections.

³ Delay was determined using the methodology found in the 2000 *Highway Capacity Manual*. Delay and LOS are shown for the weekday morning and weekday evening peak periods, which are the four consecutive 15-minute periods between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. in which the highest number of vehicles move through the studied intersections. The specific 60-minute period corresponding to the peak hour can vary by intersection.

Table 3.13-2. Opening Year Intersection Operations

Intersection	2013 w/o Project Delay/LOS	
	Morning	Evening
1. Aberdeen Drive/Linden Street	9.0/A	13.5/B
2. Aberdeen Drive/Campus Drive	8.6/A	9.8/A
3. Campus Drive/Big Springs Road	8.8/A	9.8/A
4. Campus Drive/Eucalyptus Drive	10.9/B	11.5/B
5. West driveway/Big Springs Road1	--	--
6. East driveway/Big Springs Road1	--	--
7. Valencia Hill Drive/Big Springs Road	10.0/A	10.4/B
8. Watkins Drive/Big Springs Road2		
-without signal improvements	38.6/E	41.6/E
-with signal improvements	10.1/B	11.6/B

Source: Kunzman, 2010.

1: Existing delay and LOS are not shown for the two project driveways because they do not yet exist.

2: Delay and LOS for Watkins Drive/Big Springs Road are shown with two scenarios, one assuming the intersection remains in its current state and one assuming the signal improvements discussed below are implemented.

As shown in Table 3.13-2, the Watkins Drive/Big Springs Road intersection, which operates at LOS D under existing conditions, is anticipated to degrade to LOS E in the opening year without the addition of project traffic. All other studied intersections are anticipated to operate at acceptable levels in opening-year conditions without the addition of project traffic.

The LRDP EIR identified a future degradation of service at the Watkins Drive/Big Springs Road intersection, with the intersection expected to operate at LOS E and LOS F in the morning and evening peak hours, respectively (see LRDP EIR Table 4.14-11, page 4.14-25, and Table 4.14-14, page 4.14-30). The LRDP EIR also stated that installing a signal at this intersection would improve operation to LOS A and LOS B during the respective peak hours. Because the projected degradation is independent of LRDP traffic, the LRDP EIR identifies this improvement in its list of "Improvements Needed for Background Traffic Growth without LRDP" (see page 4.14-26 and -27 of the LRDP EIR). This improvement would be up to the discretion of the City and, as stated in the traffic impact analysis for the Glen Mor 2 project, the intersection is on the City's traffic signal priority list.

Parking Supply and Demand

The LRDP establishes residential parking ratios for on-campus facilities. For residence halls, the ratio is one space per four students; for apartments, the ratio is one space per two students; and for family housing, the ratio is one space per one and a half students. Parking for student housing is provided in various lots near the residence halls or apartment buildings, and aside from a limited number of visitor and accessible spaces, use is controlled by permit. Three lots serve the project-related housing precinct, which includes the existing residence halls of Aberdeen-Inverness, Lothian, and Pentland Hills, as well as the Glen Mor 1 student apartments, as shown below in Table 3.13-3.

Table 3.13-3. Existing Parking Inventory

Parking Lot	Number of Spaces
Lot 14	482
Lot 21	429
Lot 22	346
Total for Housing Precinct	1,257

Source: Personal communication from Andrew Stewart, December 9, 2010.

Table 3.13-4 shows the existing parking demand according to occupancy for fall 2010.

Table 3.13-4. Existing Parking Demand for Student Housing Precinct

Residential Development	Occupancy (beds)	LRDP Parking Ratio (spaces:beds)	Parking Demand
Aberdeen-Inverness	998	1:4	250
Lothian	1,089	1:4	272
Pentland Hills	1,324	1:4	331
Glen Mor 1	499	1:2	250
Total Demand for Precinct			1,103
Total Inventory for Precinct			1,257
Parking Surplus for Precinct			154

Source: Personal communication from Susan Marshburn, December 8, 2010.

As shown in the tables above, the housing precinct in which the project would be located currently has a surplus of 154 parking spaces, based on the ratios stated in the LRDP. With the existing surplus of parking spaces, the campus has been able to issue parking permits to more resident students than it would have been able to issue if the facilities had only met LRDP parking ratios.⁴

Parking Lot 14, which is located on the project site, currently provides 482 parking spaces for resident students. There are two access driveways to Lot 14 from Big Springs Road. Parking Lot 14 is divided into upper Parking Lot 14, which is located adjacent to the Lothian residence hall and provides 78 spaces, and lower Parking Lot 14, which is located east of the west driveway and provides the remaining 404 spaces. Parking Lot 14 also provides several dedicated spaces for disabled resident student parking, located on upper Parking Lot 14.

During the scoping period, residents of the adjacent off-campus neighborhood reported that students frequently park along off-campus streets. The LRDP acknowledges that, as the campus becomes more populous and demand for on-campus parking increases, off-campus streets, including residential streets adjacent to the campus, will be attractive parking alternatives for some members of the campus population. To account for this impact, the LRDP identified Mitigation Measures 4.14-10(a) and (b), which entail the campus working with the City to monitor student

⁴ Campus representatives have indicated that a number of rooms in the residence halls and student apartments in the project-related housing precinct are operating with a higher occupancy than was originally intended, with double-occupancy rooms having been outfitted with an additional bed to serve as triple-occupancy rooms. The occupancy numbers shown in Table 3.13-4 reflect the number of beds currently provided in these facilities. For fall 2010, 451 beds were provided by establishing triple occupancy in rooms that were intended for double occupancy.

parking in off-campus areas and, if necessary, implement measures such as increased enforcement of parking regulations, changes in parking regulations, and establishment of a residential permit parking system in off-campus areas. Since adoption of the LRDP, the City has established permit-only parking restrictions in the neighborhoods east of the project site, leaving only the south side of Watkins Drive, west of Valencia Hill Drive, available for on-street parking. The campus conducts regular coordination meetings with the City, and the City remains responsible for enforcing the parking restrictions. The City and campus have also jointly prepared “Good Neighbor Guidelines,” which are provided to all students and include conduct guidelines pertaining to traffic safety and parking. The campus has established a “Good Neighbors” web site,⁵ which includes an electronic form for reporting violations. The guidelines and any reported violations are discussed at regular City/campus coordination meetings and subject to formal review annually.

Alternative Transportation

Section 4.14.2 of the LRDP EIR (beginning on page 4.14-11) provides a comprehensive description of the transit facilities that serve the campus, including on-campus shuttle and off-campus public facilities. The project site itself is served by the Riverside Transit Agency (RTA), Route 10, which is not discussed in the LRDP EIR. RTA Route 10 carries passengers between the northeastern edge of the UCR campus and the Galleria at Tyler to the south, serving downtown Riverside in between. The RTA Route 10 stop nearest the project site is at the corner of Watkins Drive and Valencia Hill Drive. This route travels along Watkins Drive in the vicinity of the project site but does not travel on Valencia Hill Drive or on the project-frontage segment of Big Springs Road. Additionally, certain RTA bus routes overlap with the proposed construction haul route (Route 1: Linden Street; RTA Route 51: Canyon Crest Drive and Iowa Avenue; Route 53: Aberdeen Drive and Linden Street; Route 204: Linden Street and Iowa Avenue).

The UCR Transportation and Parking Services Highlander Shuttle runs along Linden Street, Aberdeen Drive, and Campus Drive in the vicinity of the site. The shuttle stop nearest the project site is located along North Campus Drive west of the project site, near the western terminus of Big Springs Road.

As noted in Section 4.14.2 of the LRDP EIR (page 4.14-16), separate bicycle lanes are provided on some campus and City roads, including Linden Street, Aberdeen Drive, and Big Springs Road, in the project study area. Pedestrian access to the project site is currently provided on sidewalks along both sides of Big Springs Road and along the eastern side of Valencia Hill Drive. Access to the north is available along paved and unpaved paths, including unofficial routes that traverse the arroyo within the project area.

3.13.3 Regulatory Framework

Information regarding local regulations governing transportation and traffic at UCR is provided in Section 4.14.3 of the LRDP EIR (beginning on page 4.14-19). Since publication of the LRDP EIR, the City has updated its general plan (2007) and University Neighborhood Plan (2008) (the relevant policies are discussed below). There are no other regulations pertinent to project-related traffic impacts beyond those presented in the LRDP EIR.

⁵ UCR. 2008. *Good Neighbor Guidelines*. Available: <<http://conduct.ucr.edu/learnPolicies/Pages/GoodNeighborGuidelines.aspx>>.

City of Riverside

General Plan Circulation and Community Mobility Element

The City General Plan Circulation Element provides broad guidance regarding developing, improving, and maintaining the city-wide circulation system. Policy CCM-2.3 states the City's intent to maintain LOS D or better on arterial streets. While the City General Plan policies do not apply to the university, UCR used the same threshold in the analysis of Glen Mor 2 operational traffic impacts. No other objectives or policies in this element are specifically relevant to the Glen Mor 2 project.

University Neighborhood Plan Circulation and Community Mobility Element

This document's stated objective is to "enhance the university neighborhood's quality of life by alleviating parking and traffic problems, improving all modes of transportation, and upgrading hiking trails." The plan depicts a program of improvements specific to Watkins Drive in the vicinity of the project site and identifies a policy to minimize the proliferation of non-resident parking along Watkins Drive and in the residential area to the east. While these university neighborhood plans do not apply to the university, UCR supports the neighborhood goals.

3.13.4 Impact Analysis

This section presents a discussion of the potential transportation and traffic impacts associated with construction and operation of the proposed project.

Methodology

The analysis of the project's contribution to intersection delay presented in this section is based on the traffic impact analysis prepared by Kunzman (Appendix S). Kunzman performed the traffic analysis using actual traffic counts recorded at the studied intersections in May 2010 and then assigned an LOS grade for each studied intersection according to its delay, as explained above. The project's trip generation was then estimated by applying the LRDP trip generation rate for on-campus apartments to the number of beds to be provided within the Glen Mor 2 project. This provides a conservative estimate of trips because it assumes that all Glen Mor 2 residents are new students who are not currently generating trips on the local circulation system, which is unlikely to be the case. Trip generation rates were determined for daily traffic, morning peak-hour inbound and outbound traffic, and evening peak-hour inbound and outbound traffic. Kunzman then estimated the distribution of project-related traffic to determine the impacts on existing intersection dynamics, basing the estimate on existing distribution and other information regarding future on-campus development, as stated in the LRDP. Trip generation rates and trip distribution were determined in coordination with City traffic engineering staff. Once the trip distribution was established, Kunzman analyzed its effect on intersection delay compared with existing conditions and determined whether it constituted a significant impact. Additional information regarding the methodology applied to the technical traffic analysis is provided in Appendix S.

ICF conducted the quantitative analysis of the project's parking impacts based on the parking criteria established in the LRDP.

Analysis of the project's construction-period impacts along the identified routes for deliveries and excess material hauling is qualitative and based on the impact analysis, programs and practices, and mitigation measures stated in the LRDP EIR.

Significance Criteria

The criteria for analyzing the project's impacts on transportation and traffic are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criteria listed below.

- Would the project conflict with an applicable congestion management program, including level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

The LRDP EIR (page 4.14-62) identified significant and unavoidable impacts on Riverside County Congestion Management Plan facilities due to increases in traffic on highway facilities that are already congested under existing conditions, including Interstate 215, State Route 60, and State Route 91. The project is consistent with the nature and intensity of use proposed under the adopted 2005 LRDP. It would not generate trips on these regional freeway and highway facilities beyond the levels that were analyzed programmatically in the LRDP EIR.

- Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that would result in substantial safety risks?

The LRDP EIR (page 4.14-7) determined that the LRDP would not result in any changes to air traffic patterns or an increase in air traffic levels. The proposed Glen Mor 2 Student Apartment Project has no air traffic component and would not establish tall structures near an airport.

The following Appendix G significance criteria are addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
2. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
3. Result in inadequate emergency access;
4. Result in inadequate parking capacity; or
5. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities.

Quantitative analysis is provided in this section per criterion 1, listed above. According to the criteria established in the LRDP EIR, the project would have a significant impact on the on- or off-campus circulation system if

- The addition of project-related trips would cause a studied intersection that is currently operating at acceptable peak-hour levels (LOS A through LOS D) to operate at unacceptable peak-hour levels (LOS E or LOS F), or
- The addition of project-related trips would increase delay at a studied intersection by the following levels:
 - LOS A, LOS B: 10.0 seconds;
 - LOS C: 8.0 seconds;
 - LOS D: 5.0 seconds;
 - LOS E: 2.0 seconds; and
 - LOS F: 1.0 seconds.

These thresholds are the same as those maintained by the City (City of Riverside 2009).

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to transportation and traffic. The applicable measures are listed in Appendix F of this EIR and are considered part of the project for purposes of this analysis. In general, the measures address design practices and construction practices, which will be implemented as part of this project, to ensure safe operational conditions and to reduce the effects of construction activity. Where necessary, project-specific measures related to these LRDP EIR measures that must be implemented in final design and construction of the Glen Mor 2 Student Apartments project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system?

The project would permanently add trips to the existing on- and off-campus circulation system by constructing a new residential facility for students, some of which are anticipated to travel by car. This increase in traffic is related to the campus-wide growth anticipated in the LRDP EIR. The project would not increase growth beyond the level stated in the LRDP EIR. As shown in Table 3.13-5, the project is anticipated to generate a total of 3,243 trips on a daily basis (average daily trips, or ADT) given the established trip generation rate.

Table 3.13-5. Project Traffic Generation

Land Use:	Quantity (Beds)		AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
On-Campus Apartments								
Trip Generation Rate ¹	--	4.004	0.039	0.049	0.088	0.099	0.125	0.224
Trips Generated	810	3,243	32	40	72	80	101	181

Source: Kunzman, 2010.

¹ Traffic generation rates account for ancillary uses (i.e., non-student trips).

The anticipated distribution of the project's inbound and outbound trips is shown in Figure 7 and Figure 8 of Appendix S, respectively. Peak-hour turning movements for the morning and evening peak trips are shown in Figure 9 and Figure 10 of Appendix S, respectively. Using these modeled assumptions, the project's contribution to delay at the studied intersections was calculated. Table 3.13-6, below, presents the estimated increase in intersection delay due to project-related trips and the associated effect on LOS at these intersections.

Table 3.13-6. Opening-Year With- and Without-Project Intersection Operations

Intersection	2013 Without-Project Delay/LOS		2013 With-Project Delay/LOS		Project Delay AM/PM
	Morning	Evening	Morning	Evening	
1. Aberdeen Drive/Linden Street	9.0/A	13.5/B	9.2/A	15.1/C	0.2/1.6
2. Aberdeen Drive/Campus Drive	8.6/A	9.8/A	8.7/A	10.4/B	0.1/0.6
3. Campus Drive/Big Springs Road	8.8/A	9.8/A	9.0/A	10.9/B	0.2/1.1
4. Campus Drive/Eucalyptus Drive	10.9/B	11.5/B	11.1/B	12.0/B	0.2/0.5
5. West driveway/Big Springs Road ¹	NA	NA	10.3/B	11.7/B	NA
6. East driveway/Big Springs Road ¹	NA	NA	9.5/A	9.1/A	NA
7. Valencia Hill Drive/Big Springs Road	10.0/A	10.4/B	10.2/B	11.2/B	0.2/0.8
8. Watkins Drive/Big Springs Road ²					
-without signal	38.6/E	41.6/E	42.8/E	46.9/E	4.2/5.3
-with signal	10.1/B	11.6/B	10.6/B	11.8/B	0.5/0.2

Source: Kunzman, 2010.

1: Existing delay and LOS are not shown for the two project driveways because they do not yet exist in their planned configuration.

2: Delay and LOS for Watkins Drive/Big Springs Road are shown with two scenarios, one assuming the intersection remains in its current state and one assuming the signal improvements discussed below are implemented.

Impact 3.13-1: The project would contribute traffic to the intersection of Watkins Drive and Big Springs Road, which would degrade service at that intersection from an acceptable level to an unacceptable level. *Impact Determination: Significant and Unavoidable*

As shown in Table 3.13-6, project-related traffic is anticipated to increase delay at all studied intersections. For all but the Watkins Drive/Big Springs Road intersection, the incremental delays are less than the corresponding significance thresholds (10.0 seconds for the intersections operating at LOS A or B, and 8.0 seconds for the intersection operating at LOS C). Therefore, impacts are less than significant at all but the Watkins Drive/Big Springs Road intersection, and mitigation is not warranted.

At the Watkins Drive/Big Springs Road intersection, the projected increases in delay exceed the significance thresholds noted above (2.0 seconds for the projected LOS E condition). Because the significance threshold is exceeded, this is a significant impact.

The LRDP EIR recognized traffic impacts on the Watkins Drive/Big Springs Road intersection as significant and unavoidable. While the LRDP EIR evaluated this impact in the context of LRDP buildout, the analysis in this EIR demonstrates that the threshold would be exceeded with opening of the Glen Mor 2 apartments. Project-specific Mitigation Measure TR 1, below, reiterates UCR's

commitment to participate in the cost of signalization and makes implementation of this commitment a project-specific mitigation measure for the Glen Mor 2 project.

TR 1: Contribute a proportional share of funds to the City of Riverside to install a traffic signal at the intersection of Watkins Drive and Big Springs Road.

The University will pay the City the proportional share of the actual cost of the traffic signal at the time when implementation of the traffic signal is reasonably certain, and no later than the start of installation of the traffic signal. The University's proportional share will be based on the Glen Mor 2 project's total traffic contribution to the intersection of Watkins Drive and Big Springs Road, which is currently anticipated to be 6.6 percent, as determined by the Traffic Impact Analysis prepared for the project (Kunzman 2010 [Table 9, Project Fair Share Traffic Calculations, page 40]).

Level of Significance after Mitigation

Impacts would be less than significant with installation of a traffic signal at the Watkins Drive/Big Springs Road intersection. Funding and installation of a traffic signal at this location is under the control of the City. Because UCR does not control the nature and timing of such an improvement, the proposed mitigation measure represents the full extent of mitigation available to UCR. Until the signal is installed, ambient growth in traffic and the number of trips associated with the Glen Mor 2 project is projected to contribute to degraded operation of this intersection. The university believes that this improvement can and should be implemented by the City. However, because this improvement is not the responsibility or within the jurisdiction of the university, the university does not have the responsibility or the jurisdiction to satisfy TR 1. The impact remains significant and unavoidable.

The LRDP EIR deemed this impact significant and unavoidable because of the LRDP-related impacts at several intersections, including the Watkins Drive/Big Springs Road intersection. A statement of overriding considerations was adopted to address the impacts.⁶ However, as noted before, the campus lacks control over the recommended mitigation measures.

The Glen Mor 2 Student Apartments Project represents a change with respect to proposed land uses (i.e., the establishment of a parking structure where recreational fields were considered in the LRDP EIR). The project-level analysis of traffic impacts shows that with the proposed parking structure, impacts on the Watkins Drive/Big Springs Road intersection would be not be more severe than those identified in the LRDP EIR.⁷ Finally, there is no new information available that would suggest any alternate means of mitigation. The statement of overriding considerations and findings prepared for the LRDP EIR relative to impacts on the Watkins Drive/Big Springs Road intersection remain valid.

⁶ See pages 93–95 of the *California Environmental Quality Act Approval in Connection with the University of California, Riverside 2005 Long-Range Development Plan*, November 2005.

⁷ The LRDP EIR predicted future service levels of LOS E in the AM peak hour and LOS F in the PM peak hour at this intersection (see LRDP EIR Table 4.14-20, page 4.14-41, and Table 4.14-23, page 4.14-53).

Impact 3.13-2: Project construction would generate construction-related vehicle trips that would result in a temporary impact on traffic conditions in the local circulation system.***Impact Determination: Less than Significant with Implementation of LRDP EIR Measure***

Impact 4.14-2 of the LRDP EIR identifies a significant and unavoidable impact due to the presence of construction vehicles from potentially overlapping on-campus construction projects, which would affect the local on- and off-campus circulation system on a temporary basis. The impact is discussed for campus development in general but does not provide project-specific analysis. LRDP Programs and Practices 4.14-2 requires the campus to assess construction schedules of major projects periodically to determine the potential for overlapping construction activities. Consideration for this prospective overlap, as well as the potential overlap with off-campus construction, is provided below in the cumulative impact analysis for traffic.

As stated in the LRDP EIR for campus development in general, the project entails construction traffic that would use on- and off-campus roads on a temporary basis. One stage of project construction, demolition of the on-site residence, may entail traffic (haul trucks) exiting the site from the driveway of the residence and then traveling north on Valencia Hill Drive, turning west on Watkins Drive, and west on Blaine Street. This haul traffic, which would be limited to the demolition phase, would be minor in scale and duration. Demolition, including remediation of the asbestos and lead paint, is estimated to take approximately 10 to 14 working days. Haul traffic is estimated at four to five truck loads, which would occur later in the demolition phase. After the demolition is complete, construction hauling would use the primary haul route shown in Figure 3.13-2, which would traverse on- and off-campus areas, following Big Springs Road, Campus Drive, Aberdeen Drive, Linden Street, Iowa Avenue, Martin Luther King Boulevard, and Canyon Crest Drive. This route would be used for delivering equipment and materials to the project site and hauling excavated material to the temporary stockpile location.

The heaviest construction traffic is anticipated during the excavation phase, with approximately 178 daily truck trips anticipated to remove excess soil during portions of the 3-month initial site preparation phase. These trips would be spaced out throughout the 8-hour workday, averaging 22.25 trips per hour. Three of the intersections along this route are included in the study area for the quantified analysis of the project's operational impacts: Campus Drive/Big Springs Road, Campus Drive/Aberdeen Drive, and Linden Street/Aberdeen Drive. All of these intersections are currently operating at either LOS A or LOS B during the morning and evening peak hours. While the temporary addition of construction-related trips may be an inconvenience along the designated route, the added volumes would not cause the affected intersections to degrade to an unacceptable LOS or significantly affect traffic along the affected road segments. This impact is less than significant. Project-level mitigation is not necessary.

Criteria 2: Would the project substantially increase hazards due to a design feature or incompatible uses?**Impact 3.13-3: The project would not construct any permanent features or contribute incompatible uses that would cause a traffic-related hazard. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure***

Vehicular access to the project site would be from Big Springs Road, which currently provides access to surface parking. Two driveways currently provide access to Parking Lot 14 along Big Springs Road. The westernmost of the two driveways would be maintained with the project. The east



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Figure 3.13-2
Construction Haul Route
Glen Mor 2 Student Apartments

driveway and the associated median opening in Big Springs Road would be eliminated. Two new driveways would be established on the north side of Big Springs Road, one at the main project entry court (with modifications to shorten the existing Big Springs Road median [this driveway would allow entry to the parking structure and serve as the sole point of egress]) and one at the southeast corner of the parking structure (entry only). The main driveway at the entrance court would provide full access, while the east driveway would serve only as a second entrance to the parking structure. The project traffic engineer has recommended a stop control for exiting traffic at the entry court and evaluation of final design plans for conformance to accepted sight distance standards. LRDP Program and Practice 4.14-4 establishes a mechanism to ensure such elements are incorporated into detailed construction plans and the built project. Appendix F provides a cross-reference for implementation of this project-specific LRDP measure for the Glen Mor 2 project. With implementation of LRDP Programs and Practices 4.14-4, this impact is less than significant.

Impact 3.13-4: Project construction would result in short-term hazards due to temporary lane closures on Big Springs Road and Valencia Hill Drive and the presence of construction vehicles and equipment on local roads. *Impact Determination: Less than Significant with Mitigation Incorporated*

Project construction traffic and the proposed haul route are discussed above under Impact 3.13-2. The proposed project improvements include modifications to driveways and medians along the on-campus segment of Big Springs Road, a utility connection in Valencia Hill Drive, new sidewalk along the Valencia Hill Drive frontage, and extension of the existing culvert in the arroyo at Valencia Hill Drive. Implementation of these elements of the proposed project may require temporary lane closures to accommodate construction activity safely and prevent conflict with non-project-related traffic. The identified encroachments are not expected to require any full road closures, and no other lane closures are anticipated. Lane closures could also affect bicycle and pedestrian travel along these routes.

Pedestrian routes from the housing precinct to the campus core involve substantial volumes of pedestrian activity, with pedestrians crossing North Campus Drive between Big Springs Road and Aberdeen Drive. Pedestrian routes from on-campus and off-campus housing areas also cross Linden Street at Aberdeen Drive and Linden Street at Canyon Crest Drive. These locations of heavy pedestrian activity are along the proposed haul and delivery routes.

LRDP Programs and Practices 4.14-5, 4.14-6, and 4.14-8 require at least one unobstructed lane in both directions during project construction, to the extent feasible, with requirements for advisories, traffic control measures, and the identification of alternate routes if closures are required or if traffic is restricted to a single lane. With these measures incorporated, this impact was identified as less than significant in the LRDP EIR (Impact 4.14-5 of the LRDP EIR). Appendix F acknowledges the applicability of these LRDP programs and practices to this project. Considering the number of potential closures, the substantial amount of pedestrian activity, and the inclusion of both on-campus and off-campus locations, project-specific Mitigation Measure TR 2, which requires preparation of a traffic control plan prior to the start of construction, is included below. This will provide a mechanism to ensure that potential closures are identified, appropriate measures are in place at the required locations, and measures are implemented at the appropriate times.

TR 2: Prepare a traffic control plan for project construction.

Prior to commencement of construction, the project construction contractor will prepare a traffic control plan for the project and submit it to the UCR Office of Design and Construction for approval. As part of its review of the traffic control plan, the UCR Office of Design and Construction will consult with UCPD, EH&S, RFD, and RPD to disclose roadway closures and identify alternative travel routes, if necessary. The UCR Office of Design and Construction will consult with the City Public Works Department to obtain its concurrence regarding the adequacy of traffic control along off-campus roads. The traffic control plan will identify lane closures and show the limits of construction work, areas with temporary restriping of lanes and crosswalks, flagging operations, signage, alternate routes, and other actions necessary to maintain safe traffic conditions for vehicles, bicyclists, and pedestrians. The plan shall include consideration of emergency vehicle use of the paved drive along the north side of the Great Glen Arroyo, adjacent to the Pentland Hills and Glen Mor 1 complexes. Any lane closures specified in the traffic control plan will be announced on UCR's web site (www.community.ucr.edu).

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.13-5: Project construction would result in a short-term pedestrian hazard due to closure of pathways through the project site. *Impact Determination: Less than Significant with Mitigation Incorporated*

The project may entail closure of existing paved and unpaved pedestrian paths, which are presently used for movement throughout the residential precinct, and also to access Parking Lot 14 and the campus core. Alternate routes for pedestrian movement are available along paths through the Pentland Hills complex, the Veitch Student Center, and the open space areas adjacent to the Lothian and Aberdeen/Inverness residence halls as well as along Aberdeen Drive. While these alternate routes may represent a temporary inconvenience, they would be able to accommodate safe pedestrian movement during construction.

LRDP Program and Practice 4.14-6 states that for any construction-related closure of pedestrian routes, the campus shall provide alternate routes with appropriate signage and provide curb cuts and street crossings to ensure that the alternate routes are accessible. With this measure incorporated, this impact was identified as less than significant in the LRDP EIR (Impact 4.14-6 of the LRDP EIR). Mitigation Measure TR 2 would ensure safe pedestrian access along roadways that would be affected by project construction. Because of the extent and duration of potential pedestrian route closures, a project-specific pedestrian access plan is required to provide a project-level mechanism that ensures that potential closures are identified, appropriate measures are in place at the required locations, and measures are implemented at the appropriate times, as described under Mitigation Measure TR 3, below.

TR 3: Prepare a pedestrian access plan for project construction.

Prior to commencement of construction, the project construction contractor will prepare a pedestrian access plan for pathways through and adjacent to the project site that are affected by project construction activities and submit it to the UCR Office of Design and Construction for review and approval. The pedestrian access plan will show alternate routes for all affected pathways and signage announcing closures and alternate routes to pedestrians.

Level of Significance after Mitigation

Impacts would be less than significant.

Criteria 3: Would the project result in inadequate emergency access?

Impact 3.13-6: Project construction may entail short-term use of emergency access routes. Impact Determination: Less than Significant with Mitigation Incorporated

Once completed, the Glen Mor 2 project would include a loop drive and internal paths, thereby providing emergency access to each building. The new path along the western boundary of the site would improve emergency access to Lothian Hall by replacing an existing turf block drive.

Construction activity may involve use of the existing emergency drive on the north side of the arroyo and temporary lane closures on both on-campus and off-campus roads, which could affect the movement of emergency vehicles. LRDP Programs and Practices 4.14-8 requires the UCR Office of Design and Construction to disclose any roadway closures to UCPD, EH&S, and RFD and consult with each department regarding alternate routes. This consultation has been incorporated into Mitigation Measure TR 2, described above. Implementation of Mitigation Measure TR 2 would ensure compliance with LRDP Programs and Practices 4.14-8. It also ensures that project construction will not result in a significant obstruction of emergency access.

Level of Significance after Mitigation

Impacts would be less than significant.

Criteria 4: Would the project result in inadequate parking capacity?

Impact 3.13-7: The project would provide an adequate number of parking spaces to serve the proposed facilities. Impact Determination: Less than Significant with Mitigation Incorporated

The project entails construction of a multi-level parking structure with 597 parking spaces. These spaces are intended for residents of the housing precinct, including the residence halls of Aberdeen-Inverness, Lothian, and Pentland Hills as well as the Glen Mor 1 and the proposed Glen Mor 2 student apartments. The parking structure would replace part of Parking Lot 14, which is a resident lot that serves the existing residence halls and apartments in the immediate area. Lower Parking Lot 14 would be completely replaced by the parking structure, thereby removing 408 existing spaces. Of the 78 spaces in upper Parking Lot 14, 16 would be lost from realignment of the driveway, leaving 62 spaces in this western lot. Table 3.13-7 shows the number of existing and proposed resident parking spaces for the project site.

Table 3.13-7. On-Site Addition of Parking

	Upper Lot 14	Lower Lot 14	Parking Structure	Total
Existing Parking Spaces	78	404	--	482
Proposed Parking Spaces	62	--	579 ¹	641
Net Change	-16	-404	+579 ¹	+159

¹ Eighteen spaces would be assigned for visitors, leaving 579 spaces available for residential permit holders

As shown in Table 3.13-7, the project would result in a net gain of 159 parking spaces for resident students. The project would also entail provision of four parking spaces adjacent to the Executive Retreat, which would be restricted by permit to authorized users, including overnight guests, event attendees needing handicapped parking, and drivers of event-supporting delivery vehicles, such as catering trucks, who may need temporary use. Temporary parking areas for delivery vehicles would be provided adjacent to the Food Emporium.

Parking for the project-related student housing precinct is provided in Parking Lots 14, 21, and 22, as shown above in Table 3.13-8.

Table 3.13-8. Proposed Parking Inventory for Student Housing

Parking Lot	Number of Spaces
Lot 14	62
Glen Mor 2 Parking Structure	579
Lot 21	429
Lot 22	346
Total for Housing Precinct	1,416

As discussed above in Section 3.13.2, the LRDP establishes space/student parking ratios of 1:4 for residence halls and 1:2 for apartments. The project would add parking spaces to the housing precinct, but would also add demand by providing new apartment-style housing units. Table 3.13-4 (page 3.13-5) shows an existing surplus of 154 spaces in the housing precinct. Below, Table 3.13-9 shows demand after project implementation.

Table 3.13-9. With-Project Parking Demand for Student Housing Precinct

Residential Development	Occupancy ¹ (beds)	LRDP Parking Ratio	Parking Demand
Aberdeen-Inverness	998	1:4	250
Lothian	1,089	1:4	272
Pentland Hills	1,324	1:4	331
Glen Mor 1	499	1:2	250
Glen Mor 2	810	1:2	405
Total Demand for Precinct			1,508
Total Inventory for Precinct			1,416
Parking Deficit for Precinct			92

Source: Personal communication from Susan Marshburn, December 8, 2010.

¹Occupancy for existing facilities reflects fall 2010 statistics.

As shown above, with the addition of Glen Mor 2 parking demand to the 2010 baseline condition, the housing precinct's residential parking supply would be 92 spaces short of the number of spaces required, based on the LRDP parking ratios. This is a significant impact, warranting mitigation. Campus representatives have indicated that several rooms in the existing residence halls within the project-related housing precinct are operating with a higher occupancy than intended in their original design, with double-occupancy rooms outfitted with an additional bed to serve as triple-occupancy rooms. The occupancy numbers and associated parking demand shown in Table 3.13-9 reflect the number of beds currently provided in these respective facilities and not their intended residential capacity. The campus has indicated that the opening of Glen Mor 2 would relieve the

overcrowded conditions that led to the need for increased occupancy at the other residential facilities within this precinct. Once Glen Mor 2 is occupied, the additional beds in the double-occupancy rooms will be removed. Mitigation Measure TR 4 commits the campus to limiting occupancy within this housing precinct so that the number of available assigned parking spaces for housing is not exceeded and monitoring the parking space and bed counts on campus to ensure that parking is provided in the housing precinct in accordance with adopted LRDP ratios.

TR 4: Balance housing precinct occupancy and parking supply.

The UCR Office of Housing Services will establish a reporting program to document conformance to LRDP parking ratios for the housing precinct, including Aberdeen-Inverness, Lothian, Pentland Hills, Glen Mor 1, and Glen Mor 2. Compliance documentation shall disclose (1) bed counts for the fall quarter for residence halls and apartments, (2) the corresponding number of parking spaces required (at ratios of one for every four residence hall beds and one for every two apartment beds), and (3) the number of parking spaces provided. Compliance documentation shall be filed with the UCR Office of Design and Construction on an annual basis, within 2 weeks of the fall quarter move-in date. No parking permits will be issued beyond the number of spaces available.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 3.13-8: The project would provide adequate parking for construction workers during the construction period. *Impact Determination: Less than Significant with Implementation of LRDP EIR Measure*

The design team for the Glen Mor 2 project includes a construction management firm. The construction management specialists have evaluated the proposed site improvements and estimated the number of workers that will be required for each stage of construction. The number of construction workers that will be required on the site is estimated to range from 25 during the initial clearing and site-preparation phase to 275 during building construction. It is currently anticipated that all construction staging and worker parking can be accommodated within the Glen Mor 2 site. In the event that off-site worker parking is required, the contractor could arrange for worker parking to be accommodated temporarily at several locations surrounding the campus, with the contractor providing shuttles to and from the work site in accordance with LRDP Mitigation Measure 4.14-11.

Criteria 5: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

For a discussion of the project's impacts on bicycle facilities within roads affected by project construction, see Impact 3.13-4, above. For a discussion of the project's impacts on pedestrian facilities, see Impact 3.13-5, above. The completed Glen Mor 2 project will enhance bicycle and pedestrian circulation by providing new sidewalks, paths, and bridges. Aside from the temporary construction impacts noted above, the project would not adversely affect bicycle or pedestrian facilities, nor would it conflict with any policies, plans, or programs related to bicycle and pedestrian travel. A discussion of impacts on public transit is provided below.

Impact 3.13-9: The project would not conflict with plans, policies, or programs regarding public transit and would not affect transit facilities. *Impact Determination: Less than Significant*

The LRDP EIR identifies various transportation planning strategies to promote public transit as the campus continues to grow. The proposed project would increase the number of on-campus residents who would use public transit, as anticipated in the LRDP. This would not present an unanticipated burden on transit facilities. No bus or shuttle stops would be removed or otherwise affected by project construction. Routes for project construction traffic, as discussed in Impact 3.13-2, would partially overlap with RTA Routes 1, 10, 51, 53, and 204. However, the project construction routes would not require any bus stops to be closed, and the additional trucks on the road throughout the day would not lead to bus delays or present any other significant impediments to timely operations on these routes. Therefore, this impact is less than significant.

3.13.5 Cumulative Impacts

Intersection Operations

The traffic impact analysis prepared for the project incorporated an analysis of the project's contribution to cumulative operational impacts on the studied circulation system. The year 2015 was identified as the future cumulative analysis year because that is the horizon year of the LRDP. This was also deemed a reasonable future analysis year because the study area is largely built out, and major changes in non-project-related traffic conditions are not anticipated. As discussed in Section 3.0.4 of this EIR, the cumulative analysis for operational traffic was conducted based on the projections method rather than the list method; therefore, trips associated with the cumulative projects were not quantified for this analysis. Future conditions at the studied intersections were estimated by adding traffic trips, assuming a 1.7 percent annual growth rate, the rate used in the LRDP EIR, which was based on SCAG modeling data for the area surrounding UCR.

Cumulative regional growth is anticipated to increase ambient traffic by a factor of 1.7 percent, which would increase intersection delay accordingly. The project would contribute a similar amount of trips to area intersections, as anticipated under the opening-year scenario. Table 3.13-10 compares the 2015 conditions without the project with the 2015 conditions with the project.

Table 3.13-10. Opening-Year With- and Without-Project Intersection Operations

Intersection	2015 Without-Project Delay/LOS		2015 With-Project Delay/LOS		Project Delay
	Morning	Evening	Morning	Evening	AM/PM
1. Aberdeen Drive/Linden Street	11.7/B	24.9/D	12.0/B	29.8/D	0.3/4.9
2. Aberdeen Drive/Campus Drive	12.2/B	17.0/C	12.5/B	19.2/C	0.3/2.2
3. Campus Drive/Big Springs Road	9.9/A	16.9/C	10.2/B	20.3/C	0.3/3.4
4. Campus Drive/Eucalyptus Drive	12.0/B	16.5/C	12.2/B	17.3/C	0.2/0.8
5. West driveway/Big Springs Road ¹	--	--	11.8/B	15.2/C	--
6. East driveway/Big Springs Road ¹	--	--	10.5/B	9.4/A	--
7. Valencia Hill Drive/Big Springs Road	10.9/B	11.4/B	11.1/B	12.2/B	0.2/0.8
8. Watkins Drive/Big Springs Road					
-without signal improvements	61.6/F	174.7/F	64.2/F	178.8/F	2.6/4.1
-with signal improvements	10.9B	14.3/B	11.0/B	14.8/B	0.1/0.5

Source: Kunzman, 2010.

¹ Existing delay and LOS are not shown for the two project driveways because they do not yet exist

As shown in Table 3.13-10, all studied intersections are anticipated to operate at acceptable levels in the 2015 scenario except the Watkins Drive/Big Springs Road intersection, which is the same intersection where the project-level impact was identified under Impact 3.13-1, above. This intersection is projected to worsen to LOS F during both the morning and evening peak periods, independent of project traffic, if the recommended signal improvement is not implemented. This is a significant cumulative impact. The project's contribution to this impact would also be considered cumulatively considerable because the contribution of 2.6 and 4.1 seconds of delay exceeds the threshold of 1.0 second of delay for LOS F intersections.

Implementation of Mitigation Measure TR 1, payment to the City of a proportional share of the actual cost of signaling the Watkins Drive/Big Springs Road intersection, would address the project's contribution to this cumulative impact. Table 3.13-10 also shows that if the signal improvements at this affected intersection are implemented, the intersection would operate at LOS B during the morning and evening peak hours in the 2015 scenario without the addition of project-related traffic. The project's contribution during this scenario would be below the 10.0-second delay threshold for LOS B intersections. However, funding and installation of a traffic signal at this location is under the control of the City, as discussed above. Because UCR does not control the nature and timing of such an improvement, the proposed mitigation measure represents the full extent of mitigation available to UCR.

Construction Traffic

Given the preliminary construction schedules for the cumulative projects listed in Section 3.0.4, there is a chance that Glen Mor 2 construction may overlap with construction of three on-campus projects (the EH&S expansion, the Student Recreation Center expansion, and the Health Science Teaching Center) and one off-campus project (portions of the Perris Valley Line Project located near the project site). Because of the location of the Perris Valley Line Project, it is unlikely that construction traffic would use the same routes identified for Glen Mor 2 construction, but the on-campus projects could involve overlapping construction traffic routes. Concurrent on-campus

construction traffic could present a cumulative hazard to vehicles, bicyclists, and pedestrians for the duration of the respective construction processes to which the project would contribute. Implementation of LRDP EIR Programs and Practices 4.14-2 requires the campus to assess construction schedules of major projects periodically to determine the potential for overlapping construction activities and adjust construction schedules, work hours, or access routes to the extent feasible to reduce construction-related traffic congestion. Implementing this measure would reduce the potential for significant hazards and a cumulative effect on emergency access through the campus. Additionally, the traffic control plans prepared pursuant to Mitigation Measures TR 2 and TR 3 would minimize construction-related traffic hazards for the Glen Mor 2 project and ensure that the project's contribution to this cumulative impact would be less than significant. No additional mitigation is required.

One on-campus construction project (i.e., the Health Sciences Teaching Center) is located near the Glen Mor 2 project. Therefore, workers may need to use the same parking areas. However, because of the limited scale of the Health Sciences Teaching Center construction effort, the number of workers on this project would be limited. This would not represent a significant cumulative impact on on-campus construction-related parking. In the event that off-site worker parking is required for the Glen Mor 2 project and one or more of the other cumulative projects, workers for the different projects may end up sharing off-site parking areas on a temporary basis. This potential overlap would be addressed in the construction planning for the respective projects, with contractors identifying areas large enough to accommodate the total number of workers.

Parking

Parking for housing uses on the UCR campus is managed separately from general parking. None of the cumulative projects listed in Section 3.0.4 involves on-campus housing facilities. Therefore, there is no potential contribution to a cumulative impact from increased demand for housing parking. None of the cumulative projects involves disturbance footprints that would displace existing or proposed parking facilities for housing. There are no potential cumulative impacts related to parking.

Section 3.14
Utilities and Service Systems

3.14.1 Introduction

This section describes the affected environment and regulatory setting pertaining to utilities and service systems, particularly those related to water and sewer services, and describes the impacts that would result from implementation of the project. Where significant impacts are identified, this section also identifies mitigation measures that would reduce these impacts.

As a result of the scoping process for this EIR, this section focuses on the adequacy of the on-campus water system to provide domestic water service and the on- and off-campus sewer pipelines to accept project wastewater flows. Stormwater drainage facilities are discussed in Section 3.8, Hydrology and Water Quality (Impact 3.8-4), and water system adequacy for fire-flow requirements is addressed in Section 3.11, Public Services (Impact 3.11-3).

No comments were received in response to the NOP relative to the focus topics (i.e., water and sewer service), nor were any concerns in this regard raised at the public scoping meeting. The City's letter in response to the NOP notes requirements for the payment of sewer capacity charges, permits to connect to the City's trunk sewer, and monthly sewer service charges. The sewer capacity charge and monthly sewer fees are administrative activities, with no associated potential environmental impacts. Obtaining a City permit to connect to the trunk sewer, as well as a permit for street encroachments, is noted as a potential responsible agency action in Chapter 1, Introduction (page 1-5).

3.14.2 Environmental Setting

Because this analysis focuses on the capacity of the water distribution system and the sewer collection system, the characterization of the setting is limited to these aspects of the utility system. Additional information regarding the environmental setting for utilities and service systems is provided in Section 4.15.2 of the LRDP EIR (beginning on page 4.15-1).

The City provides water and sewer service to the campus. Water service to the East Campus is provided by a City-operated 5-million-gallon reservoir located south of University Avenue, on the east side of Interstate 215/State Route 60. Water is pumped through a 15-inch City main to a campus pump station, which pumps water through a 12-inch campus main to two storage tanks in the hills in the south part of the campus. These two tanks have a combined capacity of approximately 1.05 million gallons and provide storage for both domestic water and fire flows. Water stored in the tanks is delivered throughout the campus by a network of 6- and 8-inch pipelines. Existing service lines to the Lothian residence hall and the Glen Mor 1 student apartments provide proximate points of connection for the Glen Mor 2 project.

The connection to the City sewer collection system is provided by a 15-inch City-maintained trunk sewer that generally follows the alignment of Big Springs Road on the south side of the Glen Mor 2 site, then continues through the campus, generally along North Campus Drive, to University Avenue at Canyon Crest Drive. The City completed improvements to the trunk sewer system downstream of the campus after review of the Spruce Street Sewer Capacity Study (PBS&J 2002). These off-campus

improvements addressed wastewater conveyance requirements for projected buildout conditions, including a campus population of 40,000 (25,000 students [with 50 percent living on campus] and 15,000 faculty members and visitors), which is consistent with the 2005 LRDP. The Spruce Street Sewer Capacity Study also identified a future need for upgrades to the 15-inch line on campus to serve buildout development. The campus estimates that existing discharges to this line are at a rate of approximately 2.5 cfs. Discharges from off-campus areas are at a rate of approximately 1.3 cfs.¹ The existing 15-inch trunk sewer has a capacity of 8.9 cfs (Brown pers. comm.).

3.14.3 Regulatory Framework

There are no federal, state, or local regulations that govern pipeline capacity issues, which are the focus of this analysis. Information regarding the various federal, state, and local regulations that govern the full range of issues relevant to utilities and service systems on campus is provided in Section 4.15.3 of the LRDP EIR, beginning on page 4.15-9.

3.14.4 Impact Analysis

Methodology

The analysis of water system capacity is based on an evaluation by the campus Physical Plant staff (Deal pers. comm.). The analysis of sewer system capacity is based on an evaluation by the UCR Office of Design and Construction staff, in consultation with the Glen Mor 2 design team's consulting engineers and the City's Public Works Department (Brown pers. comm.).

Significance Criteria

The criteria for analyzing the project's impacts on utilities and service systems are based on Appendix G of the State CEQA Guidelines. Considering the nature of the proposed project, the project setting, the programmatic impact analysis provided in the LRDP EIR, and available information relevant to the project and the project site, the proposed Glen Mor 2 Student Apartments Project does not present the potential for significant impacts for the significance criteria outlined below.

- Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Wastewater treatment is provided by the City's Regional Water Quality Control Plant. The City is responsible for meeting federal and state requirements, including applicable requirements of the Santa Ana Regional Water Quality Control Board. The project is consistent with the scale of development analyzed in the LRDP EIR. It would not generate a volume of wastewater or create a new source of wastewater that was not considered in the LRDP EIR. The proposed project would not alter the less-than-significant impact conclusion of the LRDP EIR (LRDP EIR, page 4.15-21). This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

¹ Based on residential flows to meter locations 9 and 10, as reported in the City's Spruce Street Sewer Capacity Study (Riverside 2002, Table 5-2). This figure is conservative because the tributary area to meters 9 and 10 includes off-campus residential uses west of Canyon Crest Drive that do not contribute flows to the on-campus segment of the sewer line.

- Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The proposed project is consistent with the scale of development analyzed in the LRDP EIR and includes the water conservation and planning measures identified in LRDP Planning Strategy Conservation 5 and LRDP Programs and Practices 4.15-1(b) through (d), which identify a series of conservation measures for design, maintenance, and operation of campus facilities.² On the basis of these design, maintenance, and operation provisions, the LRDP EIR concluded that development in accordance with the LRDP would not require construction of new or expanded water treatment facilities. The City did not provide any updated information in response to the NOP for this project indicating that water treatment capacity may be an issue given the current conditions. This impact is adequately addressed in the LRDP EIR, and no further analysis is required. See the second bullet below for information regarding wastewater treatment capacity.

- Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The LRDP EIR (page 4.15-16) incorporates a water supply assessment prepared by the campus water purveyor, the City of Riverside. The supply assessment supports the determination that implementation of the 2005 LRDP would not require new or expanded water supply entitlements, and the program-level impact would be less than significant. The proposed project is consistent with the scale of development analyzed in the LRDP EIR and incorporates the water conservation measures noted above. The City did not provide any updated information in response to the NOP for this project indicating that water supply may be an issue given the current conditions. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

- Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The LRDP EIR (page 4.15-24) concludes that the projected increase in wastewater, generated by implementation of the LRDP, would not exceed available capacity at the City's regional treatment facility, which currently receives campus wastewater (citing 8 million gallons per day [mgd] in excess capacity at the time of the LRDP, with an incremental flow of 0.9 mgd projected from LRDP buildout). On this basis, the program-level impact was deemed less than significant. The proposed student housing development is consistent with the scale of development analyzed in the LRDP EIR and would not increase wastewater generation beyond levels assumed in the LRDP EIR. The City did not provide any updated information in response to the NOP for this project indicating that wastewater treatment capacity may be an issue given the current conditions. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

² In furtherance of the target of LEED Gold certification, the project would incorporate water-saving design features, which are estimated to produce a 30 percent reduction in domestic water consumption. This can be attributed to the plumbing fixtures in the new buildings.

- Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Solid waste generated during construction and operation of proposed campus-wide development under the LRDP would be adequately accommodated in the Badlands Landfill (LRDP EIR, page 4.15-20). Because the project is consistent with the scale of development analyzed in the LRDP EIR, it would not increase solid waste generation beyond levels assumed in the LRDP EIR. There are no known changes with respect to available capacity at the Badlands Landfill. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

- Would the project comply with applicable federal, state, and local statutes and regulations related to solid waste?

The LRDP EIR (page 4.15-20) concludes that implementation of the 2005 LRDP would comply with all applicable federal, state, and local statutes and regulations related to solid waste and that this impact would be less than significant. Because the project is consistent with the scale of development analyzed in the LRDP EIR, the project would not alter solid waste generation or diversion rates assumed in the LRDP EIR. This impact is adequately addressed in the LRDP EIR, and no further analysis is required.

The following Appendix G significance criterion is addressed in the Hydrology and Water Quality (Impact 3.8-4) and Biological Resources (Impact 3.3-8, page 3.3-9) sections of this EIR:

- Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The following Appendix G significance criterion is addressed in the impact analysis presented below. Implementation of the Glen Mor 2 Student Apartments Project would result in a significant impact if it would

1. Create other utility and service system impacts.

As explained below, the analysis of other utility and service system impacts focuses on the capacity of the campus domestic water system and the wastewater conveyance system.

LRDP MMRP Measures

The LRDP EIR identifies a series of Programs and Practices and Mitigation Measures that are relevant to utilities and service systems. The applicable measures are identified in Appendix F of this EIR. These measures are considered part of the project for purposes of this analysis. In general, the measures address the evaluation of water and sewer system capacity as development of the campus proceeds as well as design and management practices to reduce campus domestic water consumption (and resultant wastewater discharges). Where necessary, project-specific measures related to LRDP EIR measures that must be implemented in the final design and construction of the Glen Mor 2 Student Apartments Project are presented in this EIR as project-specific mitigation.

Impacts and Mitigation Measures

Criteria 1: Would the project create other utility and service system impacts?

Impact 3.14-1: The existing campus domestic water system has adequate storage and conveyance capacity to serve the incremental demand of the Glen Mor 2 project. *Impact Determination: Less than Significant*

The utility design plans for the Glen Mor 2 project include connections to the existing campus domestic water system at two locations. One connection would be made at an existing 8-inch line off the northeast corner of the Lothian residence hall, and the second would be made at the south edge of the Glen Mor 1 site. The pipeline would extend across the arroyo by being attached to the underside of a proposed pedestrian bridge. A loop with laterals to each building from the connection points (with pipe sizes ranging from 4 to 8 inches in diameter) would be established within the developed portions of the site.

In accordance with LRDP Program and Practice 4.15-1(a), an analysis of the domestic water service on campus has been conducted as part of the project design process. The campus's Physical Plant staff has determined that the existing campus pumping facilities, distribution system, and storage facilities are adequate to serve the Glen Mor 2 project as proposed (Deal pers. comm.). This impact is less than significant, and no mitigation is necessary.

Impact 3.14-2: The existing on-campus sewer main has adequate conveyance capacity to serve the incremental demand of the Glen Mor 2 project. *Impact Determination: Less than Significant.*

The utility design plans for the Glen Mor 2 project include a new 8-inch sewer that would connect to the existing 15-inch line in Big Springs Road in the vicinity of the new entry court. On-site laterals would convey flow from each building to the new 8-inch line.

The design team has evaluated the existing campus sewer system and identified 21 existing campus buildings that discharge to the 15-inch sewer in Big Springs Road. These include 15 points associated with academic, research, administration, and physical plant functions and six points associated with housing (one for Lothian, two for Pentland Hills, and three for Glen Mor 1). The total peak flow to the 15-inch sewer from these existing facilities is estimated to be 2.5 cfs (Brown pers. comm.).

The existing City-maintained 15-inch sewer in Big Springs Road has a capacity of 8.9 cfs (Brown pers. comm.). In addition to the campus discharges noted above, this sewer also carries wastewater from the residential and limited commercial uses in the nearby off-campus area. Information in the City's Spruce Street Sewer Capacity Study (PBS&J 2002, Table 5-2) suggests that the tributary off-site peak discharges to this line are at a rate of approximately 1.3 cfs.

Estimated peak sewer discharge for the Glen Mor 2 project is expected to be 1.25 cfs (Brown pers. comm.). When combined with off-campus (1.3 cfs) and existing on-campus peak discharges (2.5 cfs), the total peak discharge to the 15-inch line would be 5.05 cfs. This is less than the line's capacity of 8.9 cfs. On that basis, the existing line would provide adequate capacity. This impact would be less than significant, and no mitigation is necessary.

3.14.5 Cumulative Impacts

This analysis focuses on incremental demands upon domestic water and sanitary sewer capacity within the East Campus. One of the cumulative campus projects is the East Campus Infrastructure Phase 2 Project, which will extend new sewer and water lines to serve future development in the area north of North Campus Drive. At this time, only one building, Material Science and Engineering, which is currently under construction, is contemplated for this area. This building was considered in the existing demand assumptions for the current domestic water and sewer capacity analyses and will not contribute to cumulative impacts.

LRDP Amendment No. 2 project and the related future School of Medicine would be situated on the West Campus and would not contribute to demands on East Campus water or sewer systems. The two off-campus residential projects would not be tributary to the on-campus sewer main (PBS&J 2002, Figure 5); they would be served by the City's domestic water system. The Perris Valley Line Project is a transportation project involving modification of existing facilities and operations, with no associated water or sewer demands within the campus environs.

While located on the East Campus, the Barn Project would entail nominal wastewater generating activities. Discharges of wastewater would be conveyed to a downstream segment of the City's trunk sewer in University Avenue that has been upgraded in accordance with the Spruce Street Sewer Capacity Study. This project would not contribute to cumulative impacts related to sewer pipeline capacity. The EH&S, Student Recreation Center, and Health Sciences Teaching Center projects would redevelop and/or expand existing uses, with nominal wastewater generating components.³ Therefore, these on-campus cumulative projects would not place substantial additional demands on the sewer collection system.

The Barn, EH&S expansion, Student Recreation Center expansion, and Health Sciences Teaching Center projects will all place incremental demands on the East Campus domestic water system. These projects are in the early phases of design, with no firm details currently available regarding potential incremental water demands. Information in the 2002 East Campus infrastructure study indicates that the existing Barn, EH&S, Student Recreation Center facilities, and Computer Statistics Building (renovated for use by the Health Sciences Teaching Center) have a combined peak domestic water demand of approximately 83 gallons per minute (gpm) (Berchard Long & Associates 2002, Table 5-1, beginning on page 5-4), compared with an overall campus demand on the order of 4,000 gpm. As with wastewater generation, these projects would entail comparatively nominal water demands that would not place substantial additional demands on the domestic water service system because they would entail remodeling or, in the case of EH&S, relocating existing facilities to accommodate minor increases in occupancy and usage. Therefore, there would be no significant cumulative impact on project-related water supply. Individual assessments of domestic water system capacity will be required for each of these projects, in accordance with LRDP Program and Practice 4.15-1(a). The results of these system capacity analyses will be disclosed in the respective forthcoming environmental documents, which will also acknowledge the Glen Mor 2 project as a cumulative project.

³ The East Campus infrastructure study (Berchard Long & Associates 2002) identified peak sewer demand for the existing Barn, Student Recreation Center, and Computer Statistics (future Health Sciences Teaching Center) facilities (0.01, 0.1, and 0.05 cfs, respectively).

Chapter 4

Alternatives Analysis

4.1 Introduction

Section 15126.6 of the State CEQA Guidelines requires an EIR to evaluate a “...range of reasonable alternatives to the project, or to the location of the project, that could feasibly attain the basic objectives of the project.” An alternatives discussion should focus on those alternatives that are “capable of eliminating any significant adverse impacts or reducing them to below a level of significance, even if these alternatives could impede to some degree the attainment of the project objectives or would be more costly.” Alternatives are to include a “no project” alternative that would allow decision makers to compare a project’s impacts with those that would result from not approving the project. The guidelines further direct that the environmental impacts of alternatives “shall be discussed but in less detail than the significant effects of the project as proposed.” An EIR must identify an “environmentally superior” alternative; if the “no project” alternative is the environmentally superior alternative, then the EIR must identify which of the other alternatives is environmentally superior.

Alternatives are intended to be feasible, as determined by such factors as site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the availability of potential alternative sites. However, inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact feasible.¹ Rather, the final decision regarding an alternative’s respective feasibility lies with the project’s decision-making body, which must make the necessary findings to address the potential feasibility of reducing the severity of significant environmental impacts (Public Resources Code Section 21081; see also State CEQA Guidelines Section 15091).

This chapter describes three alternatives, discusses how they relate to the project objectives listed in Section 2.3 of this EIR, and considers the environmental implications of implementing the three alternatives. The alternatives are the No-Project Alternative (Alternative 1), the LRDP Alternative (Alternative 2), and the Reduced Project Alternative (Alternative 3).

4.2 Process of Developing Project Alternatives

The project alternatives analyzed in this chapter were developed by reviewing the significant impacts identified during the environmental analysis conducted for the project, as presented in the respective sections of Chapter 3. Where significant impacts were identified, UCR considered ways in which the respective impacts could be avoided by modifying the project rather than—or in addition to—implementing mitigation measures. The alternatives identification focused primarily on impacts

¹ The State CEQA Guidelines define *feasible* to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” When making the decision as to whether an alternative is feasible or infeasible, the decision-making body may consider the stated project objectives in an EIR in light of any relevant economic, environmental, social, and technological factors.

that were identified as significant and unavoidable because either there was no feasible mitigation available or because the mitigation identified would not be enough to reduce impacts to less-than-significant levels.

4.3 Alternatives Dismissed from Further Consideration

4.3.1 Construction Schedule Extension Alternatives

Section 3.2 of this EIR identifies a significant and unavoidable air quality impact resulting from project construction that would exceed SCAQMD's localized particulate matter (PM10 and PM2.5) thresholds. This impact would be due primarily to the large amount of dust that would be generated by project construction. Most of this dust would be associated with over-excavation and re-compaction on the site, which would be required because the on-site soil is unsuitable in its existing state and unable to support the types of foundations necessary for the proposed structures. The relevant SCAQMD thresholds are expressed in terms of pounds per day, and the impact is anticipated to occur on days during project construction when activity is heaviest because of overlapping phases. Aside from mandatory compliance with SCAQMD Rule 403—which requires construction projects to apply water or soil stabilizers to graded areas, replace ground cover as quickly as possible, suspend grading operations during periods of heavy winds, and enforce speed limits on job sites—there are no feasible mitigation measures that would substantially reduce dust generation during project construction. The only solution to exceeding the thresholds would be to limit the amount of grading that would occur on a given day so that the applicable PM10 and PM2.5 thresholds would not be exceeded. This would extend the grading phase and, because so much earthwork would be required on such a large portion of the site, this in turn would extend the overall schedule for project construction. This alternative would fail to meet the critical project objective of project occupancy by the fall 2013 semester, as noted in Section 2.3 of this EIR. UCR has concluded that it is not feasible to delay the project's occupancy date because the university needs to provide on-campus housing for its students as soon as possible to meet the LRDP objective of housing 50% (26% are housed on campus based on Fall 2010 enrollment numbers). Furthermore, extending the construction schedule would draw out the period during which on- and off-campus residents would receive construction noise and view the construction site, minimizing the benefit of this change to the project. Therefore, this alternative is not being considered for implementation and is not analyzed below in Section 4.4.

Section 3.10 of this EIR identifies a significant and unavoidable impact resulting from noise levels received by on- and off-campus receptors during project construction. This impact would be due to the large amount of construction equipment that would operate on the site during peak periods of activity (i.e., when multiple phases of construction would overlap), especially when construction would occur at or near the western and eastern edges of the site. Noise levels could be reduced by implementing a construction alternative that would avoid this multi-phase overlap, thereby reducing the amount of construction equipment operating at once. However, under this scenario significant impacts would still occur at on- and off-campus receptors during grading activity at the western and eastern edges of the site, and this alternative would not reduce this noise impact to a less-than-significant level. Furthermore, as with the air quality alternative discussed above, this alternative would extend the overall duration of project construction,

thereby extending the period during which affected residents would be exposed to construction activity and minimizing the benefit of this change to the project. Therefore, this alternative is not being considered for implementation and is not analyzed below.

4.3.2 Arroyo Avoidance Alternative

Significant impacts identified above for biological resources that result from work within the on-site arroyo would be avoided by an alternative that would preclude all project-related work in the arroyo, including the culvert extension, bank stabilization and recontouring, culvert and walking path removal, and clearing of the blocked culvert. Such an alternative would avoid impacts on riparian habitat and jurisdictional waters identified in Section 3.3 of this EIR and would eliminate construction-period impacts on hydrology and water quality resulting from this in-arroyo work. However, this alternative would omit critical project components that are intended to help implement LRDP Planning Strategy Open Space 3 by improving and restoring the areas of degraded habitat located in the on-site arroyo. Furthermore, the arroyo impacts were not deemed to be significant and unavoidable because mitigation measures are available to reduce these impacts to less than significant, and the project's arroyo enhancement program would provide a project-based overall benefit to the arroyo. Therefore, there is no CEQA-based need to analyze the impacts of this alternative.

4.4 Alternatives Impact Analysis

The discussion in this section considers the environmental impacts of the three alternatives under consideration, focusing on a comparison with the impacts identified in Chapter 3 of this EIR and indicating whether they would result in impacts that were not identified in Chapter 3.²

Table 4-1, which appears at the end of this chapter, provides a summary of the impact conclusions for each of the alternatives, highlighting instances where the alternatives' impacts are reduced or worsened compared with those of Glen Mor 2. Visual elements have been incorporated into Table 4-1 to aid in comparing the environmental consequences of the alternatives against those of the Glen Mor 2 project. In that table, cells that are crossed out with diagonal lines indicate instances in which the alternative increases the impact such that the impact conclusion is changed (e.g., an impact that is less than significant for Glen Mor 2 but would require mitigation under the alternative or an impact that is less than significant with mitigation under Glen Mor 2 but would be significant and unavoidable under the alternative). The table also indicates instances where the impact conclusions would not change, but the alternative would either worsen the impact (shown with parentheses around the impact conclusion abbreviation) or reduce the impact (indicated by the symbol "[+]" after the abbreviation).

² All of the alternatives analyzed in Section 4.4 are alternatives to the Glen Mor 2 project. To differentiate between the alternatives and the original project, "Glen Mor 2," as used throughout this section, refers to the version of the project described in Chapter 2 and analyzed in Chapter 3 of this EIR.

4.4.1 Alternative 1: No-Build Alternative

Description of Alternative 1

Under Alternative 1, none of the facilities proposed as part of the project would be constructed, and the project site would remain in its existing state. Parking Lot 14 would continue to operate with its existing capacity, and the on-site residence would remain on site, likely remaining vacant and unused. Unpaved pedestrian paths would continue to cross the site. None of the arroyo improvements would be implemented, including the hydrological improvements and the Arroyo enhancement program. All existing vegetation would remain on the project site.

Relationship to Project Objectives

Alternative 1 would not meet any of the project objectives stated in Section 2.3, except that, with no project, the campus would no longer need to implement the objective of minimizing adverse consequences to off-campus neighbors as related to the project.

Environmental Impact Analysis

Aesthetics

Alternative 1 would avoid all aesthetics impacts identified in Section 3.1 of this EIR because it would leave the site in its existing physical state. None of the project structures would be constructed, so there would be no impact on existing views, no change in the site's visual character, and no new sources of light and glare.

Air Quality

Alternative 1 would avoid all air quality impacts identified in Section 3.2 of this EIR because it would not entail any construction or permanent sources of pollutant generation. Therefore, Alternative 1 would avoid the significant and unavoidable impacts attributed to construction-related particulate matter generation in Glen Mor 2 (Impacts 3.2-4 and 3.2-5).

Biological Resources

Alternative 1 would avoid all impacts identified in Section 3.3 of this EIR because it would leave the site in its existing physical state and would not remove, disturb, or otherwise affect any biological resources on the site. However, this alternative would implement neither the physical improvements to arroyo hydrology nor the Arroyo enhancement program, both of which would be beneficial to biological resources on the site and downstream of the on-site arroyo.

Cultural Resources

Alternative 1 would avoid all cultural resources impacts identified in Section 3.4 of this EIR because it would not disturb any ground and it would not demolish the existing residence.

Geology and Soils

Alternative 1 would avoid all geological resources impacts identified in Section 3.5 of this EIR because it would not disturb any ground or place new structures on the project site. Undocumented

and unconsolidated fill would remain on the upper layers of the site, and would present similar constraints to prospective future projects.

Greenhouse Gas Emissions

Alternative 1 would avoid all GHG impacts identified in Section 3.6 of this EIR because it would not entail any construction or permanent sources of pollutant generation.

Hazards and Hazardous Materials

Alternative 1 would avoid all hazardous materials impacts identified in Section 3.7 of this EIR because it would not disturb any ground, entail any on-site construction, demolish the on-site residence, place new diesel generators in proximity to residences, place new residences in proximity to the existing fuel pipeline, or affect the East Lothian Residence Hall evacuation zone.

Hydrology and Water Quality

Alternative 1 would avoid all hydrology and water quality impacts identified in Section 3.8 of this EIR because it would not disturb any ground, affect any existing channels, result in any stormwater discharge, or modify features within a floodplain.

Land Use and Planning

Alternative 1 would leave the existing LRDP land use designations in place and would not alter the existing conditions on the site. This alternative would produce no impacts related to land use and planning at this time, but the campus would not be precluded from proposing a different project on the site consistent with campus buildout identified in the LRDP, which would ultimately produce impacts similar to Alternative 2.

Noise

Alternative 1 would avoid all noise impacts identified in Section 3.10 of this EIR because it would entail none of the construction or operational activities proposed in the Glen Mor 2 project. This alternative would avoid the two significant and unavoidable impacts identified for project construction: the vibration impact to on-campus residential receptors (Impact 3.10-2) and the noise impact to on- and off-campus residential receptors (Impact 3.10-7). Parking Lot 14 would remain as the only considerable source of noise on the project site.

Public Services

Alternative 1 would avoid all public services impacts identified in Section 3.11 of this EIR because it would not add new buildings or on-campus residents to the site that would create demand for police and fire services, nor would it increase demand for fire flow. The grassland covering the site would, in case of an on-site fire, remain as a potential demand on fire protection services, and the vacant residence would remain as a potential demand on police protection services.

Recreation

Alternative 1 would avoid all recreational impacts identified in Section 3.12 of this EIR because it would not add new residents to the campus who would create demand for existing recreational facilities and it would not install new recreational facilities.

Transportation and Traffic

Alternative 1 would avoid all traffic impacts identified in Section 3.13 of this EIR because it would preclude all project-related construction, would not permanently add new vehicle trips to the local roadways, and would not change access to the project site. Parking Lot 14 would remain as the only traffic generator on the project site. Accordingly, Alternative 1 would avoid contribution to the significant and unavoidable impact attributed to the project-related increase in delay at the Watkins Drive/Big Springs Road intersection under the Glen Mor 2 project.

Utilities and Service Systems

Alternative 1 would avoid all impacts identified in Section 3.14 of this EIR because there would be no increase in demand on the campus's domestic water supply or sewer system.

4.4.2 Alternative 2: No LRDP Amendment Alternative

Description of Alternative 2

Alternative 2 assumes that the project site would be developed as anticipated in the LRDP. The LRDP does not specifically define a project for this site but, rather, outlines proposed land uses, as shown in Figure 3-6 of the LRDP EIR (see Figure 2-8 of this EIR). As shown in the referenced figure, the LRDP anticipated that the project site would be developed with facilities conforming to the "Family, Apartment Housing and Related Support" and "Athletics and Recreation" land uses and designates the on-site arroyo as Open Space. This alternatives analysis assumes that Alternative 2 would entail construction of the same building program as the Glen Mor 2 project, but on a modified footprint. Thus, the alternative would consist of student apartments, a parking structure for campus residents, and associated support facilities and outdoor common areas similar to those proposed in the Glen Mor 2 project; the same arroyo improvements as in the Glen Mor 2 project would be implemented. In addition to these elements, athletics fields similar to those north of the site also would be constructed in the southeastern portion of the site, as shown in the referenced figure.

The Alternative 2 apartments would accommodate the same number of students as would Glen Mor 2 and enable UCR to meet its goals pertaining to provision of on-campus student housing. In addition, a new parking structure would be constructed to accommodate the same number of residents as that proposed in Glen Mor 2. However, the configuration of the land uses in the LRDP land use plan requires the housing and parking structure layout to be different from their layout in Glen Mor 2, with less land available for these uses. A prospective configuration would locate the parking structure in the southwestern portion of the site, with the residential buildings located north of the parking structure and athletic fields and south of the arroyo. Because of the limited amount of space for this structural development, the proposed residential buildings and parking structure would need to include additional floors and be taller to accommodate the same number of students. Buildings A, B, and C would be eliminated to accommodate the parking structure; accordingly, Buildings D, G, and H likely would be redesigned and increased in height by three or four levels, to between eight and nine stories. Because the parking structure footprint would be smaller, it likely would be constructed with an additional aboveground level. This would also limit the amount of space for landscaping and outdoor plazas within the site, though outdoor uses and project landscaping around the perimeter of the site would be similar. The existing residence would be demolished and the Executive Retreat would be constructed, as in the Glen Mor 2 project.

Relationship to Project Objectives

Alternative 2 generally would satisfy all of the project objectives listed in Section 2.3 of this EIR.

Environmental Impact Analysis

Aesthetics

Alternative 2 would result in worse aesthetics impacts than those of the Glen Mor 2 project because of the larger structures and greater concentration of structural development on the site. Impacts on off-campus views of the Carillon Tower (Impact 3.1-1) would be greater than those under Glen Mor 2 because of the taller structures and denser development proposed under this alternative. This impact would be significant and unavoidable under Alternative 2, whereas mitigation would reduce the Glen Mor 2 project's impacts to a less-than-significant level. The proposed structures would represent worse obstruction of existing views of the Box Springs Mountains from publicly accessible viewpoints than the Glen Mor 2 project, but would also create new publicly accessible viewpoints for these views, similar to that which would occur under Glen Mor 2 (Impact 3.1-2). The overall change to the visual character of the site (Impact 3.1-3) would be worse than it would be under Glen Mor 2 because the denser and larger scale of development under this alternative would conflict with campus design guidelines and be incompatible with surrounding development; this would be a significant and unavoidable impact that was not assessed in Glen Mor 2. Finally, Alternative 2 would install new lighting features at the on-site athletic fields, which would present a worse lighting impact (Impact 3.1-4) than that of the proposed project. Mitigation such as shielding and limiting operational hours would be needed under Alternative 2 to reduce this impact to a less-than-significant level.

Air Quality

Alternative 2 would entail a more intensive building construction method than Glen Mor 2. The residential towers would likely entail a greater effort than the structures proposed on Glen Mor 2, as would the additional levels of the alternative's parking structure. The addition of the athletic fields would also slightly expand the construction effort because the building program would entail all the same features as Glen Mor 2, plus the additional work required to prepare the fields. Accordingly, Alternative 2 would result in construction impacts that would be slightly worse than those assessed under Glen Mor 2, including worsening particulate matter impacts, which were identified as significant and unavoidable in Section 3.2 of this EIR (Impacts 3.2-4 and 3.2-5), with no mitigation to reduce the impacts. Operation of Alternative 2 would be on a scale similar to that of Glen Mor 2; therefore, this alternative would result in operational air quality impacts similar to those of Glen Mor 2.

Biological Resources

Alternative 2 would entail modification of the project site and work in the arroyo similar to the work that would occur under Glen Mor 2. There would be no difference in the biological resources impacts, and all mitigation measures identified in Section 3.3 would be required.

Cultural Resources

Alternative 2 would not have an effect on cultural resources beyond the impact identified for Glen Mor 2. The alternative would result in similar demolition of the on-site residence, resulting in a

less-than-significant impact on historic resources (Impact 3.4-1). Alternative 2 would entail earthwork throughout the site, similar to that of Glen Mor 2, and require the same mitigation measure pertaining to the protection and recovery of any archeological artifacts discovered during earthwork to reduce this impact to a less-than-significant level (Impact 3.4-2).

Geology and Soils

Alternative 2 would result in the same geology and soils impacts as the Glen Mor 2 project because the two projects would entail construction on the same project site. With the building footprint slightly different under Alternative 2 and project foundations needing to be more substantial to support the taller structure, a project-specific geotechnical report would be required to identify any different geological conditions that could affect building design and construction, in accordance with LRDP EIR Programs and Practices 4.6-1(a). All geology and soils impacts identified in Section 3.5 for the Glen Mor 2 project were determined to be less than significant with implementation of the relevant LRDP programs and practices for construction and adherence to strict standards to maintain safe conditions during on-site construction. These same measures would all be required under Alternative 2, and additional consideration related to seismic impacts would be required under Alternative 2 because of the height of the towers and their proximity to existing and proposed structures.

Greenhouse Gas Emissions

Alternative 2 would entail a greater construction effort than Glen Mor 2, as described above for the alternative's air quality impacts, which would represent a slight increase in the project's GHG emission.

Hazards and Hazardous Materials

Alternative 2 would result in the same hazardous materials impacts as would the Glen Mor 2 project because the two projects would entail construction and development on the same project site. This would mean similar impacts related to exposing construction workers to agricultural chemicals (Impact 3.7-1), which was identified as less than significant for the Glen Mor 2 project. Demolition of the on-site residence would occur under Alternative 2 and would adhere to the same demolition plan prepared for the Glen Mor 2 project, which identifies measures for removing and disposing of asbestos-containing materials and lead-based paint known to exist in the house (Impact 3.7-2). Accordingly, Alternative 2 would also require adherence to LRDP Programs and Practices 4.7-2 and 4.3-2(c), complying with SCAQMD Rule 1403 and state regulations governing lead-containing materials.

Alternative 2 would install similar diesel emergency generators as would Glen Mor 2, which would likely be in similar proximity to on- and off-campus residences (Impact 4.7-3 and 4.7-6), and this impact would be no different under Alternative 2, requiring consideration of setbacks and buffers and implementation of LRDP Programs and Practices 4.7-1 to prepare an emergency response plan for the on-site diesel storage. As under Glen Mor 2, Alternative 2 would entail construction in proximity to the fuel pipeline in Valencia Hill Drive (Impact 3.7-4), necessitating similar state-mandated coordination with responsible parties through the Underground Service Alert to prevent accidents. This impact would be no different under Alternative 2 as under Glen Mor 2. With the reconfiguration of proposed residences, Alternative 2 would place most of the new residences farther away from the pipeline, further minimizing this less-than-significant impact, when compared

to Glen Mor 2 (Impact 3.7-5). Alternative 2 would be located in the same proximity to off-site schools as Glen Mor 2 (Impact 3.7-7); therefore, there would be no change in this impact.

Finally, the similarities in their footprints means that Alternative 2 and Glen Mor 2 would result in similar construction activities and permanent encroachments on the Lothian Residence Hall evacuation area (Impact 4.7-8). Accordingly, Alternative 2 would also require emergency coordination pursuant to LRDP Programs and Practices 4.7-7(a) and 4.7-7(b) to ensure this impact would be less than significant.

Hydrology and Water Quality

Alternative 2 would result in hydrology and water quality impacts similar to those of the Glen Mor 2 project because it would entail construction and development on the same project site but with a different development layout. The alternative would be subject to the same LRDP EIR programs and practices related to stormwater management as would the Glen Mor 2 project. These practices would reduce impacts to less-than-significant levels. The development pattern proposed under Alternative 2 would result in a slightly different stormwater runoff pattern compared with Glen Mor 2. This would require, under LRDP Programs and Practices 4.8-3a, project-specific hydrological analysis, SWPPP, and post-construction stormwater management design. Similar to the Glen Mor 2 project, this alternative would implement arroyo improvements and would not result in any substantial differences in arroyo hydrology when compared with Glen Mor 2.

Land Use and Planning

The difference between Alternative 2 and the Glen Mor 2 project would have no bearing on consistency with the SCAG Regional Comprehensive Plan because it would involve the same resource conservation and green building practices (Impact 3.9-1). As with the Glen Mor 2 project, the alternative generally would be consistent with most policies of the LRDP (Impact 3.9-2). However, the alternative would conflict with campus design guidelines and be incompatible with surrounding on-campus development. This aspect of Impact 3.9-2 would be significant and unavoidable under Alternative 2 for an impact that was deemed less than significant under Glen Mor 2. The alternative moves the parking structure to the west and concentrates development of the residential structures farther west than under the Glen Mor 2 project, meaning these components of the project would be farther removed from off-campus residences. The alternative would place additional athletic fields at the location of the parking structure under Glen Mor 2, near the edge of campus. From a land use compatibility standpoint, the athletic fields would have a similar impact as the uses proposed under Glen Mor 2. Alternative 2 would maintain the same campus-edge buffer as in the proposed project and would provide a fence along the campus edge, both of which would limit the project's incompatibility with the off-campus area. Accordingly, the alternative would result in a less-than-significant impact relative to land use incompatibility, as would occur under Glen Mor 2 (Impact 3.9-3). Because Alternative 2 would provide the recreational uses anticipated in the LRDP, the alternative would result in no impact on this aspect of the LRDP (Impact 3.9-4).

Noise

Alternative 2 generally would result in construction noise that would be similar to that of the Glen Mor 2 project, though construction impacts would be worse at certain on-campus locations due to the revised layout of the project. With the shift in development toward the west under Alternative 2, noise from grading, parking garage construction, and the erection of the high-rise apartments would

be more concentrated toward on-campus residences at Lothian. Accordingly, construction-related vibration (Impact 3.10-2) and noise (Impact 3.10-7), both of which were identified as significant and unavoidable in Section 3.10, would be worse at these on-campus receptors. This shift in development would also mean noise and vibration would be less at off-campus receptors east of the site. However, the significant and unavoidable construction-noise impact identified for these off-campus receptors (Impact 3.10-7) would not be avoided because grading and construction would still occur on the eastern side of the site; these areas would still be exposed to significant levels of noise for which there is no feasible mitigation, albeit for a shorter period of time because of the reduced scale of the construction effort in proximity to the campus edge. Off-campus construction vibration (Impact 3.10-3) would remain less than significant under Alternative 2.

Similarly, impact conclusions for operational impacts under Alternative 2 would also be the same as for Glen Mor 2 because the alternative and the original project feature the same operational uses, though impacts would be shifted west toward on-campus receptors. Newly proposed apartments would continue to be exposed to noise from the proposed parking garage, but interior noise reduction from standard construction practices would continue to keep these noise levels below the 45 dBA threshold (Impact 3.10-1). Parking garage noise would be shifted westward, exposing existing on-campus receptors at Lothian to higher noise levels than those anticipated under Glen Mor 2. The parking structure's distance from off-campus receptors under Alternative 2 would adequately attenuate this off-campus noise. As in Glen Mor 2, the parking structure would not generate a 5 dBA noise increase on or off campus (Impact 3.10-5), and this impact would be less than significant. There would be no change in noise from roof-mounted equipment and other stationary sources (Impact 3.10-6). The project-related traffic noise would be the same and would be received along the same roadways as described under Glen Mor 2 (Impact 3.10-4). This impact would be less than significant under Alternative 2.

In addition to the noise sources generated by the similar facilities in the Glen Mor 2 building program, Alternative 2 would result in an additional noise source with the athletic fields constructed in the southeast corner of the project site. This would generate noise received by off-campus residences east of the site that was not anticipated under Glen Mor 2. Implementation of this alternative would require project-level analysis to determine whether noise from the athletic fields would result in a significant impact on nearby residences.

Public Services

Alternative 2 would result in public services impacts similar to those of the Glen Mor 2 project. Similar to Glen Mor 2, Alternative 2 would represent infill development. It would not expand service areas, but it would increase building area and campus population, which would increase demand for police and fire protection services (Impact 3.11-1, 3.11-2, and 3.11-3). This increase would be similar to that of Glen Mor 2; Alternative 2 would not generate demand beyond that stated in Section 3.11. As with Glen Mor 2, Alternative 2 must incorporate LRDP EIR Programs and Practices 4.12-1(a), requiring project design to comply with campus fire protection guidelines, which would reduce fire protection demand to a less-than-significant level. The increased height of the residential buildings associated with Alternative 2 would require a project-specific fire flow analysis per LRDP EIR Programs and Practices 4.12-1(a) to confirm that available flows to the project site would be adequate for the taller buildings.

Recreation

Alternative 2 would result in the same impact on existing on- and off-campus recreational facilities as that of the Glen Mor 2 project (Impacts 3.12-1 and 3.12-2). It would add the same number of on-campus residents and, therefore, generate the same demand for recreational facilities. The facilities constructed on the site under the alternative would improve service levels for on-campus recreational facilities, and this impact would be less than significant, as under Glen Mor 2. Alternative 2 would also add the same pool and indoor fitness facilities as proposed under Glen Mor 2 (Impact 3.12-3), which would have the same less-than-significant effect on the environment.

Transportation and Traffic

Alternative 2 would entail similar traffic impacts to those identified in Section 3.13 for Glen Mor 2. One minor difference between Alternative 2 and Glen Mor 2 would be the location of the main access point for the project, which would be moved west under Alternative 2 to meet the revised parking structure location. As under Glen Mor 2 (Impact 3.13-3), this impact would be less than significant with implementation of LRDP EIR Programs and Practices 4.14-4, ensuring incorporation of safe access into project design. There would be no difference between project-related vehicle trips under the alternative and Glen Mor 2 (Impact 3.13-1), and the same proportional contribution fee would be required as mitigation for the project's contribution of traffic at the Watkins Drive/Big Springs Road intersection. As in the Glen Mor 2 project, this impact would remain significant and unavoidable because the campus has no authority over implementing the mitigation measure. The alternative's increased parking demand, as well as its provision of parking, would be the same as under Glen Mor 2 (Impact 3.13-7). The change in site layout under Alternative 2 would not change the impact on public transit identified under Glen Mor 2 (Impact 3.13-9).

There would be no considerable difference in the volume of construction traffic (Impact 3.13-2) under Alternative 2, and LRDP EIR Programs and Practices 4.14-2 would ensure that this construction traffic would result in a less-than-significant impact. Other construction impacts would also be the same as under Glen Mor 2 because shifting the concentration of construction activity within the site would not change the issues related to construction-period traffic. Temporary lane closures (Impact 3.13-4), pedestrian route closures (Impact 3.13-5), emergency access (Impact 3.13-6), and construction parking (Impact 3.13-6) would all be the same under Alternative 2, and implementation of the respective LRDP EIR programs and practices and project-specific mitigation measures identified in Section 3.13 would ensure that these construction-period impacts would be less than significant.

Utilities and Service Systems

Alternative 2 would have the same utilities and service systems impacts as Glen Mor 2 because it would result in an identical increase in on-campus residents and staff and, therefore, an identical increase in demand with respect to the campus's domestic water supply and sewer capacity. As with Glen Mor 2, Impacts 3.14-1 and 3.14-2 would be less than significant under Alternative 2.

4.4.3 Alternative 3: Reduced Project Alternative

Description of Alternative 3

Alternative 3 is the Reduced Project Alternative. Under Alternative 3, the site would be developed with facilities similar to those proposed in the Glen Mor 2 project, but the apartment buildings would be smaller in scale such that they would house half the number of students. This alternative analysis assumes that the development footprint would be similar to that of Glen Mor 2, but that the residential buildings would be three levels rather than five levels, with the buildings reduced in height, accordingly. The arroyo improvements would be implemented as in Glen Mor 2, and the parking structure would be constructed with the same number of spaces as proposed in the Glen Mor 2 project, so as to accommodate residents of Glen Mor 2 and the rest of the surrounding housing precinct.

Relationship to Project Objectives

Alternative 3 would satisfy all of the project objectives listed in Section 2.3 of this EIR, except that it would provide half the amount of beds stated in the project objectives, which would significantly compromise the campus's progress toward meeting the LRDP objective of providing campus-controlled housing for 50 percent of students. Under this alternative, it is likely that other future housing projects elsewhere on the campus would need to be larger in scale than they otherwise would be in order to accommodate the students originally intended to be housed in Glen Mor 2.

Environmental Impact Analysis

Aesthetics

Alternative 3 would result in lesser aesthetics impacts than the Glen Mor 2 project because of the reduced scale of project construction. Impacts on off-campus views of the Carillon Tower (Impact 3.1-1) would be similar, but mitigation would still be required for this impact to ensure the landscape plans along the arroyo edge are designed to maintain these views. The shorter structures would preserve on-campus views of the Box Springs Mountains (Impact 3.1-2) to a greater extent than under Glen Mor 2, further reducing this less-than-significant impact. The overall change to the visual character of the site (Impact 3.1-3) would be the same as in Glen Mor 2 because the scale of development would generally be the same. Alternative 3 would install similar lighting and feature similar building materials as under Glen Mor 2, and light and glare impacts (Impact 3.1-4) would be similar.

Air Quality

In general, Alternative 3 would entail construction and operation on a similar scale as Glen Mor 2. The smaller buildings under Alternative 3 would slightly reduce some of the construction emissions, but not the extent of grading that creates the significant and unavoidable particulate matter emission identified for Glen Mor 2 (Impact 3.2-4 and 3.2-5). The reduction in the number of on-site residences would slightly reduce the permanent emissions generated by the project, resulting in similar less-than-significant impact conclusion for the operational impacts stated in Section 3.2 of this EIR.

Biological Resources

Alternative 3 would entail modification of the project site and work in the arroyo similar to that occurring under Glen Mor 2. There would be no difference in the biological resources impacts, and all mitigation measures identified in Section 3.3 would be required.

Cultural Resources

Alternative 3 would not have an effect on the cultural resources impacts identified for Glen Mor 2. Alternative 3 would entail demolition of the on-site residence similar to Glen Mor 2, resulting in a less-than-significant impact on historic resources. Alternative 3 would entail earthwork throughout the site similar to Glen Mor 2 and would require the same mitigation measure of protection and recovery of any archeological artifacts discovered during earthwork to reduce this impact to a less than significant level.

Geology and Soils

Alternative 3 would result in the same geology and soils impacts as would the Glen Mor 2 project because the two projects would entail construction on the same project site and footprint. All geology and soils impacts identified for the Glen Mor 2 project were concluded to be less than significant with implementation of relevant LRDP programs and practices for construction adhering to strict standards to maintain safe conditions in on-site construction. These same measures would all be required under Alternative 3.

Greenhouse Gas Emissions

In general, Alternative 3 would entail construction and operation on a smaller scale than Glen Mor 2; therefore, this alternative would result in slightly lower GHG emissions impacts compared to Glen Mor 2. This reduction would not change the impact conclusions stated in Section 3.6 of this EIR.

Hazards and Hazardous Materials

The discussion of Alternative 3's impacts with respect to Glen Mor 2 Impact 3.7-1, Impact 3.7-2, Impact 3.7-7, and Impact 3.7-8 would be the same as those discussed above under Alternative 2 because of the similar overall project footprints.

Alternative 3 would install similar diesel emergency generators as would Glen Mor 2, which would likely be in similar proximity to on- and off-campus residences (Impact 3.7-3 and 3.7-6). Though Alternative 3 would expose fewer on-campus residences to potential risks, the issues of risk are the same and this impact essentially would be no different under the alternative, requiring implementation of LRDP Programs and Practices 4.7-1 to prepare an emergency response plan for the on-site diesel storage. As under Glen Mor 2, Alternative 3 would entail construction in proximity to the fuel pipeline in Valencia Hill Drive (Impact 3.7-4), necessitating similar state-mandated coordination with responsible parties through the Underground Service Alert to prevent accidents. This impact would be no different under Alternative 3 as under Glen Mor 2. With fewer on-site residences, Alternative 3 would reduce the number of new residences exposed to pipeline risk, but the issues of risk are the same and there would be no substantial difference when compared to Glen Mor 2 (Impact 3.7-5).

Hydrology and Water Quality

Alternative 3 would result in identical hydrology and water quality impacts as the Glen Mor 2 project because it would entail construction and development of the same project footprint. The alternative would be subject to the same LRDP EIR programs and practices related to stormwater management as would the Glen Mor 2 project, which would reduce impacts to less-than-significant levels. This alternative would implement the arroyo improvements similar to the Glen Mor 2 project, and would not result in any differences in arroyo hydrology when compared to Glen Mor 2.

Land Use and Planning

The difference between Alternative 3 and the Glen Mor 2 project would have no bearing on consistency with the SCAG Regional Comprehensive Plan because it would involve the same resource conservation and green building practices (Impact 3.9-1). Similar to the Glen Mor 2 project, Alternative 3 would eliminate planned recreation uses from the site and would require an LRDP amendment. The alternative would have a lesser intensity of development than Glen Mor 2, but the reduced number of students accommodated on the site would compromise the campus's ability to meet LRDP PS Land Use 4 (housing 50 percent of students on campus), which may, in turn, entail significant impacts that were not anticipated under Glen Mor 2 as student housing capacity is provided at other on- or off-campus locations. Therefore, Alternative 3 would result in a worse impact than Glen Mor 2 for its inconsistency with the LRDP (Impact 3.9-2). The project's compatibility with the off-campus area would be similar to Glen Mor 2, though the reduced development intensity would slightly reduce the less-than-significant impact that was identified in Impact 3.9-3. Finally, Alternative 3 would result in a similar loss of planned recreational uses anticipated in the LRDP, but the planned provision of space on top of parking structures for such facilities elsewhere on the campus would mean that the project-related reduction in planned recreation acreage would be less than significant (Impact 3.9-4).

Noise

Alternative 2 would result in similar noise as the Glen Mor 2 project, though overall construction impacts would be slightly lesser because of the reduced scale of project construction and overall operational impacts would be slightly lesser due to the reduced level of operational activity associated with fewer on-site residents. The layout of the project would be the same as under Glen Mor 2, meaning that construction noise and vibration would be received by the same receptors, but the smaller buildings would entail a shorter duration of certain phases of project construction. Construction-related vibration would be received on campus at similar levels (Impact 3.10-2) and this would require the same mitigation as under Glen Mor 2. Off-campus vibration (Impact 3.10-3) would not change and would be less than significant. Significant and unavoidable construction noise levels would be received on and off campus (Impact 3.10-7).

Newly proposed apartments would continue to be exposed to noise from on-campus sources, but interior noise reduction from standard construction practices would continue to keep these noise levels below the 45 dBA threshold (Impact 3.10-1). Parking structure noise levels would be similar under Alternative 2 because the parking structure would have the same number of spaces as under Glen Mor 2, and would expose the same on- and off-campus receptors to the same levels as under Glen Mor 2 (Impact 3.10-5). As in Glen Mor 2, the parking structure would not generate a 5 dBA noise increase on or off campus (Impact 3.10-5), and this impact would be less than significant. There would be no change in noise from roof-mounted equipment and other stationary sources, and

these impacts would be less than significant (Impact 3.10-6). The project-related traffic noise would be slightly lower due to fewer project-related residences traveling local roadways than under Glen Mor 2 (Impact 3.10-4), and this impact would be less than significant under Alternative 2.

Public Services

Alternative 3 would result in slightly reduced public services impacts when compared to those of the Glen Mor 2 project because of the reduction in the scale of the project and in the number of on-site residents. Like Glen Mor 2, Alternative 3 would represent infill development that would not expand service areas, but it would increase building area and campus population that would increase demand for police and fire services. On-site population would be slightly lesser under Alternative 3, and this would represent a slightly lesser increase in service demand, which was identified as less than significant in Section 3.11 of this EIR. As with Glen Mor 2, Alternative 3 must incorporate LRDP EIR Programs and Practices 4.12-1(a), requiring project design to comply with campus fire protection guidelines, which would reduce fire protection demand to a less-than-significant level. The reduced height of the residential buildings associated with Alternative 3 would lead to a slight reduction in fire flow demand, but this would not represent any new impacts beyond those for Glen Mor 2.

Recreation

Alternative 3 would result in fewer on-campus residents than under Glen Mor 2 and, therefore, generate a slightly lesser demand on existing on- and off-campus recreational facilities as the Glen Mor 2 project (Impacts 3.12-1 and 3.12-2). As under Glen Mor 2, these impacts would be less than significant under Alternative 3. The alternative would add the same pool and indoor fitness facilities as under Glen Mor 2 (Impact 3.12-3), which would have the same less-than-significant effect on the environment.

Transportation and Traffic

Alternative 3 would entail similar traffic impacts to those identified in Section 3.13 for Glen Mor 2. One minor difference between Alternative 3 and Glen Mor 2 would be that Alternative 3 would generate fewer project-related vehicle trips than Glen Mor 2 and, as a result, would have less of an impact at the Watkins Drive/Big Springs Road intersection (Impact 3.13-1). The alternative would still result in a significant impact and require mitigation measure TR 1, as it would contribute to poor future operations mostly associated with non-project-related trips, but the reduced number of trips would reduce the proportional contribution when compared to that of Glen Mor 2. Under Alternative 3, this impact would also be significant and unavoidable because the campus has no authority to implement the identified mitigation measure. The alternative's increase in parking demand would similarly be reduced compared to that of Glen Mor 2, as would the number of parking spaces provided on the site. Thus, Impact 3.13-7 would be the same, and the same mitigation measure would be necessary to ensure the campus limits its bed counts to reflect the number of residents that can be accommodated by on-campus parking, per the LRDP ratios. The location of the main access point would be the same under Alternative 3, resulting in a similar impact as was assessed to Glen Mor 2 (Impact 3.13-3), and safe access would be incorporated into project design with implementation of LRDP EIR Programs and Practices 4.14-4. The reduction in on-site residents would not considerably affect the impact on public transit attributed to Glen Mor 2 (Impact 3.13-9).

Alternative 3 would result in a slightly reduced construction effort compared with Glen Mor 2 because of the smaller size of the project-related buildings; however, this would not result in a considerable difference in the volume of construction traffic (Impact 3.13-2), and LRDP EIR Programs and Practices 4.14-2 would ensure that this construction traffic would result in a less-than-significant impact, as under Glen Mor 2. Other construction impacts would also be the same as in Glen Mor 2 because the reduction in the construction effort would not change the issues facing construction-related traffic. Temporary lane closures (Impact 3.13-4), pedestrian closures (Impact 3.13-5), emergency access (Impact 3.13-6), and construction parking (Impact 3.13-6) would all be the same under Alternative 3 as in Glen Mor 2, and implementation of the respective LRDP EIR programs and practices and project-specific mitigation measures identified in Section 3.13 would ensure these construction-period impacts would be less than significant.

Utilities and Service Systems

Alternative 3 would feature fewer residents and campus staff on the site than under Glen Mor 2. Accordingly, Alternative 2 would result in a smaller increase in demand on the campus's domestic water supply and sewer capacity than Glen Mor 2 (Impacts 3.14-1 and 3.14-2). Similar to the impacts under Glen Mor 2, these impacts would be less than significant under Alternative 3.

4.5 Environmentally Superior Alternative

Alternative 3—the Reduced Project Alternative—is the environmentally superior alternative because it would entail a smaller scale project than the Glen Mor 2 project. The smaller scale of construction would reduce Glen Mor 2's significant and unavoidable impacts pertaining to air quality (particulate matter emissions) and noise (vibration levels received at on-campus receptors and noise levels received at on- and off-campus receptors), but these impacts would not be reduced to less-than-significant levels under Alternative 3. Because Alternative 3 would entail fewer residents than the Glen Mor 2 project, operational impacts would also be reduced for traffic, air quality, GHG emissions, and noise. For these reasons, Alternative 3 is the environmentally superior alternative. However, in reducing the number of students housed on the site by 50 percent, this alternative would fail to meet the project's critical objective of providing approximately 800 new beds in on-campus housing. Additionally, this alternative does not imply a permanent reduction in anticipated on-campus residential population, and the campus would need to make up the number of beds with another future housing project. In the interim, off-campus areas would need to continue to accommodate the residential needs of students that the LRDP anticipates as ultimately being housed on campus.

Table 4-1. Alternatives Impact Summary

Impact	Glen Mor 2	Alternative 1	Alternative 2	Alternative 3
Aesthetics				
3.1-1	LTS MM	NI	SU	LTS MM
3.1-2	LTS	NI	LTS	(LTS)
3.1-3	LTS	NI	SU	LTS
3.1-4	LTS	NI	LTS MM	LTS
Air Quality				
3.2-1	LTS	NI	LTS	LTS
3.2-2	LTS MM	NI	(LTS MM)	LTS MM [+]
3.2-3	LTS	NI	LTS	LTS [+]
3.2-4	SU	NI	(SU)	SU [+]
3.2-5	SU	NI	(SU)	SU [+]
3.2-6	LTS	NI	LTS	LTS [+]
3.2-7	LTS	NI	LTS	LTS [+]
Biological Resources				
3.3-1	LTS	NI	LTS	LTS
3.3-2	LTS MM	NI	LTS MM	LTS MM
3.3-3	LTS	NI	LTS	LTS
3.3-4	LTS	NI	LTS	LTS
3.3-5	LTS	NI	LTS	LTS
3.3-6	LTS	NI	LTS	LTS
3.3-7	LTS MM	NI	LTS MM	LTS MM
3.3-8	LTS MM	NI	LTS MM	LTS MM
3.3-9	LTS MM	NI	LTS MM	LTS MM
3.3-10	LTS MM	NI	LTS MM	LTS MM
3.3-11	LTS MM	NI	LTS MM	LTS MM
Cultural Resources				
3.4-1	LTS	NI	LTS	LTS
3.4-2	LTS MM	NI	LTS MM	LTS MM
Geology & Soils				
3.5-1	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.5-2	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.5-3	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.5-4	LTS LRDP	NI	LTS LRDP	LTS LRDP
Greenhouse Gasses				
3.6-1	LTS	NI	(LTS)	LTS [+]
3.6-2	LTS	NI	(LTS)	LTS [+]
Hazards & Hazardous Materials				
3.7-1	LTS	NI	LTS	LTS
3.7-2	LTS	NI	LTS	LTS
3.7-3	LTS	NI	LTS	LTS
3.7-4	LTS	NI	LTS	LTS
3.7-5	LTS	NI	LTS	LTS
3.7-6	LTS	NI	LTS	LTS

Impact	Glen Mor 2	Alternative 1	Alternative 2	Alternative 3
3.7-7	LTS	NI	LTS	LTS
3.7-8	LTS LRDP	NI	LTS LRDP	LTS LRDP
Hydrology & Water Quality				
3.8-1	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.8-2	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.8-3	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.8-4	LTS	NI	LTS	LTS
3.8-5	LTS	NI	LTS	LTS
Land Use				
3.9-1	LTS	NI	LTS	LTS
3.9-2	LTS MM	NI	SU	(LTS MM)
3.9-3	LTS MM	NI	LTS	LTS MM
3.9-4	LTS	NI	NI	LTS
Noise				
3.10-1	LTS	NI	LTS	LTS
3.10-2	SU	NI	(SU)	SU [+]
3.10-3	LTS	NI	LTS	LTS [+]
3.10-4	LTS	NI	LTS	LTS
3.10-5	LTS	NI	LTS	LTS
3.10-6	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.10-7	SU	NI	(SU)	SU [+]
Public Services				
3.11-1	LTS LRDP	NI	LTS LRDP	LTS LRDP [+]
3.11-2	LTS	NI	LTS	LTS [+]
3.11-3	LTS	NI	LTS	LTS [+]
3.11-4	LTS	NI	LTS	LTS [+]
Recreation				
3.12-1	LTS	NI	LTS	LTS [+]
3.12-2	LTS	NI	LTS	LTS [+]
3.12-3	LTS	NI	LTS	LTS
Transportation & Traffic				
3.13-1	SU	NI	SU	SU [+]
3.13-2	LTS LRDP	NI	LTS LRDP	LTS LRDP [+]
3.13-3	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.13-4	LTS MM	NI	LTS MM	LTS MM
3.13-5	LTS MM	NI	LTS MM	LTS MM
3.13-6	LTS MM	NI	LTS MM	LTS MM
3.13-7	LTS MM	NI	LTS MM	LTS MM
3.13-8	LTS LRDP	NI	LTS LRDP	LTS LRDP
3.13-9	LTS	NI	LTS	LTS
Utilities & Service Systems				
3.14-1	LTS	NI	LTS	LTS [+]
3.14-2	LTS	NI	LTS	LTS [+]

Table Notes:

NI: No Impact

LTS: Less-than-Significant Impact

LTS MM: Less-than-Significant Impact w/Project-Specific Mitigation

LTS LRDP: Less-than-Significant Impact w/LRDP Programs and Practices

SU: Significant and Unavoidable

[+] indicates the impact conclusion would be the same but the impact would be reduced

(xx) indicates the impact conclusion would be the same but the impact would be increased

Chapter 5

Other CEQA Considerations

5.1 Summary of Significant Environmental Impacts

Section 15126.2(a) of the State CEQA Guidelines requires an EIR to describe the subject project's significant environmental impacts. Table ES-1 in the Executive Summary of this EIR presents a summary of the Glen Mor 2 project's significant environmental impacts and the mitigation measures that would be implemented to reduce these impacts to less-than-significant levels. Greater detail regarding these impacts is provided in Sections 3.1 through 3.14 of this EIR.

5.2 Significant Environmental Impacts That Cannot Be Reduced or Avoided

Section 15126.2(b) of the State CEQA Guidelines requires an EIR to describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. As determined by the analysis presented in Chapter 3 of this EIR, the project would result in significant and unavoidable impacts related to air quality, noise, and transportation traffic, as discussed below. The transportation and traffic impact discussed below was identified as significant and unavoidable in the LRDP EIR. Because the project would not worsen the impact, the prior statement of overriding considerations would remain valid. The vibration and noise impacts discussed below were identified as both significant and unavoidable in the LRDP EIR. However, the project would result in impacts that would be worse than those anticipated in the prior document; therefore, the prior statement of overriding considerations would not be valid, and an additional statement of overriding considerations would be required to address the impacts of the Glen Mor 2 project. The air quality impacts discussed below were not identified as significant and unavoidable impacts in the LRDP EIR; therefore, a statement of overriding considerations would be required to address the impacts of the Glen Mor 2 project.

5.2.1 Air Quality

Project construction is anticipated to generate a large amount of localized dust. This would be due primarily to the over-excavation and re-compaction required on the site because the on-site soil is unsuitable in its existing state and unable to support the types of foundations necessary for the proposed structures. This grading, along with other earthwork and dust-generating project construction activity, would cause the project to exceed SCAQMD's localized particulate matter (PM10 and PM2.5) thresholds, which are expressed in terms of pounds per day. Impacts are anticipated on days during project construction when activity would be heaviest because of overlapping phases. There are no feasible mitigation measures that would reduce this impact to a less-than-significant level. As discussed in Section 4.3.1, extending the project's construction schedule would reduce this impact to a less-than-significant level. However, this is not feasible because the project's occupancy date cannot be delayed. Furthermore, extending the construction schedule would extend the period during which on- and off-campus residents would receive

construction noise and view the construction site. Therefore, extending the construction schedule is not feasible as a mitigation measure or as a project alternative. There are no other viable measures that would reduce the localized particulate matters impact. This impact would be significant and unavoidable.

5.2.2 Noise

Project construction would entail a large amount of activity in proximity to existing residential receptors, including on-campus residences west and north of the site and off-campus residences east of the site. Section 3.10 identified significant and unavoidable impacts due to the vibration levels and noise levels generated by the project, which would be received by certain receptors. LRDP EIR measures and project-specific mitigation measures were identified to reduce these impacts, but the impacts would remain significant after implementation.

Work proposed west of the site near the Lothian residence hall would include grading and paving. This work is anticipated to generate vibration levels that would exceed the 80 VdB threshold. To reduce the impact of vibration at student residences, the project would implement LRDP EIR measures. These measures would limit the hours of exterior construction activities and require residential facilities within 300 feet of work areas to be notified of approved construction. However, these measures would not reduce the actual vibration levels generated by construction. Project-specific mitigation measure NOI 1 would require high-vibration construction activity near the Lothian residence hall to be scheduled, to the extent feasible, during periods when students are not in residence there. Because this scheduling constraint may not be feasible, Lothian residents may still be subject to vibration levels in excess of the threshold. Therefore, this impact is significant and unavoidable. A similar conclusion was reached in the LRDP EIR. In this respect, the project would not present new impacts. However, the projected vibration levels received at Lothian Hall would be more severe than the levels anticipated in the LRDP EIR. Vibration levels received at receptors north and east of project construction are not anticipated to exceed thresholds because of the distance between these receptors and the vibration sources.

Section 3.10 also concluded that project construction would increase noise levels by more than the 10 dBA threshold at each of the studied receptors, including those representing on-campus residences west and north of the site and off-campus residences east of the site. This impact would be due to the large amount of construction equipment that would operate on the site during peak periods of activity (i.e., when multiple phases of construction would overlap), especially when construction would occur at or near the western and eastern edges of the site. Several LRDP EIR measures would reduce these noise levels and the impact of these noise levels, but the impact would remain significant. Accordingly, Section 3.10 identified six project-specific mitigation measures to reduce the noise impacts received on and off campus. NOI 3 would restrict construction to City-designated hours, which are more restrictive than those of the campus, and NOI 3 would appoint a construction noise liaison to respond to community concerns regarding construction noise. NOI 4 and NOI 5 would require mufflers and other noise attenuators on project construction equipment and the use of electrically powered equipment, respectively. NOI 6 would specify a construction-site speed limit, and NOI 7 would prohibit noise-producing signals on the job site. These project-specific measures would reduce the noise levels received by on- and off-campus receptors, further limit the hours when construction noise may be received, and improve community relations with respect to noise impacts. However, these mitigation measures would not reduce the project's noise levels to levels that would be below the relevant threshold. Therefore, this impact would be significant and

unavoidable. A similar conclusion was reached in the LRDP EIR. In this respect, the project would not present new impacts. However, the projected noise levels received by on- and off-campus receptors would be more severe than the levels anticipated in the LRDP EIR.

As discussed in Section 4.3.1, noise levels could be reduced by implementing a construction alternative that would avoid the multi-phase overlap, thereby reducing the amount of construction equipment that would be operating at one time. However, significant impacts would still occur at on- and off-campus receptors during grading activity at the western and eastern edges of the site. This alternative would not reduce noise impacts to a less-than-significant level. Furthermore, this alternative would extend the overall duration of project construction, thereby extending the period during which affected residents would be exposed to construction activity and minimizing any noise improvement. Therefore, this alternative is not being considered for implementation. There are no other viable measures that would reduce the project's construction noise impact. This impact would be significant and unavoidable.

5.2.3 Transportation and Traffic

The Watkins Drive/Big Springs Road intersection is anticipated to operate at an unacceptable level of service, LOS E, in the opening year of the project as a result of non-project-related traffic. The addition of project-related traffic is anticipated to increase delay at this intersection to a level beyond the applicable 2.0-second threshold, resulting in a significant impact. The installation of a signal at this intersection would improve service to an acceptable level. Section 3.13 identifies project-specific mitigation measure TR 1, under which the university would contribute a proportional share of the cost of signaling the intersection. This would reduce the project-related impact to a less-than-significant level. However, funding for a traffic signal at this location is under the control of the City, as is signal installation. UCR does not control the nature and timing of the recommended improvement. Because implementation of TR 1 is not the responsibility or within the jurisdiction of the university, the impact would remain significant and unavoidable.

The LRDP EIR deemed this impact significant and unavoidable because of the LRDP-related impacts at several intersections, including the Watkins Drive/Big Springs Road intersection. However, the project would not result in a volume of traffic that would be more than the volume anticipated in the LRDP EIR. A statement of overriding considerations was adopted to address the impacts of LRDP implementation, and this statement of overriding considerations remains valid.

5.3 Growth Inducement

As required by Section 15126.2(d) of the State CEQA Guidelines, an EIR must include a discussion of the ways in which the proposed project could directly or indirectly foster economic development or population growth and how that growth would, in turn, affect the surrounding environment. Chapter 5 of the LRDP EIR (beginning on page 5-4 of the LRDP EIR) states that growth can be induced in a number of ways, including the elimination of obstacles to growth or through the stimulation of a region's economic activity. Removing obstacles to growth can occur from the removal of infrastructure limitations or regulatory constraints that could result in growth that was unforeseen at the time of project approval.

The proposed project would increase student housing on university-owned property in conjunction with the growth anticipated by the LRDP. The LRDP identified an increase in on-campus housing to accommodate increased enrollment through 2015, with a goal of providing on-campus housing for 50 percent of enrolled students (Planning Strategy Land Use 4). After the project is occupied, the total housing inventory on campus would be 6,180 units, a level that would accommodate 30 percent of the student population rather than the current 26 percent (based on fall 2010 enrollment). The proposed project would help implement this 2005 LRDP goal by constructing an apartment-style housing facility to accommodate 810 students, which the LRDP anticipates as being enrolled at UCR with implementation of the LRDP. Accordingly, the project would not cause an 810-student increase in enrollment; rather, the project would house existing and projected students in on-campus facilities, reducing the burden on local off-campus housing and reducing the number of students who commute to the campus. The project would not directly induce growth beyond that anticipated in the LRDP. Additionally, the project represents infill development within an existing housing precinct. Accordingly, the project would not reduce impediments to growth beyond those analyzed in the LRDP. As discussed in Section 4.15, Utilities, of the LRDP EIR, all on-campus utility systems would be expanded and extended in conjunction with the additional building space that would be developed to serve the increased enrollment on the campus. Finally, the number of permanent jobs created by the project would be minimal and would not be substantial enough to induce growth off campus.

5.4 Significant Irreversible Environmental Changes

Section 15126.2(c) of the State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Specifically, this section states

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irrecoverable commitments of resources should be evaluated to assure that such current consumption is justified.

With respect to changes in the use of the land, the LRDP EIR concluded that implementation of the LRDP would result in the continued commitment of the UCR campus to university-related uses, thereby precluding non-university uses for the lifespan of the campus. Restoration of the campus to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment. Similarly, the project would commit some vacant and unused land to use by student housing and other associated facilities.

Resources that will be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels—all of which are associated with the construction effort for the project and its ongoing operation. With respect to project operation, the amount and rate of consumption of these resources would be reduced as a result of the project incorporating sustainable design strategies with a target LEED® Gold certification.

Chapter 6

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Chapter 7

References

7.1 Printed References

- Ambient Environmental, Inc. 2010. *Asbestos and Lead Survey for the Property Located at: Valencia Hill House*. December. Riverside, CA. Prepared for: University of California, Riverside.
- Berchard Long & Associates. Inc. 2002. *East Campus Infrastructure Detailed Project Program*. Prepared for University of California, Riverside Office of Design and Construction.
- C.H.J., Inc. 2010. *Phase I Environmental Site Assessment and Limited Subsurface Investigation*. June. Riverside, CA. Prepared for: University of California, Riverside.
- C.H.J., Incorporated. 2010. Geotechnical Investigation, Proposed Glen Mor 2 Student Apartments, University of California, Riverside. June. Prepared for: University of California, Riverside Facilities Design and Construction.
- California Air Resources Board (CARB). 2010a. Meteorological Wind Roses. Available: <www.arb.ca.gov/toxics/harp/met/WindRoses.ppt>. Accessed: December 7, 2010.
- . 2010b. Top 4 Measurements and Days above the Standard. Available: <<http://www.arb.ca.gov/adam/topfour/topfourdisplay.php>>. Accessed: December 7, 2010.
- . 2010c. Federal and State Ambient Air Quality Standards. September
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, version 3.1. Available: <http://www.climateregistry.org/>. January.
- California Energy Commission (CEC). 2006. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. December.
- California Irrigation Management Information System (CIMIS). 2010. UC Riverside Precipitation Station number 44. Available: <http://wwwcimis.water.ca.gov/cimis/frontDailyReport.do>. Accessed: 12/8/10.
- Chambers Group, Incorporated. 2010. Historic Resources Evaluation: Assessor Parcel Numbers 251-180-005-6, City of Riverside, Riverside County, California. November. Prepared for: University of California, Riverside.
- City of Riverside. 2009. *Traffic Impact Analysis Preparation Guide*. Final.
- City of Riverside. 2010. Minutes - *City/UCR Planning Development Coordinating Committee*. April 1. Riverside, CA.
- City of Riverside. 2010. *Riverside Activity Guide*. Fall 2010. Riverside, CA.
- Flores Lund Consultants. 2010. Preliminary Hydrology and Drainage Basin Calculations for Grading and Improvements at UC Riverside Glen Mor 2 Housing. Prepared for Sasaki Associates, Inc.

- Flores Lund Consultants. Undated. *UC Riverside Fire Water Hydraulic Model. Draft*. Prepared for University of California, Riverside Office of Design and Construction.
- ICF International. 2011. *Draft Biological Resources Assessment for the University of California, Riverside Glen Mor 2 Student Apartments, City of Riverside, Riverside County, California*. January.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis: Summary for Policymakers*. February.
- Kinder Morgan. 2009. "Working and Digging Near Pipelines" brochure, available at http://www.kindermorgan.com/public_awareness/Common_Files/EC_PA-BROCHURE-2009_WEB.pdf
- Kinder Morgan. 2010. Pipeline safety website. http://www.kindermorgan.com/ehs/pipeline_safety/. Accessed 12/11/10
- Kunzman Associates Inc., 2010. University of California Riverside – Glen Mor 2 Student Apartments Project Traffic Impact Analysis. December.
- Kunzman Associates. 2010. *Glen Mor 2 Student Apartments Project Traffic Impact Analysis*. Final. (4666a.) Orange, CA. Prepared for: UC Riverside.
- Lancaster, R.A. (Ed.) (1990). *Recreation, Park, and Open Space Standards and Guidelines*. Ashburn, VA. Prepared for National Recreation and Park Association.
- Natural Resources Conservation Service (NRCS), United States Department of Agriculture. 2010. *National Hydric Soils List by State*. <Available: ftp://ftp-fc.sc.gov.usda.gov/NSSC/Hydric_Soils/Lists/ca.xls>. Accessed July 30, 2010.
- PBS&J. 2002. *Spruce Street Sewer Capacity Study*. Prepared for City of Riverside Public Works Department.
- Philip Williams & Associates (PWA). 2001. University Arroyo Flood Control and Enhancement Plan: Summary Report of Hydrologic and Hydrodynamic Conditions and Evaluation of Alternatives. Prepared for the University of California Riverside.
- Pipeline and Hazardous Materials Safety Administration. 2010. *NPMS Public Viewer*. Available: <<https://www.npms.phmsa.dot.gov/PublicViewer/>>. Accessed: December 9, 2010.
- South Coast Air Quality Management District. 2008. *Multiple Air Toxics Exposure Study (MATES III)*. September.
- . 2007. *Air Quality Management Plans*. Available: <http://www.aqmd.gov/aqmp/AQMPintro.htm>.
- . 2006. *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology*. October.
- . 2003. *Localized Significance Threshold Methodology for CEQA Evaluations*. June.
- . 1993. *CEQA Air Quality Handbook*. November.

- Southern Pacific Pipe Lines, Inc. (Pipeline). 1989. Risk Assessment for an Existing Jet Fuel Pipeline as it Relates to the Moreno Valley Project Tract Map No. 24457. Prepared for Long beach Equities, Inc.
- State Water Resources Control Board. 2010. Final 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report).
- _____. 2006. California's 206 Clean Water Act Section 303(d) List of Water Quality Limited Segment's. Santa Ana Region. Available:
http://www.swrcb.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml. Accessed: 12/13/2010.
- http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/category5_report.shtml. August 4, 2010.
- U.S Department of Housing and Urban Development. 1996. *Siting of HUD-Assisted Projects Near Hazardous Facilities: Acceptable Separation Distances from Explosive and Flammable Hazards (HUD-1060-CPD)*. September.
- UC Regents. 2009. *University of California Police Department 2009 Annual Reports & Crime Statistics*. Available at
<http://police.ucsf.edu/images/stories/AnnualReport/2009AnnualReport/2009/2009%20Annual%20Report%20PDF.pdf>.
- UC Riverside Vice Chancellor of Student Affairs. 2010. *Good Neighbor Guidelines* website. Available at <http://conduct.ucr.edu/learnPolicies/Pages/GoodNeighborGuidelines.aspx>. Accessed December 2010
- United States Department of Transportation. Federal Highway Administration. Publication No. FHWA-PD-96-032. June 1996.
- Weiss, Jean T., Chet McGaugh, Andrew C. Sanders, Cin-Ty Lee, and Anthony Metcalf. 2000. *Birds of the UCR Botanic Gardens*. UC Riverside Botanic Gardens. Riverside, California. Accessed <http://gardens.ucr.edu/wildlife/birdlist.html>

7.2 Personal Communications

- Andrew Stewart. Parking Field Operations Manager. UC Riverside Transportation and Parking Services. Riverside, CA. December 9, 2010—e-mail to Tricia Thrasher, UC Riverside Office of Design and Construction.
- Bullock, Nita. Director of Physical Planning/Campus Landscape Architect. UCR. Riverside, CA. October 11, 2010—memorandum to Tim Brown and Yun Baird, UCR
- Corrin, Scott. Campus Fire Marshal. UC Riverside. Riverside, CA. January 24, 2011—electronic mail message to Tricia Thrasher, UCR, Office of Design and Construction.
- Corrin, Scott. Campus Fire Marshal. UC Riverside. Riverside, CA. August 6, 2010—electronic mail message to Tricia Thrasher, UCR, Office of Design and Construction.

- Deal, James H. Assistant Director, Purchased Utilities. UC Riverside, Department of Physical Plant. Riverside, CA. January 24, 2011—electronic mail message to Tim Brown, UCR, Office of Design and Construction.
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- Freese, Lt. John. UC Police Department, UC Riverside. Riverside, CA. January 20, 2011—electronic mail message to Tricia Thrasher, UCR, Office of Design and Construction.
- Martin, Jay. C.H.J., Incorporated. January 20, 2011— electronic mail message to Tricia Thrasher, UCR, Office of Design and Construction.
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