University of California Riverside
Glen Mor 2 Student Apartments Project
Final Environmental Impact Report

Volume 3 of 4 Draft Environmental Impact Report
Appendices A-K

SCH#2010081020

Prepared for:

UCR
Office of Design & Construction

Prepared by:

ICF INTERNATIONAL

UNIVERSITY OF CALIFORNIA
UC RIVERSIDE

Appendices

Appendix A
Notice of Preparation (NOP)/Initial Study, NOP Response Letters, and Scoping Meeting Transcript

Notice of Preparation/Initial Study

NOTICE OF PREPARATION FOR
AN ENVIRONMENTAL IMPACT REPORT

University of California, Riverside Glen Mor 2 Student Apartments Project

The University of California is the Lead Agency for this project under the California Environmental Quality Act (CEQA) and the University of California, Riverside (UCR) Office of Design and Construction (ODC) will be preparing an Environmental Impact Report (EIR) for the project identified above. UCR ODC is submitting this notice of preparation (NOP) to agencies, organizations, and individuals who may be interested in the project and, by this NOP, is requesting input as to the EIR's scope and content.

PROJECT LOCATION Northeastern portion of the UCR campus; northwest of the intersection of Valencia Hill Drive and Big Springs Road, in the City of Riverside

PROJECT DESCRIPTION In order to meet the UCR 2005 Long Range Development Plan (2005 LRDP) goal of housing 50 percent of students in on-campus housing, UCR is proposing to construct a student housing community on approximately 21 acres of University-owned property in the northeastern portion of the campus. The project entails construction and long-term operation of five residential buildings (810 student beds in 232 apartment-style units), a food emporium, a resident services office, a community building, and an executive retreat center. Associated improvements also include a parking structure for residents, circulation improvements, indoor and outdoor commons facilities, and restoration of a 0.4-mile stretch of an arroyo that flows along the site's northern boundary.

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. With project development, the project site would include housing and open space uses; however, the project proposal does not include recreation facilities. Accordingly, the project includes an LRDP Amendment to redesignate the recreation area for housing uses.

POTENTIAL ENVIRONMENTAL EFFECTS UCR prepared a program EIR to analyze the environmental effects of the 2005 LRDP (SCH Number 2005041164). The EIR for Glen Mor 2 will be prepared as a tiered document under the 2005 LRDP EIR. Based on initial scoping by ODC and the initial study environmental checklist prepared for the project, ODC believes the project may result in project-specific environmental effects that were not fully examined in the programmatic LRDP EIR, including impacts related to aesthetics, air quality, biological resources, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use/planning, noise, public services, recreation, transportation/traffic, and utilities/service systems. ODC will incorporate project-specific analysis of these issues into the project EIR. The detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://pdc.ucr.edu.

HOW TO COMMENT
Written responses on the scope of the EIR can be mailed to the address listed below:

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 will also be received electronically via email at tricia.thrasher@ucr.edu. Time limits mandated by state law require that responses to this NOP be received within 30 days of receipt of this notice.

A scoping meeting will be held during the latter part of the 30-day comment period. Further information as to time and location will be posted on the ODC website no later than August 15, 2010.

QUESTIONS?
Any questions regarding this project or the NOP may be directed to Ms. Thrasher at the e-mail address noted above, or by phone at 951.827.1484.

Mailing List - UC Riverside Glen Mor 2 Student Housing Project

California Department of
Transportation, District 8
Attn: Planning Division
464 W. 4th St
San Bernardino, CA 92401

California Department of Fish and
Game, Inland Deserts Region
3602 Inland Empire Blvd, Suite C-220
Ontario, CA 91764

South Coast Air Quality Management
District
CEQA Inter-Governmental Review
21865 Copley Dr.
Diamond Bar, CA 91765

City of Riverside
Planning Department
Attn: Diane Jenkins
3900 Main Street, 3rd Floor
Riverside, CA 92522

City of Riverside
Public Works, Engineering
Attn: Rob Van Zanten
3900 Main Street, 4th Floor
Riverside, CA 92522

City of Riverside
Public Works, Traffic Engineering
Attn: Cliff Yarges
3900 Main Street, 4th Floor
Riverside, CA 92522

City of Riverside
Public Utilities, Water Engineering
Attn: Oscar Khoury
3901 Orange Street
Riverside, CA 92501

Riverside County Planning Department
Attn: Matt Straite
4080 Lemon Street
Riverside, CA 92502-1629

U.S. Army Corps of Engineers
Los Angeles District, Regulatory
915 Wilshire Blvd., Suite 1101
Los Angeles, CA 90017

California Native American Heritage
Commission (NAHC)
Attn: Dave Singleton
915 Capitol Mall, Room 364
Sacramento, CA 95814

California Department of Toxic
Substances Control
Attn: Guenther Moskat
101 I Street, 11th Floor
Sacramento, CA 95812

Regional Water Quality Control Board
Santa Ana Region
Attn: Mark Adelson
3737 Main Street, Suite 500
Riverside, CA 92501-3348

Riverside County Transportation
Commission
Attn: Steve Keel
4080 Lemon Street, 3rd Floor
Riverside, CA 92502-2208

Southern California Association of
Governments (SCAG)
Riverside County Regional Office
3403 10th Street, Suite 805
Riverside, CA 92501

Riverside County Flood Control &
Water Conservation District
Attn: Teresa Tung, Sr. Civil Engineer
1995 Market Street
Riverside, CA 92501

Riverside County Clerk
Attn: Tammy Marshall
2702 Gateway Drive
Riverside, CA 92507

Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Anna Hoover, Cultural Analyst
Pechanga Cultural Resources
PO Box 2183
Temecula, CA 92593

Weston Maughan
Address on file at UCR ODC

Project Description

Introduction

The University of California, Riverside (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) identifies a goal of housing 50 percent of students in campus housing (both on-campus housing and nearby campus-controlled housing). The proposed project helps implement this important aspect of campus development by constructing an apartment-style housing facility to accommodate 810 students in 232 apartment-style units. Associated improvements include a parking structure for residents, circulation improvements, indoor and outdoor commons facilities, a food emporium, and an executive retreat center. The proposed apartment units are intended to house graduate students and upper class undergraduates. The project also entails restoration of a 0.4-mile stretch of an arroyo that runs through the northern part of the site, implementing UCR's goals and planning strategies for resource conservation stated in the LRDP.

Project Location and Environmental Setting

The project is located within the UCR campus in the northeastern part of the City of Riverside (City), in western Riverside County, 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, 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 research fields, but 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 recreation 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 1 identifies the campus location in the regional context.

The project site consists of approximately 21 acres on the East Campus, northwest of the Valencia Hill Drive/Big Springs Road intersection. Campus housing developments (Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills) 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 east site boundary, with off-campus single- and multiple-family residential development situated across that street. Figure 2 identifies the project site in the context of existing campus facilities and adjacent uses. The larger surrounding area can be characterized by a boundary following Valencia Hill Drive and Watkins Drive, with the area to the west and south of this boundary characterized by largely developed campus lands and the area to the 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 of Riverside's Islander Park situated beyond along the north side of Watkins Drive. The Box Springs Mountains lie beyond the developed area to the 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 (Lot 14) and a vacant single-family residence. A paved driveway to the residence is located off Valencia Hill Drive, just south of Goins Court. A wireless service antenna placed adjacent to the residence in 2006 will be removed in conjunction with 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 dominant features being a ridge running generally parallel to Big Springs Road and a natural drainage feature running along the north edge of the site. The ridge rises approximately 35 feet to 50 feet above Big Springs Road and the generally level portion of the site currently occupied by Parking Lot 14. From Valencia Hill Drive, the ridge lies perpendicular to the street, with site grades ranging from on-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 natural drainage course (referred to as the “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 due to development in off-campus tributary areas.

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 includes five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. Table 1 provides a statistical summary of the proposed buildings and Figure 3 presents the proposed site layout. The following provides further explanation of each component of the proposed project, including the parking structure and landscaping.

The five residential buildings would be arranged in terraces around a series of connected plazas. Each building would consist of five stories, with an overall height of 55 feet. Building D (along the arroyo near the Lothian residence hall) would also include a partial basement. Individual building footprints range from 7,475 square feet to 13,850 square feet, with 144 to 186 beds per building. Buildings are comprised of two-bedroom and four-bedroom apartments, with common living and kitchen facilities for each suite. Four additional beds are also provided for professional staff (such as resident directors or faculty in residence). Stepped grades, elevators, ramps and stairs will be incorporated to accommodate movement within and between buildings.

The Resident Services Office is located in the center of the site, at the arrival court. This facility houses reception and administrative support spaces (including resident services staff, resident life staff, and conference staff), as well as resident mailboxes. . This building would be 30 feet in height (two and a half stories), with a footprint of 5,140 square feet and an overall area of 9,725 square feet (6,880 assignable square feet). The building would be accessible from multiple levels with the terraced site.

Table 1
Glen Mor 2 Student Housing Project
Building Program Statistical Summary

Building	Use	GSF[1]	ASF[2]	Occupants	Footprint (sf)	Floors	Height (ft)
A	Food Emporium	7,100	4,600	120	7,000	1	20
B	Housing	64,840	46,000	156	12,540	5	55
C	Housing	58,500	42,560	140[3]	12,000	5	55
D	Housing	75,850	55,610	186	13,790	5[4]	55[6]
E	Residential Services Office	9,725	6,880	85	5,140	2.5	30
F	Community Building	5,540	3,825	65	3,010	2	25
G	Housing	57,370	42,885	140[3]	7,475	5	55
H	Housing	74,790	54,000	188	13,850	5	55
J	Executive Retreat	2,700	2,190	52	2,700	1	20
Parking Structure	Parking	190,000		597	66,415	3[5]	21

Table 1 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 and excludes space devoted to walls, columns, corridors, restrooms, and similar building support spaces.

[3] Buildings C and G each include two Resident Director units.

[4] building has partial basement

[5] not including basement

[6] First level is at ground level, with two raised decks

The Community Building provides meeting rooms, fitness facilities, an academic resource center, laundry and vending services, and an outdoor pool. Centrally located, this building is proposed to consist of two levels (25 feet overall height) with 5,540 square feet of gross floor area (3,825 assignable square feet). The building is accessible from the lower level at the pool deck and from the upper ground floor level of the adjoining residential building (Building G).

The Food Emporium is intended to provide café-style food service and limited convenience retail services in a single-story structure at the southwest corner of the site. The 7,100 square foot facility

(4,600 assignable square feet) is intended to serve not only the on-campus community, but would also be accessible to the off-campus community.

The Executive Retreat Center is proposed in the location of the existing vacant single-family residence. This existing structure is proposed to be demolished as part of the project. The proposed one-story structure of approximately 2,700 square feet (2,190 assignable square feet) has been designed to relate to the scale of homes in the nearby single-family residential neighborhood. This facility would include a meeting room for campus retreats and meetings, accommodating up to 52 attendees. The structure will include two studio apartments (approximately 400 square feet each) for short-term use by visiting staff and faculty. Four parking spaces will be provided adjacent to the building.

Project improvements include a new parking garage to be constructed over the eastern portion of the existing surface lot, also displacing a portion of the existing landscape element along Big Springs Road. The proposed garage would provide parking on ground level, with two decks above. The finished surface of the second deck would be 21 feet above ground level. The garage will provide 597 spaces (574 for residents, 11 for visitors, and 12 flexible spaces that may be assigned for resident permits or visitors).

Site landscape will include three primary elements – the streetscapes, the housing site area, and the arroyo restoration. The streetscapes will include a minimum 100-foot landscape buffer including mixed-species tree plantings along the Valencia Hill Drive frontage, with the existing formal, double row of trees to remain in place along the Big Springs Road frontage. The housing site area landscaping will include traditional treatments, such as ground covers, small useful turf areas, planters, seatwalls, walkways, stairs and ramps, plazas, trees and shrubs consistent with the UCR Campus Design Guidelines, for the developed Glen Mor 2 site, as well as edge areas adjacent to the Glen Mor 1, Pentland Hills and Lothian complexes. The arroyo area will be restored to a more natural condition, with removal of non-native species, stabilization of banks, and restoration plantings based on a native-plant palette appropriate to the intermittent stream feature. The arroyo restoration area encompasses the 0.4-mile reach from Valencia Hill Drive to the existing culverted crossing adjacent to Lothian Hall.

Access and circulation consider pedestrian movement, emergency/maintenance access, and parking access. Pedestrian movement will be accommodated by a network of walks and plazas throughout the site, including two pedestrian bridges across the arroyo. Emergency and maintenance access will be accommodated by a perimeter drive, and may also use elements of the pedestrian network. Access to the parking garage is provided at two locations on Big Springs Road, one off the arrival court at the west end of the structure and another entry-only access at the southeast corner. The existing driveway on Valencia Hill Drive will be eliminated. Vehicular access to the Executive Retreat would be accommodated by a new limited access driveway parallel to Valencia Hill Drive, outside the 100-foot setback.

Site design takes into account the existing landforms, with buildings set to accommodate the natural changes in elevations and defining connected terraces within the landscape. The proposed site design would entail approximately 44,500 cubic yards of cut and approximately 26,000 cubic yards of fill. Approximately 18,000 cubic yards of excess material would be exported from the site.

Relationship to 2005 Long Range Development Plan and EIR

California law requires all University of California campuses to prepare an Environmental Impact Report (EIR) for University Long Range Development Plans (LRDPs), which 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" (Public Resources Code (PRC) 21080.09). UCR's 2005 LRDP projected an increase in campus attendance through planning year 2015/16 and campus development to accommodate that increase. UCR prepared a program EIR to analyze the environmental effects of the 2005 LRDP (SCH Number 2005041164). The 2005 LRDP EIR was certified by the UC Board of Regents on November 17, 2005, the same day the Regents adopted the 2005 LRDP.

The 2005 LRDP projects an enrollment of 25,000 students for the 2015/16 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 19,400 (based upon Fall 2009 statistics), which is consistent with the projections contemplated in the 2005 LRDP and LRDP EIR. Considering the enrollment increase projected to occur by 2015, the 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 approximately 500 beds in apartment-style accommodations (Glen Mor 1) and has acquired two apartment complexes on Canyon Crest Drive near Linden Street, providing another 660 beds in the Falkirk complex (416 beds) and the Summer Ridge Apartments (244 beds, to be named Oban Student Apartments). With the proposed Glen Mor 2 project, the total campus housing inventory would be 6,180 units, increasing the on-campus housing inventory to accommodate 32 percent of the student population, compared to the current 28 percent (based on Fall 2009 enrollment). The scale and timing of this proposed housing development is consistent with that contemplated under the LRDP EIR.

The 2005 LRDP EIR analyzed the impacts of implementation of the 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 program-level mitigation measures adopted for the 2005 LRDP EIR, and (3) evaluate any changes in project definition, location or setting from that assumed in the 2005 LRDP EIR. The EIR for Glen Mor 2 Student Apartments will be prepared as a tiered document under the 2005 LRDP EIR. The related initial study examines the project in the context of the 2005 LRDP EIR, including its mitigation program, to identify areas where the project's environmental impacts are adequately covered by the programmatic analysis and mitigation measures presented in the program EIR, and areas where additional project-specific analysis is needed to achieve proper CEQA environmental review for the project.

2005 LRDP Planned Land Use and Proposed Amendment

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 4). The type and general location of housing proposed in the Glen Mor 2 Student Apartments project is consistent with the existing *Family, Apartment Housing and Related Support* designation. Similarly, the arroyo restoration aspect of the proposed improvements is consistent with the existing *Open Space* designation. The proposed parking use is considered an allowed use within the housing designation

The *Athletics and Recreation* designation under the adopted LRDP is intended to provide proximate location of fields to serve recreational demand by students residing in the East Campus housing precinct. The proposed project includes an LRDP Amendment to redesignate the area (approximately 4.8 acres) designated for *Athletics and Recreation* to *Family, Apartment Housing and Related Support*. The forthcoming EIR will address the environmental impacts of this proposed LRDP amendment. Please see initial study checklist subjects aesthetics, air quality, hydrology and water quality, land use and planning, noise, population/housing, public services, recreation, utilities/service systems and traffic for further discussion of the proposed LRDP amendment.

Applicability of 2005 LRDP EIR Mitigation Program

The mitigation program presented in the 2005 LRDP EIR (Chapter D of the Final EIR) presents Planning Strategies (PS), Programs and Practices (PP), and Mitigation Measures (MM) that apply to various campus undertakings during implementation of the 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 following discussion summarizes the PSs, PPs, and MMs that may be applicable to the project:

- Planning Strategies – The proposed project directly implements 2005 LRDP PS Land Use 4, which promotes the goal of housing 50 percent of students in campus-controlled housing, and conforms to PS Land Use 7 by replacing surface parking with a parking structure. Project design conforms 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 & Community 1, which call for landscaped buffers and general site design considerations at campus edges. The extent of the project's preservation of mature trees, related to PS Conservation 4, is not known at this time and will be further analyzed in the EIR. The project incorporates bicycle parking facilities and connections to existing pedestrian and bicycle routes pursuant to PS Transportation 3 and Transportation 5, respectively.
- 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 discussions in the initial study checklist. These measures recognize established campus programs for considerations such as design development, contract award and administration, compliance with 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 the proposed project are incorporated into the project and are identified in the individual analysis discussions in the initial study checklist. These measures relate to project design and contracting practices, air emission minimization provisions in construction contracts, avoidance and minimization of impacts to 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 the EIR analysis implementation of these measures is assumed as part of the project.

For some of the LRDP Programs and Practices and Mitigation Measures, it is possible at this juncture in project environmental evaluation to confirm that with implementation of the applicable element, project impacts will be less-than-significant, in accordance with the conclusions of the 2005 LRDP EIR. For others, additional environmental analysis will be necessary to inform a sufficient conclusion on the project's level of significance. Further detail on relevance of applicable Programs and Practices and Mitigation Measures is provided in the individual analysis discussions in the initial study checklist.

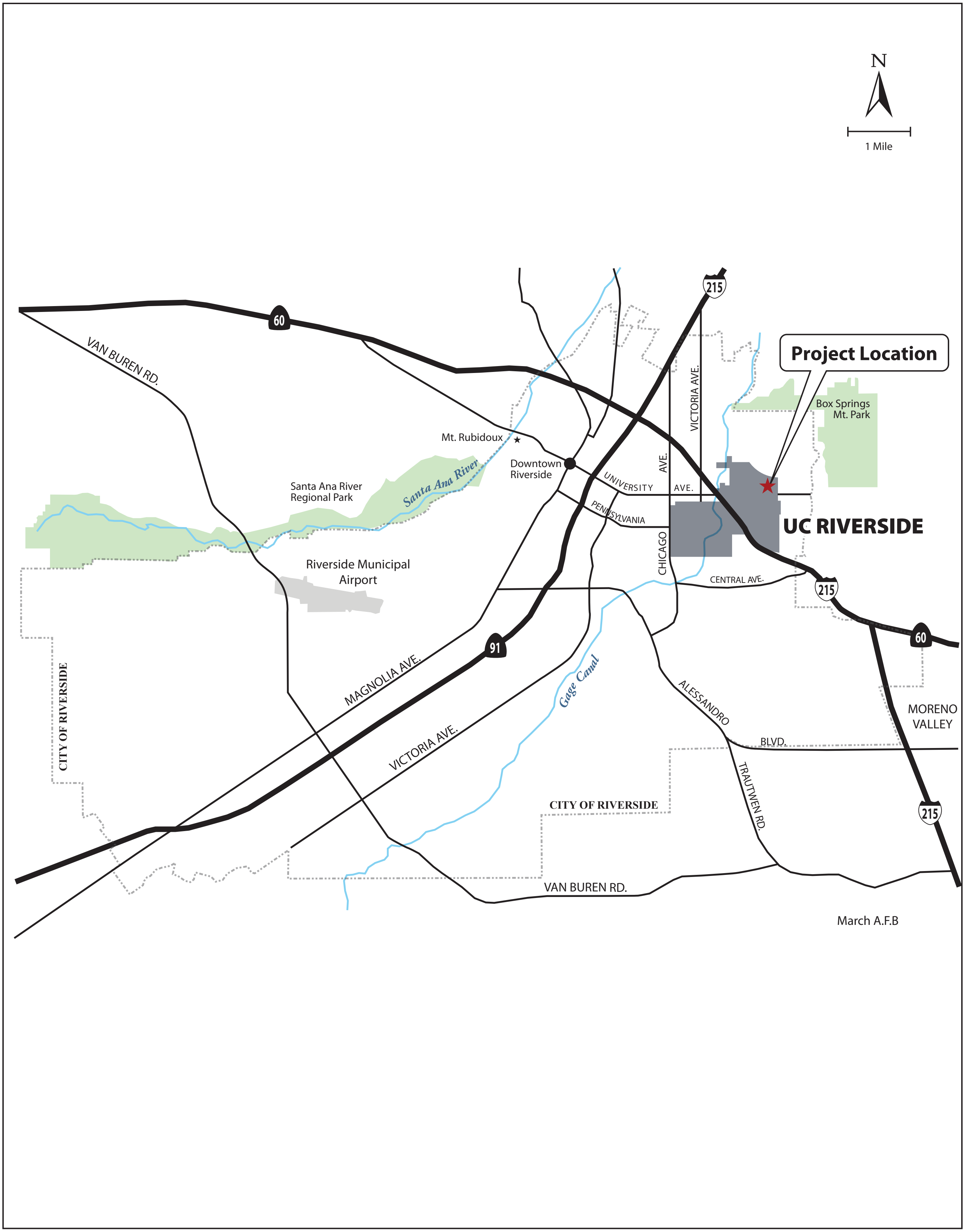

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Figure 1
Regional Location
UCR Glen Mor 2 Student Apartments

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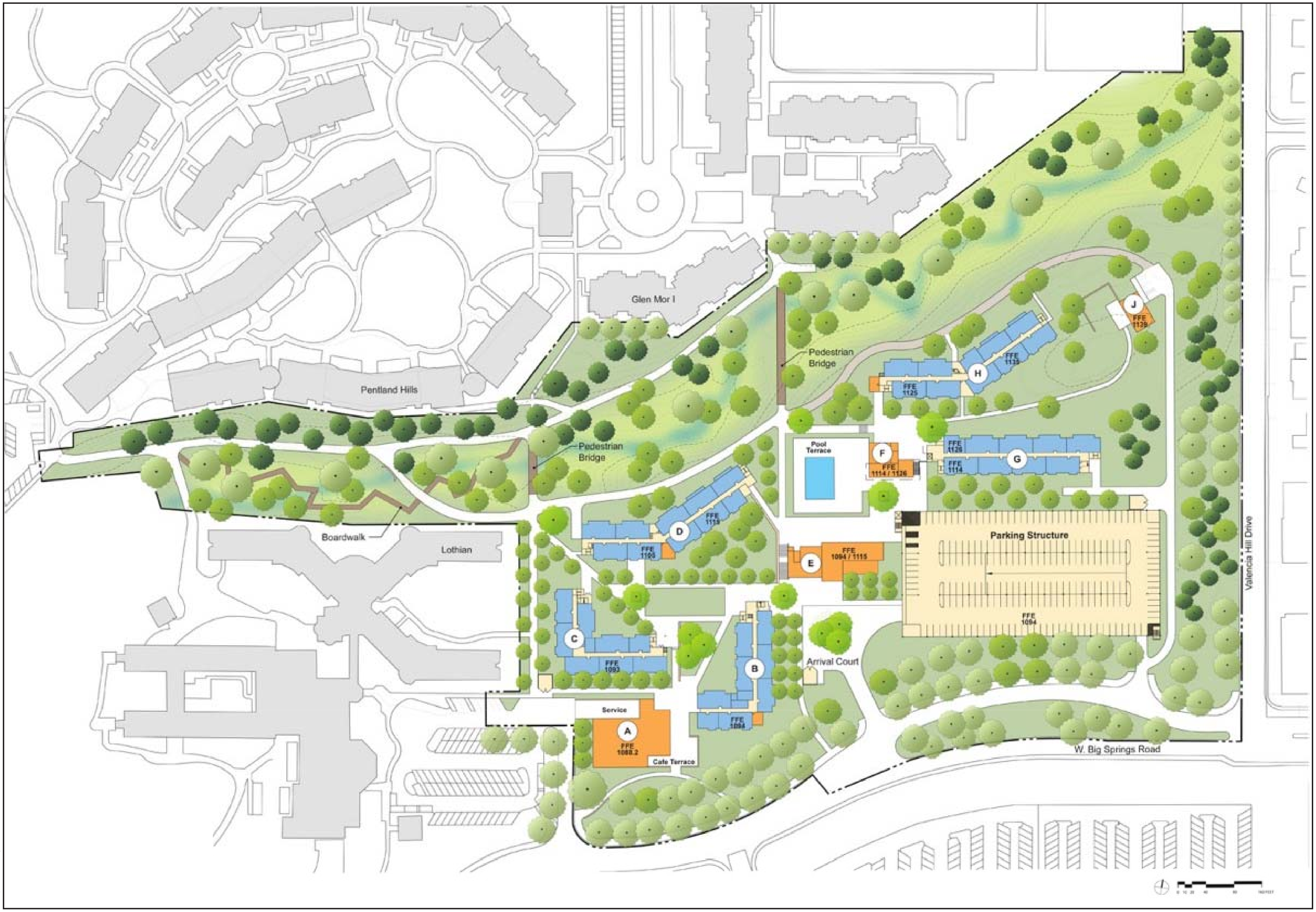
ICF INTERNATIONAL

Figure 2
Project Setting
UCR Glen Mor 2 Student Apartments



Graphics/Projects/00374.10_UCRGlenMor2/NOP (06-10) SS

ICF INTERNATIONAL

Figure 3
Site Plan
UCR Glen Mor 2 Student Apartments

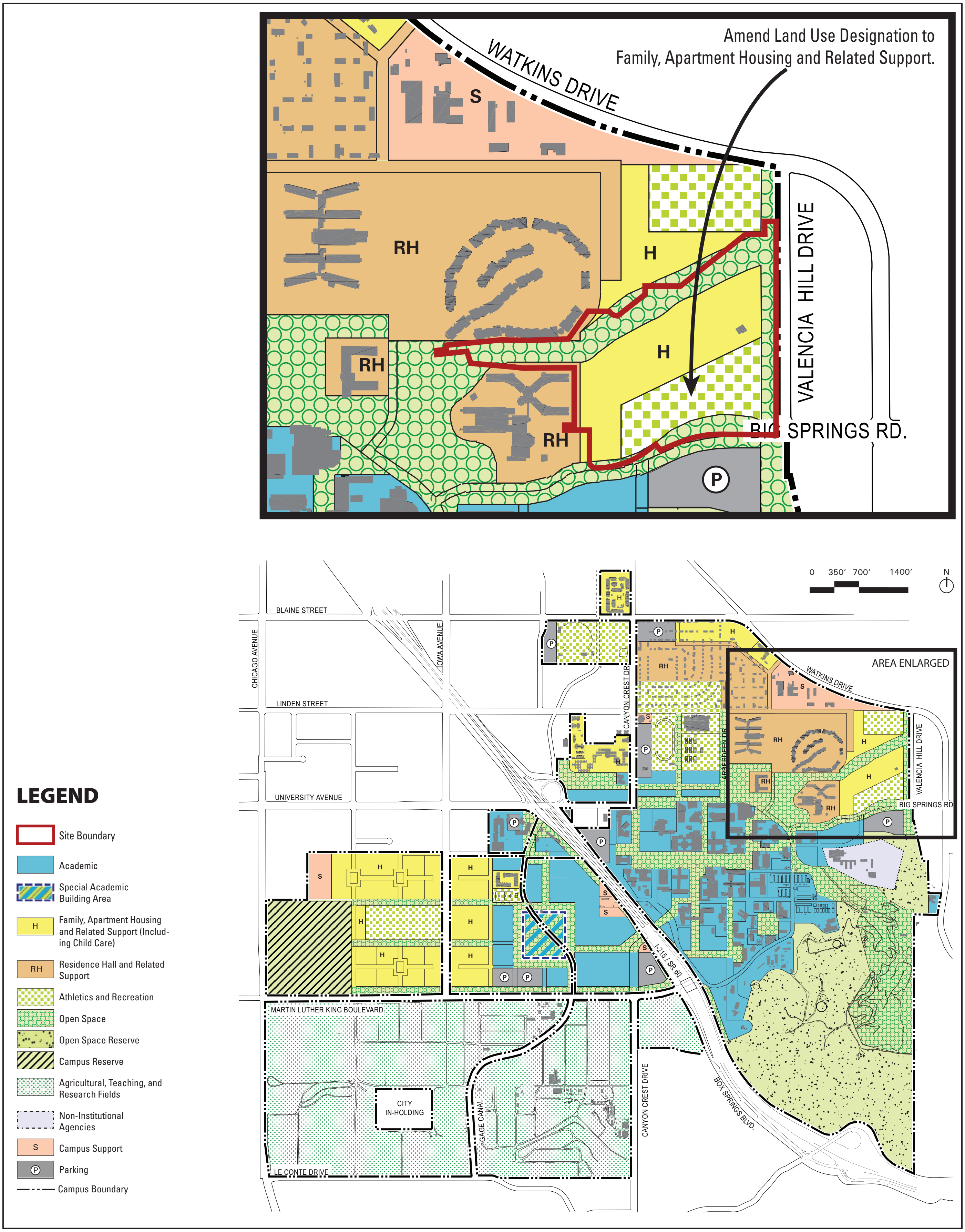


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Figure 4
Long Range Development Plan – Land Use Plan
UCR Glen Mor 2 Student Apartments

UC CEQA Checklist
For Addendum, Tiered EIR, or Straight-to-Findings

I. PROJECT INFORMATION

1. **Project title:** Glen Mor 2 Student Apartments

2. **Lead agency name and address:**

   The Regents of the University of California
   1111 Franklin Street, 12th Floor
   Oakland, CA 94607

3. **Contact person and phone number:** Tricia D. Thrasher, ASLA, LEED AP

   (951) 827-1484

   University of California, Riverside
   Office of Design and Construction
   3615-A Canyon Crest Drive
   Riverside, CA 92507

4. **Project location:** Northwest of Valencia Hill Drive and Big Springs Road

5. **Identification of previous EIRs relied upon for tiering purposes (including all applicable LRDP and project EIRs) and address where a copy is available for inspection.)**

   University of California, Riverside 2005 Long Range Development Plan Final Environmental Impact Report (SCH No. 2005041164), certified November 17, 2005. Available for inspection at the Office of Design and Construction, 3615-A Canyon Crest Drive, Riverside or at http://lrdp.ucr.edu/.

II. PROJECT LOCATION AND DESCRIPTION

1. **Description of project:**
   The University of California, Riverside (UCR) proposes construction of an 810-bed (232 apartment-style units) student housing community on approximately 21 acres of University-owned property on the eastern edge of campus. Associated improvements include a parking structure for residents, circulation improvements, indoor and outdoor commons facilities, a food emporium, and an executive retreat. The project also entails restoration of a 0.4-mile stretch of an arroyo that runs through the northern part of the site. A detailed project description, including exhibits identifying the project setting and proposed site layout, is provided as a separate component of the notice of preparation.

2. **Project Objectives:**

- Progress toward 2005 Long Range Development Plan (LRDP) goal of providing on-campus housing for 50 percent of students
- Create a cohesive housing community for occupancy by Fall 2013
- Establish a clear network of non-vehicular connections, considering the immediate housing precinct and the larger campus
- Provide resident parking consistent with 2005 LRDP ratios
- Protect and restore the on-site arroyo
- Incorporate sustainable design strategies, with a target LEED Silver Certification
- Minimize potential adverse consequences to off-campus neighborhoods and encourage community interaction

3. **Surrounding land uses and environmental setting:**

The project site consists of approximately 21 acres on the East Campus, northwest of the Valencia Hill Drive/Big Springs Road intersection. Campus housing developments (Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills) 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 east site boundary, with off-campus single- and multiple-family residential development situated across that street.

The larger surrounding area can be characterized by a boundary following Valencia Hill Drive and Watkins Drive, with the area to the west and south of this boundary characterized by largely developed campus lands and the area to the 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 of Riverside's Islander Park situated beyond along the north side of Watkins Drive. The Box Springs Mountains lie beyond the developed area to the east of the campus and form a dramatic backdrop to the campus and the adjacent community.

4. **Discretionary approval authority and other public agencies with required approvals**

- University of California Board of Regents, EIR certification, LRDP amendment, and project approval
- United States Army Corps of Engineers: Clean Water Act Section 404 Permit
- California Department of Fish & Game: Section 1602 Streambed Alteration Agreement
- California Regional Water Quality Control Board, Clean Water Act Section 401 Water Quality Certification

5. **Consistency with the LRDP:**

The proposed project includes an amendment to the LRDP Land Use Plan to redesignate a portion of the site that is currently designated for *Athletics and Recreation* uses. See the discussion of checklist item 10, Land Use and Planning, for further detail.

III. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact for which the determination is "Additional Project-level Impact Analysis Required" as indicated by the checklist on the following pages.

■	Aesthetics	☐	Agriculture and Forestry Resources	■	Air Quality
■	Biological Resources	☐	Cultural Resources	■	Geology/Soils
■	Greenhouse Gas Emissions	■	Hazards & Hazardous Materials	■	Hydrology/Water Quality
■	Land Use/Planning	☐	Mineral Resources	■	Noise
☐	Population/Housing	■	Public Services	■	Recreation
■	Transportation/Traffic	■	Utilities/Service Systems	■	Mandatory Findings of Significance

IV. DETERMINATION: (To be completed by lead agency)

On the basis of the initial evaluation that follows:

■ I find that the proposed project could have a potentially significant impact on the environment that has not been adequately analyzed in the certified 2005 Long Range Development Plan EIR. A TIERED ENVIRONMENTAL IMPACT REPORT will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) have been addressed adequately in an earlier environmental document pursuant to applicable standards, and (2) either no changes or no substantial changes to the project are proposed, and no new information of substantial importance has been identified. An ADDENDUM and/or FINDINGS will be prepared.

Tricia D. Thrasher
Signature

8/3/10
Date

Tricia D. Thrasher, Princ. Env. Project Mgr.
Printed Name

University of California, Riverside
For

V. EVALUATION OF ENVIRONMENTAL IMPACTS

The University has defined the column headings in the Initial Study checklist as follows:

A) “Additional Project-level Impact Analysis Required” applies where the project may result in an environmental impact that was not considered in an earlier document, or not considered in sufficient detail, and/or substantial project changes, changed circumstances, or new information of substantial importance triggering CEQA Section 15162 has occurred since certification of the earlier document.

B) “Project Impact Adequately Addressed in Earlier Environmental Document” applies where the potential impacts of the proposed project were adequately addressed in an earlier environmental document and either no changes or no substantial changes to the project are proposed, and no new information of substantial importance has been identified.

Impact Questions and Responses

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
1. AESTHETICS – Would the project:		
a) Have a substantial adverse effect on a scenic vista?	■	□
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	□	■
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	■	□
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	■	□

a) The analysis provided in the LRDP EIR (page 4.1-14) states that scenic vistas that could be affected by LRDP implementation are "limited to panoramic views of the Box Springs Mountains, from publically accessible viewpoints." While the discussion of this impact (beginning on page 4.1-17) specifically mentions views from the Carillon Mall and Lower Intramural fields, site inspection reveals views of the Box Springs Mountains from the project site, as well. The LRDP EIR (page 4.1-18) concludes that implementation of Program and Practice (PP) 4.1-1 (implementing Campus Design Guidelines) would reduce potential program-wide impacts to less than significant. Discussion of this impact will be incorporated into the forthcoming project EIR, to provide more detailed evaluation of specific project design features directed at preserving views of the Box Springs Mountains. The project-level evaluation will provide a basis for confirmation that the program-level conclusion from the LRDP EIR that the impact is less than significant remains valid for the proposed site development. In the event the project-level analysis identifies any new or more severe adverse impacts that were not addressed in the LRDP EIR, the forthcoming EIR will also identify additional project-level measures to lessen such impacts.

b) The LRDP EIR (page 4.1-17) states that the campus is bisected by the I-215/SR-60 freeway and bounded by University Avenue, Canyon Crest Drive, Blaine Street, Watkins Drive, Valencia Hill Drive, Le Conte Drive, and Chicago Avenue, none of which are officially designated or identified eligible State scenic highways, and concludes that this impact would be less than significant. There has been no change to the designation of these facilities, including Watkins Drive and Valencia Hill Drive in the vicinity of the project site, as scenic highways since certification of the LRDP EIR. This impact is adequately addressed in the LRDP EIR and further analysis is not warranted in the project EIR.

c) The LRDP EIR (page 4.1-24) acknowledges the proposed development of new student housing at this location and concludes that the loss of undeveloped open space and the loss of views across the site from Valencia Hill Drive have the potential to degrade the visual character and quality at this location. LRDP Planning Strategies Open Space 4 (landscape buffers), Campus and Community 1 (sensitive land use transitions), Conservation 1 (protect native habitat, remnant arroyos and mature trees), Conservation 2 (sensitive building siting), Development Strategy 1 (design review), Program and Practice (PP) 4.1-1 (implementing Campus Design Guidelines), PP 4.1-2(a) (implementing Campus Landscape Master Plan) and PP 4.1-2(b) (relocate mature trees) are identified as contributing to reduction of potential visual impacts of proposed development at this location. The LRDP EIR concludes that with implementation of these measures, development of new housing in this area would not substantially degrade the visual character or quality at this location.

   With the additional detail now available as to proposed site improvements, the forthcoming EIR will include a project-level evaluation to confirm that the program-level conclusion from the LRDP EIR that the impact is less than significant remains valid for the proposed development. In the event the project-level analysis identifies any new or more severe adverse impacts that were not addressed in the LRDP EIR, the forthcoming EIR will also identify additional project-level measures to lessen such impacts.

d) Page 4.1-32 of the 2005 LRDP EIR states that development of student housing within areas that are largely undeveloped would introduce new sources of light and glare and that implementation of the LRDP Planning Strategies Open Space 4 (landscape buffers) and Campus and Community 1 (sensitive land use transitions) would reduce impacts to a less-than-significant level. MM 4.1-3(a) requires project-specific review of building materials and prohibits mirrored, reflective glass in all campus buildings to prevent glare. With respect to lighting, MM 4.1-3(b) requires project-specific review of lighting plans and calls for lighting to be directed to prevent spillover onto adjacent residential areas. MM 4.1-3(c) requires parking area design to prevent headlights from shining on adjacent uses.

   The project would result in new sources of light, including a multi-level parking structure and security lighting associated with project structures and outdoor use areas. The project's visual impact analysis will consider the lighting plan and its effect on neighboring off-site uses. The forthcoming EIR will also consider proposed building materials and the potential to produce a new source of glare. The project-level evaluation will provide a basis for confirmation that the program-level conclusion from the LRDP EIR that the impact is less than significant remains valid for the proposed site development. In the event the project-level analysis identifies any new or more severe adverse impacts that were not addressed in the LRDP EIR, the forthcoming EIR will also identify additional project-level measures to lessen such impacts.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
2. AGRICULTURE AND FOREST RESOURCES – Would the project:		
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the CA Resources Agency, to non-agricultural use?	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	■

a) The LRDP EIR (page 4.2-7) identifies a significant and unavoidable impact from developing Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. However, as shown on Figure 4.2-1 of the LRDP EIR, *Farmland on the UCR Campus*, there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project site. Accordingly, the project would not convert Farmland to a non-agricultural use and does not contribute to the program-level impact. The project would therefore have no impact and further analysis in the project EIR is not warranted.

b) The LRDP EIR (page 4.2-8) states that no portion of the campus is under a Williamson Act contract due to a University tax exemption and no portion of the campus is specifically designated for agricultural use, despite ongoing agricultural uses on the campus. Implementing the LRDP, including developing the project site, was found to have no impact with respect to this issue. Consistent with the disclosure in the LRDP EIR, there are currently no Williamson Act contracts or agricultural zoning on the project site, and impacts would not occur. Further discussion in the project EIR is not required.

c) This is a new threshold added to the State CEQA Guidelines in March 2010, and the LRDP EIR did not address this issue. The proposed project site is not zoned for forest land or timberland, and does not support forest or timberland resources. As such, the proposed project would not involve or require rezoning of forest land or timberland and no impact would occur. Further discussion is not warranted in the EIR.

d) See response to item c, above.

e) Discussion of this issue in the LRDP EIR (Section 4.2, beginning on page 4.2-9) acknowledged LRDP provisions for long-term preservation of certain agricultural resources on the West Campus and the lack of off-campus agricultural lands that may be affected by campus development. On this basis, the LRDP EIR concluded impacts in this regard would be less than significant. The project site is well-removed from agricultural resources on the West campus and there are no agricultural lands in nearby off-campus areas. Accordingly, the project would not convert Farmland to a non-agricultural use and would not alter the program-level impact conclusion. Further analysis in the forthcoming project-level EIR is not warranted.

The site and surrounding area do not support forest lands. This is a new threshold added to the State CEQA Guidelines in March 2010, and the LRDP EIR did not address this issue. Considering the absence of the relevant resource, impacts would not occur and further discussion is not required in the project-level EIR.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
3. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:		
a) Conflict with or obstruct implementation of the applicable air quality plan?	■	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	■	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	■	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	■	☐
e) Create objectionable odors affecting a substantial number of people?	☐	■

a) The project is located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) in the South Coast Air Basin. The Basin is designated as a federal-level nonattainment area for ozone, carbon monoxide (CO), and particulate matter 10-microns or less (PM_{10}), and the site is subject to requirements of the SCAQMD air quality plans. The LRDP EIR (page 4.3-20) concluded that the 2005 LRDP was consistent with the 2003 AQMP and that implementing the LRDP would result in a less-than-significant impact on the SCAQMD plans with implementation of several LRDP Planning Strategies and Programs and Practices, including encouraging on-campus housing development and encouraging various alternative transportation efforts.

   The proposed project would generate pollutant emissions during construction activities and ongoing operation. While the program level EIR determined that implementation of the 2005 LRDP would not conflict with the growth projections of the 2003 Air Quality Management Plan, the Plan has since been updated (2007) and additional evaluation would be necessary to determine consistency with the updated air quality plan, and to update the significance conclusion. The results of a project-specific air quality analysis will be presented in the forthcoming EIR. The project-specific analysis will be completed in accordance with methodologies and requirements outlined in the current SCAQMD guidance documents - CEQA Air Quality Handbook, Localized Significance Threshold Methodology for CEQA Evaluations, and Particulate Matter (PM) 2.5 Significance Thresholds and Calculations Methodology.

b) The LRDP EIR (page 4.3-20) concludes that implementing the LRDP would result in a significant and unavoidable impact due to anticipated violations of air quality standards for both construction and operation phase activities. The LRDP EIR lists measures that would reduce construction emissions, including Mitigation Measure (MM) 4.3-2, which requires emissions-reducing measures identified in Programs and Practices (PP) 4.3-2(a) through PP 4.3-2(c) to be included in project-specific construction plans, but concludes that these would not reduce program-level impacts to less-than-significant levels. In addition to these construction-related measures, PP 4.3-1 and MM 4.3-3 provide design and operation measures to reduce energy consumption, but these measures were also determined to fall short of reducing program-level operational impact to a less-than-significant level.

   Construction and operation emissions will be analyzed in the forthcoming EIR, considering both project-level emissions and cumulative impacts. The analysis will address project impacts in the context of the certified LRDP EIR, and will also take into account changes in the physical and regulatory environments since adoption of the LRDP EIR (including current air quality data, standards, and primary constituents). The air quality technical study will include a description and location of sensitive receptors, an inventory of construction and operation phase emissions (for both mobile and stationary sources), and an evaluation of the contribution of project emissions to any new or existing air quality standard violations. As noted above, the technical evaluation will be completed in accordance with current SCAQMD guidance.

c) The LRDP EIR (beginning on page 4.3-26) concluded that emissions from both construction and operational aspects of implementation of the LRDP would result in a cumulatively considerable net increase of criteria pollutants for which the project region is in non-attainment status, deeming this a significant and unavoidable impact. While implementation of PP 4.3-1, PP 4.3-2(a) through PP 4.3-2(c), MM 4.3-2 and MM 4.3-3 would reduce construction-related emissions and vehicle emissions as much as possible, the reductions would not be sufficient to bring the program-wide impacts to less-than-significant levels. Because the proposed project is consistent with the type and intensity of use considered in the analysis in the certified LRDP EIR, the project-specific air quality technical study (as described in items 4a and 4b, above) will consider whether any changes in the physical environment or the regulatory environment may warrant an updated evaluation of cumulative impacts. Any updated analysis and conclusions will be presented in the forthcoming EIR.

d) The LRDP EIR (beginning on page 4.3-26) concluded that implementation of the LRDP would not expose sensitive receptors to substantial pollutant concentrations, deeming this potential impact to be less than significant. The LRDP EIR conclusion was based upon the analysis of both carbon monoxide concentrations from traffic idling at intersections along area roads and toxic air emissions resulting from use of hazardous materials in teaching and research activities, considering both on-campus and off-campus sensitive receptors. Based on the nature of the proposed residential uses, the project-specific air quality technical study will include qualitative evaluation of toxic air contaminants associated with project construction and operation. Detailed analysis will be conducted for local carbon monoxide concentrations along area roadways and in the vicinity of the proposed parking garage, using the current edition of the CALINE dispersion model and the current standardized emissions factors (Emfac). Results will be presented in the forthcoming EIR, with project impacts evaluated in the context of continued relevance of the program-level conclusion in the certified LRDP EIR, as well as at a project level with respect to potentially-affected sensitive receptors in the immediate project vicinity and along roads providing access to the site.

e) As stated on page 4.3-31 of the LRDP EIR, implementation of the LRDP is expected to generate some odors associated with operation of construction vehicles and application of architectural coatings; however, impacts are considered to be less than significant due to the temporary and localized nature of construction activities. Long-term operations would produce airborne odors associated with cooking activities and trash receptacles similar to those occurring under existing conditions. The LRDP EIR analysis concludes potential odor impacts from campus residential uses would be less than significant because they would be confined to the immediate surrounding areas and, in the case of trash, would be stored in enclosed receptacles and emptied frequently. The proposed residential use is consistent with that envisioned in the adopted LRDP and does not present the potential for odor sources or substantial odor concentrations beyond those identified in the certified LRDP EIR. Therefore, further treatment of this impact in the forthcoming EIR is not warranted.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
4. BIOLOGICAL RESOURCES - Would the project:		
a) 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?	■	□
b) 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?	■	□
c) 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?	■	□
d) 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?	□	■
e) Conflict with any applicable policies protecting biological resources?	□	■
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	■	□

a) The LRDP EIR (page 4.4-27) concludes that program implementation would result in a less-than-significant impact on sensitive species with incorporation of various planning strategies, programs and practices, and mitigation measures associated with use, activity, or development in *Natural Open Space Preserve*, *Natural Open Space*, and *Naturalistic Open Space*. The on-site arroyo is designated as *Naturalistic Open Space* in Figure 4.4-1 of the LRDP EIR. As discussed on pages 4.4-27 and 4.4-28 of the certified LRDP EIR, future development of the site must comply with Planning Strategy (PS) Open Space 3 requiring preservation of existing landforms, native plant materials, and trees in the arroyo. PS Conservation 1 requires protection of natural resources, remnant arroyos, and mature trees, to the extent feasible, and PS Conservation 2 calls for siting buildings and development to minimize site disturbance and maintain existing landscapes. Program and Practice (PP) 4.4-1(b) identifies a suite of best management practices to be incorporated in project design and construction to reduce disturbance of *Naturalistic Open Space* areas (including the on-site arroyo). As shown in Figure 4.4-1 of the LRDP

EIR, the project site is outside the campus areas delineated as potential habitat for certain special status species known to occur, or with moderate potential to occur, on campus (California gnatcatcher, many-stemmed dudleya, Payson's jewelflower, San Diego horned lizard, and orange-throated whiptail lizard). Recognizing the potential for presence of special status species in proximity to *Natural and Naturalistic Open Space* areas, the LRDP EIR (page 4.4-31) includes mitigation measures requiring surveys for special-status species (MM 4.4-1(a)) and identifying measures for avoidance and compensation if sensitive species are encountered (MM4.4-1(b)). These adopted measures are incorporated into the project because the on-site arroyo is designated as *Naturalistic Open Space*.

The project site is known to support riparian habitat, which may support various special status species, as well as potentially suitable habitat for burrowing owl, a special status species. A project-level biological resources investigation is being conducted, including a general habitat assessment and focused surveys for burrowing owl (following protocol under the Western Riverside Multiple Species Habitat Conservation Plan). The results of the biological investigation will provide a basis to document compliance with the LRDP planning strategies, programs and practices, and mitigation measures noted above. The forthcoming EIR will discuss the results of the site-specific evaluation in the context of the program-level conclusion in the LRDP EIR, as well as at a project-level to determine whether any impacts outside the scope of the LRDP EIR analysis will occur. The forthcoming EIR will identify any additional mitigation measures that may be required to offset project-level impacts.

b) The LRDP EIR (Page 4.4-32) concludes that implementation of development allowed under the 2005 LRDP could result in impacts to sensitive habitat , including riparian habitat, and that with implementation of relevant LRDP planning strategies, programs and practices, and mitigation measures the impact would less than significant. The LRDP EIR discussion at this location specifically acknowledges the potential for minor direct impacts within the on-site arroyo for utilities and circulation elements, and for indirect impacts due to development of new housing adjacent to the arroyo. As discussed on page 4.4-33 of the LRDP EIR, site development must comply with Program and Practice (PP) 4.4-2(a) which promotes avoidance of riparian and wetland habitat and requires mitigation in accordance with established state and federal regulatory programs when avoidance is not feasible. For indirect impacts associated with development adjacent to the arroyo, the LRDP EIR requires compliance with PP 4.4-2(b), which identifies a series of best management practices to reduce impacts related to runoff and erosion. The project incorporates the above identified PPs.

The proposed project would establish two pedestrian bridges across the on-site arroyo. At this juncture, design efforts are still in progress with respect to any required utility crossings and the nature and extent of the proposed arroyo restoration program. The project-specific biological evaluation includes a delineation of jurisdictional resources to define waters of the U.S., wetlands, waters of the state, and streams and associated riparian habitat in accordance with applicable state and federal programs administered by the U.S. Army Corps of Engineers, the California Department of Fish and Game and the California Regional Water Quality Control Board (Santa Ana Region). Evaluation of riparian habitat will also consider the riverine and riparian policies of the Western Riverside Multiple Species Habitat Conservation Plan.

The results of the biological investigation will provide a basis to document compliance with the LRDP programs and practices noted above. The forthcoming EIR will present the results of the site-specific evaluation and any resultant significant impacts. Impacts will be evaluated in the context of continued relevance of the program-level conclusion in the LRDP EIR, as well as at a project-level to identify any impacts outside the scope of the LRDP EIR analysis. The forthcoming EIR will identify project-level mitigation measures, if necessary and feasible, to offset project-level impacts.

c) The LRDP EIR (page 4.4-34) concludes that program implementation would result in a less-than-significant impact on wetlands with implementation of relevant LRDP planning strategies, programs and practices and mitigation measures. LRDP EIR Mitigation Measures (MM) 4.4-3(a) through 4.4-3(c) require delineation of jurisdictional waters, including wetlands, in conjunction with individual projects, and establish avoidance, minimization and compensation requirements for any impacts to delineated resources. These MMs are included as part of the project.

   As noted above, the proposed project would entail landform alteration in the vicinity of the on-site arroyo. A wetland delineation is being prepared for the project and the project's impacts on wetlands will be evaluated in the project EIR.

d) The LRDP EIR (page 4.4-36) concludes that program implementation would result in a less-than-significant impact on wildlife movement and wildlife nursery sites with incorporation of relevant LRDP planning strategies, programs and practices and mitigation measures. While the LRDP EIR recognizes that the on-site arroyo may be utilized for wildlife foraging and movement, the feature is not characterized as a "wildlife corridor" on the basis of surrounding development that isolates the arroyo from any connecting open space areas. The LRDP EIR also concludes that there are no known native wildlife nursery sites on the UCR campus (page 4.4-37).

   Notwithstanding the lack of known nursery sites, the LRDP EIR recognizes the use of trees on the campus as nesting sites. As discussed on page 4.4-38 of the LRDP EIR, individual projects involving removal of mature trees must conduct pre-construction surveys, and if occupied nests are discovered, provide a buffer zone or develop appropriate mitigation measures in consultation with knowledgeable resource agency staff (MM 4.4-4(a) and MM 4.4-4(b)). These LRDP provisions are part of the project. This issue will not be addressed in the forthcoming project-level EIR.

e) The LRDP EIR (page 4.4-39) concludes that program implementation would be in substantial conformance with local policies protecting biological resources and that this impact would be less than significant on a program level. While the University is not subject to municipal plans, policies, and regulations, a voluntary review of the County of Riverside and City of Riverside general plans as part of the LRDP EIR (page 4.4-39) concluded that implementation of the LRDP would not conflict with any relevant plans. The City of Riverside General Plan was updated in November 2007, subsequent to adoption of the LRDP and certification of the program EIR. The updated City Open Space and Conservation Element has been reviewed and does not include any new information that would change the conclusion in the certified LRDP EIR. The LRDP EIR conclusion is based upon the conservation policies embodied in LRDP Planning Strategies Open Space 1, Open Space 2, Open Space 3 and Conservation 1. These LRDP Planning Strategies are part of the proposed project. This issue will not be addressed further in the project-level EIR.

f) The LRDP EIR (page 4.4-40) concludes that program implementation would not conflict with an adopted habitat conservation plan, specifically, the Western Riverside County Multiple Species Habitat Conservation Plan (WRMSHCP). While the project site does not overlap with any areas identified for long-term conservation as part of the WRMSHCP reserve system, there are several plan-wide policies that are applicable outside of the future reserve system. For the project site, applicable policies relate to burrowing owl and riverine and riparian resources.

As noted above, the project-level biological resources evaluation will include focused surveys for burrowing owl and evaluation of resources protected under WRMSHCP policies protecting riverine and riparian resources. The results of the project-level surveys will be presented in the forthcoming EIR and will provide a basis for evaluation of continued relevance of the program-level conclusion in the LRDP EIR.

While not addressed in the LRDP EIR, it is also noted that the project site is within the plan area for the Long-term Habitat Conservation Plan for the Stephens' Kangaroo Rat (SKR). Implementation of this plan is at a stage in which all conservation lands have been acquired. For projects located outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The campus is not located within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
5. CULTURAL RESOURCES - Would the project:		
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	■
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	■

a) The LRDP EIR identifies potentially significant historical resources on the campus. As noted on page 4.5-11 of the certified LRDP EIR, a preliminary evaluation of the existing on-site residence (3671 Valencia Hill Drive) led to a conclusion that the structure did not meet listing criteria under either the National Register of Historic Places (NRHP) or the California Register of Historic Resources (CRHR). Notwithstanding this preliminary evaluation in the LRDP EIR, the existing residence meets the age criteria for further evaluation under LRDP Mitigation Measure 4.5-1(a). An historical assessment by a qualified architectural historian of the on-site residence was prepared in 2008, and confirmed the preliminary determination in the LRDP EIR that the residence was not eligible for listing in the NRHP or CRHR. On this basis, project-related impacts of demolishing this structure would be less than significant and further discussion in the project EIR is not warranted.

The historical assessment, "Historic Resources Evaluation: Assessor Parcel Numbers 251-18-005-6, City of Riverside, Riverside County, California," prepared by Chambers Group, Inc., dated December 2008, is available on the UCR Office of Design and Construction website at http://pdc.ucr.edu.

b) The LRDP EIR (page 4.5-23) identifies the rolling hills in the southeastern portion of campus and the agricultural teaching and research fields south of Martin Luther King Boulevard as areas of potential sensitivity for archeological resources, and characterizes the east campus area (except the southeast hills) as presenting a low potential for encountering unknown, intact archaeological resources due to previous disturbances. The project site is located in this LRDP-defined area of low potential. There is no new information that would call into question the continued validity of the LRDP EIR analysis and conclusion that this impact would be less than significant. Accordingly, the potential for impacts to archaeological resources at the project site is deemed less than significant and additional discussion in the forthcoming EIR is not warranted.

c) The LRDP EIR (page 4.5-25) concludes that while the likelihood of finding paleontological resources is low, there is the potential for the discovery of previously unknown resources that cannot be evaluated. LRDP Program and Practice (PP) 4.5-4 requires project-specific measures be incorporated into construction specifications to address an unanticipated paleontological resource discovery during construction activities. Established campus procedures for implementation of the LRDP Mitigation Monitoring and Reporting Program ensure inclusion of such provisions in construction contracts and implementation of contract provisions for the duration of construction. This LRDP EIR measure is included as part of the project. No further discussion in the project EIR is warranted.

d) The LRDP EIR (page 4.5-26) states that while the likelihood of finding human remains is low, there is the potential for the discovery of human remains during construction activities. LRDP Program and Practice (PP) 4.5-5 requires that all construction activities stop and that the Riverside County Coroner be notified in the event any human remains are discovered. Established campus procedures for implementation of the LRDP Mitigation Monitoring and Reporting Program ensure inclusion of such provisions in construction contracts and implementation of contract provisions for the duration of construction. This LRDP EIR measure is included as part of the project. No further discussion in the project EIR is warranted.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
6. GEOLOGY AND SOILS - Would the project:		
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:		
i) 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.	■	□
ii) Strong seismic ground shaking?	■	□
iii) Seismic-related ground failure, including liquefaction?	■	□
iv) Landslides?	■	□
b) Result in substantial soil erosion or the loss of topsoil?	■	□

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
c) 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?	■	□
d) 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?	■	□
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	□	■

a) The LRDP EIR (page 4.6-11) concludes that development on the campus would not have 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. The LRDP EIR identifies several major fault zones in the vicinity of the project capable of producing strong seismic ground shaking, similar to conditions in much of the southern California region, and that may cause damage in areas where liquefiable soils exist. Implementation of LRDP Programs and Practices (PP) 4.6-1(a), PP 4.6-1(b), and PP 4.6-1(c) was identified as reducing potential seismic impacts to a level below significance by requiring project-specific geotechnical analysis and continued updating of campus guidelines so that all new buildings are safely designed to be consistent with seismic and geotechnical engineering practice.

A project-specific geotechnical study is being prepared to identify fault traces, displacement potential, liquefaction, landsliding, and any other soil constraints that may affect the project site and identify engineering requirements to ensure the proposed structures meet applicable design requirements. The results of the geotechnical study will be provided in the project EIR, providing a basis for evaluation of continued relevance of the LRDP EIR conclusion and identification of any additional project-level mitigation measures that may be necessary.

b) 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 overall disturbance area and avoiding sensitive areas, the specific construction measures itemized in LRDP Programs and Practices 4.6-2(a) and (b) reduce the potential for substantial soil erosion and dust generation for both the construction and operation phases. Established campus procedures for implementation of the LRDP Mitigation Monitoring and Reporting Program ensure inclusion of such provisions in construction contracts and implementation of contract provisions for the duration of construction. Established campus procedures for compliance with the NPDES permit for stormwater runoff ensure establishment of finished site treatments that provide long-term erosion control. These LRDP EIR measures are included as part of the project. No further discussion in the project EIR is warranted.

c) The LRDP EIR (page 4.6-15) concludes that with implementation of relevant LRDP planning strategies and programs and practices, potential impacts related to these stability issues would be less than significant. In addition to campus-wide policies directed at limiting overall disturbance area and avoiding sensitive areas, the project-specific geotechnical evaluation required under LRDP Program and Practice PP 4.6-1(a) provides for consideration of these stability issues. As noted above, a project-specific geotechnical evaluation is being prepared. The results of the geotechnical study will be presented in the project EIR, providing a basis for evaluation of continued relevance of the LRDP EIR less-than-significant conclusion and, if necessary, identification of additional feasible project-level mitigation measures.

d) The LRDP EIR (page 4.6-17) concludes that with implementation of LRDP Program and Practice 4.6-1(a), potential impacts related to expansive soils would be less than significant. Known design techniques which are implemented in accordance with established building codes are available to address this condition, if determined present at any particular site. As noted above, a project-specific geotechnical evaluation is being prepared. The results of the geotechnical study will be presented in the project EIR, providing a basis for evaluation of continued relevance of the LRDP EIR less-than-significant conclusion and, if necessary, identification of additional project-level mitigation measures.

e) As with the rest of the campus, the project would connect to existing sewer infrastructure and would not use septic systems. Further discussion of this issue in the project EIR is not warranted.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
7. GREENHOUSE GAS EMISSIONS – Would the project:		
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	■	□
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	■	□

a) This was an emerging issue at the time of preparation of the LRDP EIR and was not addressed in the certified program-level document. The proposed project would emit greenhouse gases (GHGs) during construction and operation, mainly associated with fossil fuel consumption. The air quality technical evaluation being prepared in support of the forthcoming EIR will establish a quantified inventory of project GHG emissions based upon a methodology combining results from the URBEMIS 2007 software and formulas provided in the California Climate Action Registry General Reporting Protocol, Reporting Entity-wide Greenhouse Gas Emissions (version 3.1). The inventory will consider construction activity, operation-period mobile source emissions, as well as indirect emissions associated with electricity and water usage. Impact evaluation will take into account preliminary guidance in current publications of the California Air Resources Board, the Governor's Office of Planning and Research and the South Coast Air Quality Management District. Potential impacts and, if necessary, feasible mitigation measures will be further identified in the project EIR.

b) This was an emerging issue at the time of preparation of the LRDP EIR and was not addressed in the certified program-level document. California has passed several bills and the Governor has signed at least three executive orders regarding GHGs. Assembly Bill (AB) 32 (the Global Warming Solutions Act) was passed by the California legislature on August 31, 2006. It requires the state's global warming emissions to be reduced to 1990 levels by 2020. The reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. The project EIR will identify any GHG-related plans, policies, or regulations that have been adopted and that apply to the project site, and discuss the project's potential to conflict with those plans, policies, or regulations.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
8. HAZARDS AND HAZARDOUS MATERIALS – Would the project:		
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	■	☐
b) 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?	■	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	■	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	■

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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?	☐	■
f) 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?	☐	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	■
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	■

a) The proposed residential development would entail comparatively minimal use of hazardous materials in the course of maintenance and cleaning services. The LRDP EIR (page 4.7-24) concludes that with implementation of LRDP Program and Practice (PP) 4.7-1, impacts related to routine transport, use, disposal or storage of hazardous materials would be less than significant. LRDP PP 4.7-1 acknowledges the obligation to implement various health and safety plans, programs and practices that are imposed by State and federal regulations. This LRDP EIR measure is included as part of the project. Established campus procedures ensure compliance with such health and safety regulations. No further discussion in the project EIR is warranted.

This element of the LRDP EIR analysis also addresses potential impacts associated with building demolition and movement of contaminated soils, concluding that impacts would be less than significant with implementation of LRDP Program and Practice (PP) 4.7-2. LRDP PP 4.7-2 requires surveys to identify presence of hazardous materials and to recommend necessary handling and disposal practices. A survey of the existing house on the site was conducted in 2007 and determined that both asbestos-containing materials and lead-based paint were present in the structure. Recommended measures for managing the presence of those materials prior to demolition will be included as project-level mitigation measures in the project EIR. Additionally, because the project would entail earth disturbance in an area once used for agricultural purposes, a survey of site soils to identify any contamination is being conducted in support of the forthcoming EIR. The results of the survey and any recommendations for feasible project-level mitigation will be presented in the project EIR.

b) The LRDP EIR (page 4.7-28) concludes that with implementation of relevant programs and practices, impacts related to release of hazardous materials into the environment would be less than significant. The LRDP EIR discussion of this matter acknowledges that hazardous materials are routinely used on campus as part of teaching and research in laboratories, greenhouses, and other facilities. For the proposed residential facility, cleaning products and other materials routinely used in building maintenance are acknowledged as hazardous materials. LRDP PP 4.7-1, as discussed above, is cited as reducing potential impacts in this regard for the proposed student housing use to below a level of significance and is included as part of the project. There is no new information that would call into question the continued validity of the LRDP EIR conclusion; therefore, no further discussion in the project EIR is warranted.

This element of the LRDP EIR also addresses impacts related to exposure of construction workers and campus occupants to contaminated soil or groundwater. In addition to LRDP PP 4.7-2, the LRDP EIR discussion (page 4.7-34) acknowledges the requirements for soil testing on former agricultural lands under LDRP PP 4.7-4 and Mitigation Measure (MM) 4.7-4. Historic aerials photographs indicate the project site was formerly a grove (presumably citrus). The results of the pending site survey noted under item a, above, and if necessary, recommendations for feasible project-level mitigation will be presented in the project EIR.

c) The LRDP EIR (page 4-7.35) lists schools within ¼ mile of the campus; none of them are within ¼ mile of the project site. While not identified in the LRDP EIR, the Apple Tree Learning Center is located at the southeast corner of Watkins Drive and Big Springs Road, within ¼ mile of the project site.

The LRDP EIR (page 4.7-34) concludes that with implementation of LRDP Program and Practice (PP) 4.7-1, impacts related to hazardous emissions and nearby schools would be less than significant. It is noted that the project-specific air quality analysis will consider carbon monoxide hotspots and construction emissions in the vicinity of this school, and will identify whether any applicable thresholds are exceeded. The results of this analysis will be incorporated into the project EIR. As noted under item b, above, LRDP PP 4.7-1 is included as part of the project.

d) The LRDP EIR (page 4.7-36) states that campus is listed as a hazardous materials site due to the former pesticide disposal pits in the agricultural teaching and research fields on the West Campus. Remediation of this location has been completed and, on this basis, the LRDP EIR concludes that implementation of the 2005 LRDP would not result in development on a site that is listed pursuant to Government Code Section 65962.5. No further discussion is required.

e) The LRDP EIR (page 4.7-24) concludes that the campus is not located within an airport land use plan study area or within two miles of a public airport or public use airport and no impacts would occur. This aspect of the project setting has not changed. This issue is adequately addressed in the LRDP EIR and no further discussion is necessary in the project EIR.

f) The LRDP EIR (page 4.7-24) concludes that the campus is not located within the vicinity of a private airstrip and no impacts would occur. This aspect of the project setting has not changed. This issue is adequately addressed in the LRDP EIR and no further discussion is necessary in the project EIR.

g) The LRDP EIR (page 4.7-37) concludes that with implementation of relevant LRDP planning strategies, programs and practices and mitigation measures, impacts related to interference with emergency response or evacuation plans would be less than significant. LRDP Programs and Practices PP 4.7-7(a) and PP 4.7-7(b) address emergency access issues by requiring that at least one unobstructed lane in both directions on campus roadways be provided when possible (with appropriate traffic controls when only a single lane is available and signage for alternate routes when closures are required), and relevant campus departments be notified and consulted if construction operations result in roadway closures. Two mitigation measures (MM 4.7-7(a) and 4.7-7(b)) were also established in conjunction with the LRDP EIR to require coordination with the campus Police Department and Riverside Fire Department if identified evacuation zones are compromised during construction, and annual review of the campus Emergency Operations Plan to evaluate the need for any adjustments to campus evacuation zones due to new development.

   Established campus procedures for compliance with campus emergency operations plans and practices ensure implementation of the LRDP programs and practices and mitigation measures cited above. The forthcoming EIR will acknowledge the inclusion of LRDP provisions PP 4.7-7(a), PP 4.7-7(b), MM 4.7-7(a) and MM 4.7-7(b) into the proposed project. With implementation of these measures, the less-than-significant impact conclusion in the LRDP EIR remains valid. No further discussion in the project EIR is warranted.

h) The LRDP EIR (page 4.7-40) concludes that development in the southeastern portion of campus could expose people or structures to risks associated with wildland fires due to proximity to campus wildlands features, namely the southeast hills and the Botanic Gardens. With implementation of relevant planning strategies and mitigation measures, the potential program-level impact is deemed less than significant. The project site is removed from these areas of the campus and is not exposed to risk of wildland fires. The LRDP programs and practices and mitigation measures in this regard are not applicable to this project. No further discussion in the project EIR is warranted.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
9. HYDROLOGY AND WATER QUALITY - Would the project:		
a) Violate any water quality standards or waste discharge requirements?	■	□
b) 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 which would not support existing land uses or planned uses for which permits have been granted)?	□	■
c) 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 which would result in substantial erosion or siltation on- or off-site?	■	□
d) 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 which would result in flooding on- or off-site?	■	□
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	■	□
f) Otherwise substantially degrade water quality?	■	□
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	□	■
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	□	■
i) 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?	□	■
j) Inundation by seiche, tsunami, or mudflow?	■	□

a) The LRDP EIR (page 4.8-17) concludes that campus development would not violate waste discharge requirements or water quality standards with implementation of Planning Strategy (PS) Conservation 2 (siting buildings to minimize site disturbance and reduce erosion) and Program and Practice (PP) 4.8-1 (complying with SARWQCB requirements). PP 4.8-3 (d) also reiterates the campus commitment to maintain water quality through implementation of best management practices identified in the campus-wide Storm Water Management Plan.

Additional detail as to project elements involving storm drain improvements and arroyo enhancement are being generated in conjunction with the ongoing project design effort. More specific information regarding the nature of the proposed improvements, evaluation of resultant impacts, and identification of feasible project-level mitigation measures will be provided, if necessary, in the forthcoming project EIR.

b) The LRDP EIR (page 4.8-19) concludes that with implementation of PS Conservation 5 and PPs 4.8-2(a) through 4.8-2(c), impacts to groundwater supplies and recharge due to implementation of the LRDP would be less than significant. These planning strategies and programs and practices promote water conservation to reduce demand for potable water and reduce the campus impact on local groundwater supplies (groundwater is a component of supply for the City of Riverside, the campus water purveyor).

The proposed student housing project is consistent with the type and intensity of development considered in the certified LRDP EIR. As noted on LRDP EIR page 4.8-21, the campus is not designated as a groundwater recharge area and does not serve as a primary source of groundwater recharge within the sub basin. Established campus procedures for project design and construction management provide a mechanism to ensure incorporation of water conserving features in the completed project. The forthcoming EIR will acknowledge incorporation of LRDP provisions PS Conservation 5 and PP 4.8-2(a) through 4.8-2(c) into the proposed project to ensure a less-than-significant impact. Further discussion of this issue in the project EIR is not warranted.

c) The LRDP EIR (page 4.8.22) concludes that with implementation of relevant LRDP planning strategies and programs and practices, impacts related to erosion or siltation due to changes in drainage patterns would be less than significant. The following LRDP Planning Strategies and Programs and Practices are cited as minimizing impacts related to erosion and siltation: PS Open Space 1, 2, 3, and 4, PS Conservation 1, 2, and 3, and PP 4.8-3(a), PP 4.8-3(b), PP 4.8-3(c), and PP 4.8-3(d). The noted Planning Strategies relate to avoidance of development in open space areas with greatest exposure to erosion potential. PPs 4.8-3 (a) through (d) identify numerous avoidance and minimization strategies and best management practices to reduce erosion potential. Additionally, the adequate stormwater management facilities required under PP 4.8-3(e) also contribute to minimizing erosion.

Discussion in the LRDP EIR (page 4.8-25 and 26) notes the potential for alteration of drainage patterns and erosion-related impacts as a result of new housing development in the project area and adjacent to the arroyo. Additional detail as to project elements involving storm drain improvements and arroyo enhancement are being generated in conjunction with the ongoing project design effort. More specific information regarding the nature of the proposed improvements, evaluation of resultant impacts, and identification of feasible project-level mitigation measures, if necessary, will be provided in the forthcoming project EIR.

d) See discussion under (e) below; this issue will be discussed in detail in the project EIR.

e) The LRDP EIR (page 4.8-31) recognizes the potential for increased runoff due to development of new student housing at this location, and the fact that this location is not served by existing storm drain facilities. LRDP Program and Practice PP 4.8-3(e) requires project-specific evaluation of estimated runoff and existing storm drain system capacity, with identification of needed improvements when existing capacity is not adequate and is included as part of the project. A project-specific analysis of stormwater discharges and conveyance capacity is being conducted as part of the ongoing project design effort. The results of this analysis, evaluation of resultant impacts, and identification of any feasible project-level mitigation measures, if necessary, will be provided in the forthcoming project EIR.

f) See the discussion under (a) above; water-quality impacts will be addressed in detail in the project EIR.

g) As shown on LRDP EIR Figure 4.8-2, *FEMA Map*, the proposed project is not located within a flood zone. The proposed project would not place housing within a 100-year flood zone; therefore, impacts would not occur and further discussion in the project EIR is not warranted.

h) As shown on LRDP EIR Figure 4.8-2, the proposed project is not located within a flood zone. The proposed project would not place structures within a 100-year flood zone which would impede or redirect flood flows; therefore, impacts would not occur and further discussion in the project EIR is not warranted.

i) As stated on page 4.8-36 of the 2005 LRDP EIR, there is no reasonable threat of dam failure that would impact the campus. A catastrophic impact related to the failure of the Santa Ana Pipeline is considered remote but possible, and implementation of Program and Practice 4.8-10 (implementation of the Emergency Operations Plan), is identified as reducing this impact to a less-than-significant level. Campus procedures for implementation of the Emergency Operations Plan are in place and ability to implement the plan would not be altered as a result of establishment of the Glen Mor 2 Student Apartments. The proposed student apartments are consistent with the residential use envisioned in the adopted LRDP, so implementation of the proposed project would not represent any change in the risk of exposure assumed in the LRDP EIR. Further discussion in the project EIR is not warranted.

j) The LRDP EIR (page 4.8-36) concludes that with implementation of relevant LRDP planning strategies and programs and practices, impacts due to exposure to seiche, tsunami, or mudflow would be less than significant. Risks related to seiche or tsunami are essentially absent considering the distance between the campus and the ocean or other water bodies.

   Mudflows are identified as possible for sites adjacent to the southeast hills or campus arroyos. Implementation of LRDP Planning Strategies Open Space 1 (preserve southeast hills), Open Space 2 (limited access and improvements in *Natural Open Space*), Conservation 1 (protect native habitat, arroyos and mature trees), and PP 4.8-3(a) and (b) is deemed to reduce the potential for mudflows to a less-than-significant level and are included as part of the project. PP 4.8-3(a) applies only within *Natural Open Space*. PP 4.8-3(b) applies to *Naturalistic Open Space* areas (including the on-site arroyo) and stipulates avoidance measures and best management practices that would minimize the potential for mudflows. Stabilization and restoration of the on-site arroyo is an aspect of the proposed project and is in furtherance of PS Open Space 1. The forthcoming EIR will provide additional detail regarding proposed arroyo restoration improvements and site drainage improvements that are necessary to draw conclusions regarding continued relevance of the LRDP program-level conclusion, project conformance to LRDP Mitigation Measure 4.8-3, and identification, if necessary, of feasible project-level mitigation measures.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
10. LAND USE AND PLANNING - Would the project:		
a) Physically divide an established community?	☐	■
b) 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?	■	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	■	☐
d) Create other land use impacts?	■	☐

a) Because the project is located within an established university campus and the 2005 LRDP does not include the development of areas outside the campus boundaries, the LRDP EIR (page 4.9-9) concludes that there would be no impact regarding the division of any established communities. The project proposes development at the edge of campus in an area planned for development in the LRDP. This issue is adequately addressed in the LRDP EIR and no further discussion is necessary in the project EIR.

b) Pages 4.9-18 through 4.9-34 of the LRDP EIR address consistency of the 2005 LRDP with the City of Riverside General Plan, Southern California Association of Governments Regional Comprehensive Plan (RCP), the Santa Ana Basin Plan, the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and the South Coast Air Quality Management Plan (AQMP). The EIR concludes that this impact would be less than significant with incorporation of relevant LRDP Planning Strategies, Programs and Practices and Mitigation Measures.

The proposed project includes a change in the adopted LRDP land use designations to redesignate a portion of the site currently designated for "*Athletics and Recreation*" to "*Family, Apartment Housing and Related Support*". This proposed change is the result of a determination in the early project design effort that additional land area was required to accommodate a number of student beds, along with the required associated uses, consistent with the adopted LRDP. While this proposed amendment does not represent a measureable departure from the overall scope of development evaluated in the certified LRDP EIR, some of the relevant plans of other jurisdictions have been updated. The project EIR will include evaluation of any updates to the RCP, the Santa Ana Basin Plan, the MHSCP, and the AQMP and will report any updated determinations regarding consistency with these plans with respect to the proposed Glen Mor 2 Student Apartments project.

c) See Biological Resources, item 4.f.

d) The LRDP EIR (page 4.9-9) concludes that with implementation of relevant LRDP planning strategies and programs and practices, impacts related to changes in on-campus land use will be less than significant. Discussion of land use impacts in the LRDP EIR specifically recognizes the potential for incompatibility with respect to establishment of new student housing in proximity to adjacent single-family neighborhoods (page 4.9-13) and with respect to establishment of perimeter parking structures (page 4.9-14). LRDP Planning Strategies Open Space 4 (landscape buffers), Campus and Community 1 (land use transitions and landscape buffers), Conservation 1 (preserve natural resources), Conservation 2 (building siting), Development Strategy 1 (design review process) and Programs and Practices 4.9-1 (a) through (c) (design guidelines, landscape master plan, relocate mature specimen trees) are identified as reducing potential land use incompatibilities to a less-than-significant level and are included in the project. With the additional detail as to the proposed improvements at this site, potential land use impacts will be evaluated in the context of continued relevance of the program-level conclusion in the LRDP EIR, as well as at a project-level to identify any impacts outside the scope of the LRDP EIR analysis. The forthcoming EIR will identify feasible additional mitigation measures, if necessary, that may be required to offset project-level impacts if they exceed LRDP levels..

Due to the involvement of an amendment to the adopted LRDP Land Use Plan, the project EIR will include an evaluation of the proposed amendment in the context of the LRDP vision for the project site and the overall campus development program, as well as an evaluation of accommodation of resident recreation facility needs with the proposed elimination of the existing *Athletics and Recreation* designation at this site.

The March 2010 amendments to the CEQA Guidelines eliminated previous checklist entries related to parking. The forthcoming EIR will address the proposed parking element of this project as a land use matter with respect to the project's conformance to campus parking requirements and parking plans. Additional aspects of the proposed parking facilities will also be addressed in the project EIR, as noted in this checklist under aesthetics, air quality, and noise.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
11. MINERAL RESOURCES - Would the project:		
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	■
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	■

a) The LRDP EIR (page 4-3) acknowledges the lack of known mineral resources on the campus and, on this basis, found that planned campus development would have no impact on mineral resources. This issue is adequately addressed in the 2005 LRDP EIR and no further discussion is necessary in the project-level EIR.

b) The LRDP EIR (page 4-3) acknowledges the lack of known mineral resources on the campus and, on this basis, found that planned campus development would have no impact on locally-important mineral resources. This issue is adequately addressed in the 2005 LRDP EIR and no further discussion is necessary in the project-level EIR.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
12. NOISE - Would the project result in:		
a) 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?	■	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	■	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	■	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?	■	☐

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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?	☐	■
f) 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?	☐	■

a) LRDP Program and Practice 4.10-1(b) requires project-specific noise analysis for future development under the LRDP. Programs and Practices 4.10-1 (a) and (b) identify campus noise standards for interior noise levels within student housing units and exterior noise levels for sensitive receptors (both on-campus and off-campus). A project-specific noise analysis is being prepared in support of the forthcoming EIR. The noise analysis will consider noise generated by project-related traffic, equipment and activity in outdoor use areas, and the proposed parking structure. With the additional detail as to the proposed improvements at this site, potential noise impacts will be evaluated in the context of continued relevance of the less-than-significant program-level conclusion in the LRDP EIR, as well as at a project-level to identify any impacts outside the scope of the LRDP EIR analysis. The forthcoming EIR will identify feasible additional mitigation measures that may be required to offset project-level impacts, if necessary.

b) The LRDP EIR (page 4.10-16) concludes that development throughout campus would result in groundborne vibration exceeding relevant thresholds, and identifies a significant and unavoidable impact for on-campus users. LRDP Program and Practice 4.10-2 establishes restricted construction hours and Mitigation Measure 4.10-2(a) requires notification to on-campus academic and residential facilities within 300 feet of approved construction sites and are included as part of the project. While these measures would reduce impacts to the extent feasible, the residual impact was deemed to remain significant and unavoidable.

   The LRDP EIR (page 4.10-17) determined that groundborne noise and vibration impacts for off-campus locations would be below applicable thresholds, and concluded that the potential impact is less than significant. This conclusion was based upon an assumption that construction methods, such as pile driving, would not occur during implementation of the 2005 LRDP (LRDP EIR page 4.10-16). However, the results of geotechnical investigations conducted to date in support of the Glen Mor 2 Student Apartments project indicates that pile driving may be required. The potential for impacts related to groundborne vibrations will be addressed in the forthcoming EIR.

c) The LRDP EIR (page 4.10-17) concludes that permanent increases in traffic noise due to campus development would be less than significant with incorporation of Programs and

Practices (PP) 4.10-5(a) (providing on-campus housing to reduce local traffic) and PP 4.10-5(b) (implementing alternative transportation measures). The LRDP EIR (page 4.10-19) concludes that the permanent increases in noise from stationary sources such as new buildings and facilities would be less than significant with incorporation of Planning Strategy (PS) Open Space 4 (landscaped buffers), PS Campus and Community 1 (sensitive land use transitions), and PP 4.10-6 (shielding stationary sources). These LRDP PPs and MMs are included as part of the project.

As noted in the discussion of item 12a, above, a project-specific noise study is being prepared as required under LRDP Program and Practice 4.10-1(b). With the additional detail as to the proposed improvements at this site, potential noise impacts will be evaluated in the context of continued relevance of the program-level conclusions in the LRDP EIR, as well as at a project-level to identify any impacts outside the scope of the LRDP EIR analysis. The forthcoming EIR will identify feasible mitigation measures, if necessary, to offset project-level impacts.

d) The LRDP EIR (page 4.10-7) concludes that development throughout campus would result in noise exceeding relevant thresholds as received by on- and off-campus receptors, including off-campus residences. The LRDP EIR identifies a significant and unavoidable impact for this issue. The EIR identifies several measures that will reduce this impact to the extent feasible, including LRDP Programs and Practices (PP) 4.10-7(a) (limiting the hours of construction), PP 4.10-7(b) (requiring noise muffling of construction equipment), PP 4.10-7(c) (requiring stationary construction equipment be placed away from sensitive receptors), and PP 4.10-7(d) and PP 4.10-8 (conducting meetings with on- and off-campus constituents regarding construction projects); however, residual impacts would remain significant and unavoidable.

   As noted in the discussion of item 12a, above, a project-specific noise study is being prepared as required under LRDP Program and Practice 4.10-1(b). With the additional detail as to the proposed improvements at this site, potential noise impacts will be evaluated in the context of continued relevance of the program-level conclusions in the LRDP EIR, as well as at a project-level to identify opportunities to further mitigate impacts at this particular location.

e) 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 two miles of a public airport or public use airport and no impacts would occur. This aspect of the project setting has not changed. This issue is adequately addressed in the 2005 LRDP EIR and no further discussion is necessary in the project-level EIR.

f) 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 issue is adequately addressed in the2005 LRDP EIR and no further discussion is necessary in the project-level EIR.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
13. POPULATION AND HOUSING - Would the project:		
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	■
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	■
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	■

a) The LRDP EIR (impact discussion begins on page 4.11-13) fully analyzed the population and housing impacts due to increases in on-campus housing, and determined that with implementation of LRDP Planning Strategy Land Use 4 (campus housing for 50 percent of students), this impact would be less than significant. The proposed project is in furtherance of LRDP on-campus housing goals. With the LRDP-baseline campus housing stock of 4,147 beds, the additional 1,219 beds constructed and acquired since adoption of the 2005 LRDP, and the 810 beds proposed with the Glen Mor 2 Student Apartments project, the post-project resident population of 6,180 students is well within the resident population of 12,500 students analyzed in the LRDP EIR. The project would not induce growth beyond that which was projected in the LRDP and analyzed in the LRDP EIR. Therefore, additional discussion of this issue is not warranted in the project EIR.

b) The project would result in the demolition and removal of one vacant single-family residence. This does not represent a significant displacement of housing, and further discussion in the project EIR is not warranted.

c) The project would result in the demolition of one single-family residence that is not occupied. The project would not displace any people, and there would be no need for replacement housing. Additional discussion of this issue in the project EIR is not warranted.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
14. PUBLIC SERVICES		
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:		
a) Fire protection?	■	□
b) Police protection?	■	□
c) Schools?	□	■
d) Parks?	□	■
e) Other public facilities?	□	■
f) Create other public service impacts?	□	■

a) The LRDP EIR (page 4.12-8) concludes that impacts upon fire protection services would be less than significant with implementation of LRDP Planning Strategy Transportation 4 (limit circulation in campus core) and Programs and Practices (PP) 4.12-1 (a) and (b). PP 4.12-1(a) and (b) require consideration of fire prevention features in the design of individual projects under the LRDP, including building and fire code requirements, emergency access, accident prevention, water supply and water pressure; and staffing needs (both campus and local agency). These LRDP PPs and MMs are included as part of the project.

   Fire services would be provided by three City of Riverside stations within two miles of the proposed project, including Station No. 4 (3510 Cranford Avenue), Station No. 6 (2293 Main Street), and Station No. 1 (3420 Mission Inn Avenue). With the additional detail as to the proposed improvements at this site, the project EIR will evaluate potential fire safety impacts in the context of PP 4.12-1(a) and PP 4.12-1(b). The forthcoming EIR will address continued relevance of the program-level conclusions in the LRDP EIR and identify feasible project-level mitigation, if necessary.

b) The LRDP EIR (page 4.12-11) concludes that impacts to police services will be less than significant with implementation of LRDP Planning Strategy Transportation 4 (limit circulation in campus core) and Programs and Practices (PP) 4.12-2 (a) and (b). The LRDP EIR acknowledges that planned campus development would have an effect on police services of both the UCR and the City of Riverside police departments. LRDP

EIR PP 4.12-2(a) requires hiring of additional campus police staff as development under the LRDP occurs. PP 4.12-2(b) acknowledges the coordinated service agreement (UNET) between the UCR Police Department and the City of Riverside Police Department and commits to continued participation on the part of the campus. The proposed project would introduce additional residents and buildings on campus that may increase demand for police services. As required under PP 4.12-2(a), the campus will review staffing needs of the UC Police Department and determine whether this project would require additional staffing that would require additional facilities. Additional discussion of this issue will be provided in the project EIR.

c) The LRDP EIR (page 4.12-13) concludes that implementing the LRDP would increase the number of school-aged children in local school districts, but not beyond the districts' capacities, and that 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 and assessed in the certified LRDP EIR. This issue was adequately addressed in the LRDP EIR, and further discussion is not warranted in the project EIR.

d) Parks are not addressed in the Public Services section of the LRDP EIR. Project impacts in this regard are addressed under Recreation (see item 15, below).

e) The LRDP EIR (page 4.12-15) concludes that 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 and assessed in the certified LRDP EIR. This issue was adequately addressed in the LRDP EIR, and no further discussion is warranted in the project EIR.

f) No other potential public services impacts specific to the project have been identified, and discussion of additional services is not warranted in the EIR.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
15. RECREATION		
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	■	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	■	☐

a) The LRDP EIR (pages 4.13-7 and 4.13-8) concludes that planned development would increase the campus population and result in additional demand for recreational facilities, but that impacts on recreation demand would be less than significant because the LRDP proposes to construct new recreational facilities to accommodate this increase. While overall campus open space of approximately 320 acres far exceeds the campus parkland-to-persons objective of 3 acres per 1,000 persons (approximately 107 acres required for 2005 LRDP build-out campus population of 35,540), the LRDP EIR identified an existing deficit in formal recreational space and established projected programming needs for formal sports and recreation facilities based on per capita ratios for the various facility types (Table 4.13-2, page 4.13-4). The LRDP includes addition of approximately 372,000 square feet of recreational building space that will make up for this deficit and meet additional demand. The LRDP EIR (pages 4.13-8 and 4.13-9) also concludes that the impact on off-campus recreational facilities would be less than significant because the campus-based demand on these facilities would not be substantial.

The proposed project includes an amendment to the LRDP to remove the "*Athletics and Recreation*" land use designation from the site and replace it with "*Family, Apartment Housing and Related Support*," resulting in a loss of planned recreational open space land. The forthcoming EIR will analyze this proposed land use change with respect to ability to meet campus recreational needs, need to designate an alternate location for recreational uses, and increased demand for remaining campus recreational facilities.

b) The LRDP EIR (page 4.13-9) concludes that construction of new recreational facilities could result in impacts to the environment, but that the impacts associated with their development, including impacts on air quality, biology, noise, traffic, and other resource areas, are fully considered elsewhere in the LRDP EIR and that there are no additional significant impacts that are not covered in the LRDP EIR. The project would involve the construction of an outdoor pool, and impacts associated with the development will be evaluated as part of the proposed project in their respective resource areas of the project EIR. As noted in item a above, the project EIR will also consider potential impacts related to the proposed LRDP land use amendment as it relates to possible replacement locations or potential intensification of use at existing recreational facilities.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
16. TRANSPORTATION/TRAFFIC -- Would the project:		
a) 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 but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	■	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	■
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	■	☐
e) Result in inadequate emergency access?	■	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	■	☐

a) The LRDP EIR (pages 4.14-37 through 4.13-62) concludes that plan implementation would generate permanent traffic increases and temporary construction-related traffic that would result in significant and unavoidable impacts at several studied intersections, including the Big Springs Road/Watkins Drive intersection near the project site. Various planning strategies are identified to generally reduce and manage campus traffic, and mitigation measures are identified to improve affected intersections, but the LRDP EIR acknowledges that even with implementation of these strategies and measures, the residual impact remains significant and unavoidable.

While the proposed student housing project is consistent with the location and intensity of development under the adopted LRDP, the LRDP EIR evaluated program-wide traffic impacts for a 2015 build-out scenario, based upon existing conditions in 2004. A project-specific traffic analysis is being prepared to evaluate the localized and near-term impacts based upon an updated existing conditions scenario and the more detailed site development information that is now available. The forthcoming EIR will address project impacts for selected intersections identified in consultation with City of Riverside Traffic Engineering staff. The EIR analysis will address project impacts with respect to adopted LRDP Mitigation Measures (particularly 4.14-1(g) for the Linden/Aberdeen intersection) and will also address the need for any additional project-level mitigation measures (including potential funding contributions toward intersection improvements at Big Springs Road and Watkins Drive as noted at LRDP EIR pages 4.14-45 and 4.14-55). The results of the traffic analysis will be incorporated into the project EIR.

b) 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 I-215, SR-60, and SR-91. The proposed student housing development is consistent with the nature and intensity of use proposed under the adopted 2005 LRDP. Accordingly, the proposed project would not generate trips on these regional freeway and highway facilities beyond that which was analyzed programmatically in the LRDP EIR. Therefore, analysis of the project's impacts on these facilities is not warranted in the project EIR.

c) 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 project has no air-traffic component and would not construct tall structures near an airport; therefore, the project would not result in impacts on air traffic that were not considered in the LRDP EIR. This impact has been adequately addressed in the LRDP EIR, and further discussion is not warranted in the project EIR.

d) The LRDP EIR (page 4.14-66) concludes that hazardous road conditions impacts would be less than significant with implementation of LRDP Program and Practice (PP) 4.14-4, which requires the campus to consult with design architects for roadway and parking improvements, and PP 4.14-5, which requires at least one unobstructed lane in both directions during project construction or, if infeasible, the incorporation of appropriate traffic controls or alternate routes, as necessary to maintain safe traffic conditions. The project proposes a new parking structure and on-site access roads that would need to conform to the Campus Design Guidelines, as required in PP 4.14.-4. The project EIR will incorporate an analysis of the project's conformance to these guidelines and address any additional hazardous traffic conditions that may be created by the project, including temporary impacts due to construction traffic.

e) The LRDP EIR (page 4.14-69) identifies a less-than-significant long-term impact on emergency access based on the range of planning strategies limiting on-campus traffic and enhancing emergency access throughout the campus. For temporary construction impacts, mitigation is provided to reduce the emergency access impact to a less-than-significant level, including LRDP Program and Practice (PP) 4.14-5, described in item d, above, and PP 4.14-8, which requires disclosure of roadway closures to relevant campus and outside emergency entities. The project EIR will include a discussion of any emergency access impacts presented by project design, and will identify any need for temporary lane closure during construction and any associated impacts on emergency access.

f) The LRDP EIR (page 4.14-74) identifies various transportation planning strategies promoting public transit that support the determination that implementation of the 2005 LRDP would result in a less-than-significant impact on alternative transportation plans. These include Planning Strategy (PS) Transportation 1 (multi-modal transportation plan), PS Transportation 3 (continuous network of bicycle lanes), and PS Transportation 5 (bicycle parking at convenient locations), which are included as part of the project. The project EIR will include analysis of the project design pursuant to any adopted campus plans for alternative modes of transit, including pedestrian, shuttle, and bicycle access.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
17. UTILITIES AND SERVICE SYSTEMS -- Would the project:		
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	■
b) 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?	☐	■
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	■	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	■
e) Result in a determination by the wastewater treatment provider, which 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?	☐	■
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	■
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?	☐	■
h) Create other utility and service system impacts?	■	☐

a) Wastewater treatment is provided by the City of Riverside Regional Water Quality Control Plant (RRWQCP) and the City is responsible for meeting federal and State requirements, including applicable requirements of the Santa Ana Regional Water Quality Control Board. The proposed student housing development is consistent with the scale of development analyzed in the LRDP EIR and would not generate a volume of wastewater or create a new source of wastewater beyond that which was considered in the LRDP EIR. The proposed project would not alter the LRDP EIR less-than-significant impact conclusion (LRDP EIR page 4.15-21), and additional discussion is not warranted in the project EIR.

b) The LRDP EIR (page 4.15-14) concludes that development under the 2005 LRDP would not require construction of new or expanded water treatment facilities and the impact of the LRDP development would be less than significant. This conclusion is based upon implementation of several water conservation and planning measures that are included as part of the project, including LRDP Planning Strategy (PS) Conservation 5 (Title 24) and Programs and Practices 4.15-1(b) through PP 4.15-1(d), which identify a series of conservation measures for design, maintenance and operation of campus facilities. The proposed student housing development is consistent with the scale of development analyzed in the LRDP EIR. The City of Riverside provides water service to the campus and is responsible for the treatment of all water supplies to the campus. This notice of preparation is being circulated to the City of Riverside to confirm the understanding that the LRDP EIR conclusion as to water treatment capacity remains valid. Barring any information to the contrary from the City of Riverside, water treatment capacity will not be addressed in the forthcoming EIR.

   See item e, below regarding wastewater treatment capacity. See item h, below, regarding capacity of City trunk sewers.

c) The LRDP EIR (page 4.8-31) recognizes the potential for increased runoff due to development of new student housing at this location, and the fact that this location is not served by existing storm drain facilities. LRDP Program and Practice PP 4.8-3(e) requires project-specific evaluation of estimated runoff and existing storm drain system capacity, with identification of needed improvements when existing capacity is not adequate. A project-specific analysis of stormwater discharges and conveyance capacity is being conducted as part of the ongoing project design effort. The results of this analysis, evaluation of resultant impacts, and identification of feasible project-level mitigation measures, if necessary, will be provided in the forthcoming project EIR.

d) 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. This conclusion takes into account the LRDP water conservation measures noted above in item b, which are included as part of the project. The proposed student housing development is consistent with the scale of development analyzed in the LRDP EIR. This notice of preparation is being circulated to the City of Riverside to confirm the understanding that the LRDP EIR conclusion as to water supply capacity remains valid.

Barring any information to the contrary from the City of Riverside, water supply to the campus will not be addressed in the forthcoming EIR.

e) 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 of Riverside regional treatment facility that receives campus wastewater (citing 8 million gallons per day (mgd) excess capacity at the time, compared to 0.9 mgd incremental flows projected from LRDP build-out). On this basis, the program-level impact is 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 that which was assumed in the LRDP EIR. This notice of preparation is being circulated to the City of Riverside to confirm the understanding that the LRDP EIR conclusion as to wastewater treatment capacity remains valid. Barring any information to the contrary from the City of Riverside, wastewater treatment capacity will not be addressed in the forthcoming EIR.

f) The LRDP EIR (page 4.15-19) concludes that solid waste generated during construction and operation of the proposed campus-wide development would be adequately accommodated in the Badlands Landfill, which was previously estimated to reach its capacity between 2018 and 2020. On this basis, the program-level impact is deemed less than significant. The project would not increase solid waste generation beyond that which was assumed in the LRDP EIR and there are no known changes with respect to available capacity at the Badlands Landfill. This impact has been adequately addressed in the LRDP EIR, and further discussion of the impact is not warranted in the project EIR.

g) 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. UCR voluntarily diverts 51 percent of solid waste from ongoing campus operation, and diverts 50 percent of campus construction waste. The proposed student housing development is consistent with the scale of development analyzed in the LRDP EIR; therefore, the project would not alter solid waste generation or diversion rates assumed in the LRDP EIR. This impact has been adequately addressed in the LRDP EIR, and further discussion of the impact is not warranted in the project EIR.

h) The LRDP EIR (page 4.15-25) concludes that the increased energy demand due to implementing the LRDP would be accommodated by existing facilities and would not create the need for new transmission facilities for electricity or gas. On this basis, and assuming implementation of Planning Strategy Conservation 5 (Title 24), which is included as part of the project, impacts were 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 energy demand beyond that which was assumed in the LRDP EIR. This impact has been adequately addressed in the LRDP EIR, and further discussion of the impact is not warranted in the project EIR.

In addition to the basic campus water supply issue addressed in item d, above, LRDP Program and Practice 4.15-1(a) requires project-specific analysis to confirm that the campus water distribution system is adequate to serve proposed development. Pursuant to PP 4.15-1(a), project-specific analysis of the campus water distribution system (for both domestic and fire flow) will be provided in the EIR, including identification of any necessary system upgrades and the resultant environmental impacts.

In addition to the basic campus wastewater treatment capacity issue addressed in item e, above, LRDP Mitigation Measure (MM) 4.15-6(a) and MM 4.15-6(b) require coordination with the City of Riverside to determine the adequacy of City trunk sewers to accommodate incremental wastewater flows and to participate in the cost of any required improvements. This coordination and analysis is conducted as part of the architectural project design, which is progressing concurrent with this environmental analysis. The results of required coordination between the campus and the City will be disclosed in the project EIR, including specifics as to any needed improvements to the City wastewater conveyance system.

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
18. MANDATORY FINDINGS OF SIGNIFICANCE – The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):		
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	■	□
b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	■	□

Issues	Additional Project-level Impact Analysis Required	Project Impact Adequately Addressed in Earlier Environmental Document
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	■	☐
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	■	☐

a) These impacts have all been addressed in previous responses provided in this initial study. The EIR's biological resources section will discuss specific project impacts on plants and wildlife, including avian species. The document will also evaluate the project's contribution to cumulative biological resources impacts and, where deemed necessary, will propose mitigation that will reduce any cumulative impact. As stated above in section 5 of this document, the project is not anticipated to result in significant cultural resources impacts, and that issue will not be addressed in detail in the project EIR.

b) The project EIR will examine all aspects of the project's impact on the environment that have not been eliminated from further discussion on the basis of this initial study, considering both short-term and long-term impacts.

c) Two cumulative projects within the UCR campus have been identified at the time this initial study was prepared: the proposed School of Medicine, located on the West Campus, generally northeast of Iowa Avenue and Martin Luther King Jr. Boulevard, and the Environmental Health and Safety facility, to be located on the north side of Linden Street, south of Watkins Drive, and west of Valencia Hill Drive. Additional off-campus cumulative projects will be identified through coordination with City, County, and other agencies as work on the Glen Mor 2 Student Apartments project-level EIR proceeds. The project EIR will take stock of these cumulative projects to identify any cumulative impacts that would occur in the vicinity of the project and fully evaluate the project's potential to contribute to these cumulative impacts. By distribution of this initial study as part of the Notice of Preparation for this project, the campus is soliciting input as to any other projects that should be considered in the cumulative impact analysis.

d) The project's direct and indirect effects on human beings, including but not limited to those related to air quality, hazards, and noise, will be fully evaluated in the project EIR.

VI. SUPPORTING INFORMATION SOURCES

University of California, Riverside. 2005 Long Range Development Plan Final Environmental Impact Report. November 2005. (includes Mitigation Monitoring and Reporting Program)

Chambers Group, Inc. Historic Resources Evaluation: Assessor Parcel Numbers 251-18-005-6, City of Riverside, Riverside County, California. December 2008

VII. INITIAL STUDY PREPARERS

ICF International:
Kathleen Dale
Alex Hardy
Aaron Brownwood

University of California, Riverside Campus
Tricia D. Thrasher

University of California, Office of General Counsel
Kelly L. Drumm
Alicia Jensen

NOP Response Letters

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-200
Ontario, CA 91764
(909) 484-0167

ARNOLD SCHWARZENEGGER, Governor
JOHN McCAMMAN, Director

August 19, 2010

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STATE CLEARING HOUSE

Ms. Tricia D. Thrasher
Regents of the University of California
1111 Franklin Street, 12th Floor
Oakland, CA 94607

Re: Notice of Preparation of Draft Environmental Impact Report
Glen Mor 2 Student Apartments -- [redacted]

Dear Ms. Thrasher:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the Notice of Preparation for the Draft Environmental Impact Report (DEIR) for the Glen Mor 2 Student Apartments on the University of California Riverside campus. The project involves the construction and operation of a student housing community on 21 acres of University-owned property on the UC Riverside campus. The project also involves the restoration of a 0.4 mile stretch of an arroyo on the site's northern boundary.

The Department is responding as a Trustee Agency for fish and wildlife resources [Fish and Game Code Sections 711.7 and 1802 and the California Environmental Quality Act (CEQA) Guidelines Section 15386], and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines Section 15381), such as a Lake or Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*) and/or a California Endangered Species Act (CESA) Permit (California Fish and Game Code Sections 2080 and 2080.1).

The site is located in the City of Riverside, County of Riverside within the boundary of the University of California Riverside campus.

The proposed project consists of 5 residential apartment buildings (810 student beds), a food emporium, a community building, executive retreat center, parking structure and other infrastructure improvements.

The project is located within the boundary of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and is subject to the provisions and policies of that plan. The MSHCP is a Natural Communities Conservation Plan that provides coverage for 146 species and up to 510,000 acres. Participants in the MSHCP are issued take authorization for covered species and do not require Federal or State Endangered Species Act Permits.

Should the applicant choose not to process the development project through the MSHCP for covered species, then the project is subject to the Federal Endangered Species Act and/or the California Endangered Species Act (CESA) for threatened and endangered species. A CESA Permit must be obtained if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. The Department's CESA Incidental Take Permit state that a project must fully minimize and mitigate impacts to State-listed resources.

The DEIR should specify whether the project will obtain take through the Multiple Species Habitat Conservation Plan as a Participating Special Entity or will need to obtain take through a CESA permit.

The Department is concerned about the continuing loss of jurisdictional waters of the State and the encroachment of development into areas with native habitat values. The DEIR should contain sufficient, specific, and current biological information on the existing habitat and species at the project site; measures to minimize and avoid sensitive biological resources; and mitigation measures to offset the loss of native flora and fauna and State waters. If the project site contains Federally- or State-listed species, the DEIR should include measures to avoid and minimize impacts to these species as well as mitigation measures to compensate for the loss of biological resources. The DEIR should not defer impact analysis and mitigation measures to future regulatory discretionary actions, such as a Lake or Streambed Alteration Agreement, CESA Permit, or Federal Endangered Species Act (ESA) Permit.

Although the proposed project is within the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and could be subject to Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, a Lake and Streambed Alteration Agreement Notification is still required by the Department should the site contain jurisdictional waters. Additionally, the Department's criteria for determining the presence of jurisdictional waters are generally more comprehensive than the MSHCP criteria in Section 6.1.2. The CEQA document should include a jurisdictional delineation if there are impacts to riparian vegetation or State waters.

This particular project has the potential to have significant environmental impacts on sensitive flora and fauna resources, including Federally- and State-listed endangered species. Therefore, the DEIR should include an alternatives analysis which focuses on environmental resources and ways to avoid or minimize impacts to those resources.

To enable Department staff to adequately review and comment on the proposed project, we suggest that updated biological studies be conducted prior to any environmental or discretionary approvals. The NOP states that the project involves the restoration of a 0.4 mile stretch of an arroyo along the site's northern boundary. The DEIR should include a biological survey, a jurisdictional delineation of waters of the State, impact analysis, mitigation plan, a revegetation plan and maintenance and monitoring plan. The following information should be included in any focused biological report or supplemental environmental report:

1. A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

    a. A thorough assessment of rare plants and rare natural communities, following the Department's November 2009 guidance for Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. The guidance document can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

    b. A complete assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be considered. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

    c. Rare, threatened, and endangered species to be addressed should include all those which meet the CEQA definition (See CEQA Guidelines, 15380)

    d The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the California Fish and Game Code.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts.

    a. CEQA Guidelines, 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

    b. Project impacts should be analyzed relative to their affects on off-site habitats. Specifically, this should encompass adjacent public lands, open space, adjacent natural habitats, and riparian ecosystems. In addition, impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided.

    c. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

d. A cumulative effects analysis should be developed as described under CEQA Guidelines, 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

e. The document should include an analysis of the effect that the project may have on the Western Riverside Multiple Species Habitat Conservation Plan. Under Sections 2800-2835 of the California Fish and Game Code, the Department, through the Natural Communities Conservation Planning (NCCP) program is coordinating with local jurisdictions, landowners, and the Federal Government to preserve local and regional biological diversity.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated (CEQA Guidelines 15126.6). A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid and/or otherwise minimize project impacts. Off-site compensation for unavoidable impacts through acquisition and protection of high-quality habitat should be addressed.

b. The Department considers Rare Natural Communities as threatened habitats having both local and regional significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts.

c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

4. A CESA Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the California Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting

program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

a. Biological mitigation, monitoring, and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

b A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

5. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

a. Under Section 1600 *et seq*. of the California Fish and Game Code, the Department requires the project applicant to notify the Department of any activity that will divert, obstruct or change the natural flow or the bed, channel or bank (which includes associated riparian resources) of a river, stream or lake, or use material from a streambed prior to the applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flow. The Department's issuance of a Lake and Streambed Alteration Agreement for a project this is subject to CEQA will require CEQA compliance actions by the Department as a responsible agency. The Department, as a responsible agency under CEQA, may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. However, if the CEQA document does not fully identify potential impacts to lakes, streams, and associated resources (including, but not limited to riparian and alluvial fan sage scrub habitat) and provide adequate avoidance, mitigation, monitoring, and reporting commitments, additional CEQA documentation will be required prior to execution (signing) of the Streambed Alteration Agreement. In order to avoid delays or repetition of the CEQA process, potential impacts to a lake or stream, as well as avoidance and mitigation measures need to be discussed within this CEQA document. The Department recommends the following measures to avoid subsequent CEQA documentation and project delays:

(i) Incorporate all information regarding impacts to lakes, streams and associated habitat within the DEIR. Information that should be included within this document includes: (a) a delineation of lakes, streams, and associated habitat that will be directly or indirectly impacted by the proposed project; (b) details on the biological resources (flora and fauna) associated with the lakes and/or streams; (c) identification of the presence or absence of sensitive plants, animals, or natural communities; (d) a discussion of environmental alternatives; (e) a discussion of avoidance measures to reduce project impacts, (f) a discussion of potential mitigation measures required to reduce the project impacts to a level of insignificance; and (g) an analysis of impacts to habitat caused by a change in the flow of water across the site. The applicant and lead agency should keep in mind that the State also has a policy of no net loss of wetlands.

(ii) The Department recommends that the project applicant and/or lead agency consult with the Department to discuss potential project impacts and avoidance and mitigation measures. Early consultation with the Department is recommended since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Streambed Alteration Agreement Notification package, please visit our website at: http://www.dfg.ca.gov/habcon/1600/ or call (562) 430-7924.

Thank you for this opportunity to comment. Please contact Robin Maloney-Rames at (909) 980-3818, if you have any questions regarding this letter.

Sincerely,

Jeff Brandt
Senior Environmental Scientist

cc: Anna Milloy, ES
State Clearinghouse, Sacramento

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

DESIGN & CONSTRUCTION
UC RIVERSIDE
2010 AUG 16 PM 2:47

August 11, 2010

Ms. Tricia D. Thrasher, ASLA, LEED AP, Principal Environmental Project Manager
UNIVERSITY OF CALIFORNIA, RIVERSIDE
Office of Design & Construction
3615-A Canyon Crest Drive
Riverside, CA 92507

Re: California Environmental Quality Act (CEQA) Subsequent/Supplemental EIR for the proposed **University of California Riverside Glen Mor 2 Student Apartments: Family, Apartment Housing and Related support, Open Space and Athletics and Recration Project Uses under the 2005 LRDP Land Use Plan**; located on the University of California, Riverside Campus; in the City of Riverside; Riverside County, California

Dear Ms. Thrasher:

The Native American Heritage Commission provides a list of Native American Contacts that are culturally-affiliated for the proposed on campus housing project to situated on approxiemately 21-acres resulting in five residential buildings (810 student beds and 232 apartment-style units – Project located in Riverside County

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes that may have knowledge of cultural resources in the project area. A list of Native American contacts is attached to assist you. It is advisable to contact the persons listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area.

Further, we recommend that you contact the Information Center at the University of California, Riverside (951-827-5745), part of the California Historical Resources Information System (CHRIS) to identify any recorded archaeological sites in the 'area of potential effect' (APE). Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. Lead agencies should consider avoidance, in the case of cultural resources that are discovered. A tribe or Native American person may be the only source of information about a cultural resource.

State of California regulations provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. California Government Code §27460 should be followed in the event of an accidental discovery of human remains during any ground-breaking activity; in such cases California Health & Safety Code §7050.5 may apply.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton, Program Analyst

Cc: State Clearinghouse
Attachment: Native American Contact List

Native American Contacts
Riverside County
August 11, 2010

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resource Center
P.O. Box 1477 Luiseno
Temecula , CA 92593
pmacarro@pechanga-nsn.
(951) 308-9295 Ext 8106
(951) 676-2768
(951) 506-9491 Fax

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 609 Cahuilla
Hemet , CA 92546
srtribaloffice@aol.com
(951) 658-5311
(951) 658-6733 Fax

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
(909) 262-9351 - cell

San Manuel Band of Mission Indians
James Ramos, Chairperson
26569 Community Center Drive Serrano
Highland , CA 92346
(909) 864-8933
(909) 864-3724 - FAX
(909) 864-3370 Fax

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
mcontreras@monongo-
(951) 755-5025
(951)201-1866 - cell
(951) 922-0105 Fax

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
(626) 286-1262 -FAX
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 Fax

San Manuel Band of Mission Indians
Ann Brierty, Policy/Cultural Resources Departmen
26569 Community Center. Drive Serrano
Highland , CA 92346
abrierty@sanmanuel-nsn.
(909) 864-8933 EXT-3250
(909) 649-1585 - cell
(909) 862-5152 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed eral NAGPRA. And 36 CFR Part 800.3.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed University of California , Riverside Glen Mor 2 Student Apartments Project; located in the City of Riverside; Riverside County, California.

Native American Contacts
Riverside County
August 11, 2010

Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director
35008 Pala-Temecula Rd.PMB Box 445 — Luiseno
Pala, CA 92059
cupa@palatribe.com
(760) 891-3590
(760) 742-4543 - FAX

Cahuilla Band of Indians
Luther Salgado, Sr., , Chairperson
PO Box 391760 — Cahuilla
Anza, CA 92539
tribalcouncil@cahuilla.net
915-763-5549

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA 92593
tbrown@pechanga-nsn.gov
(951) 676-2768
(951) 695-1778 Fax

Anna Hoover, Cultural Analyst
Pechanga Cultural Resources Department
P.O. Box 2183 — Luiseño
Temecula, CA 92593
(951-770-8104
(951) 694-0446 - FAX
ahoover@pechanga-nsn.gov

Willie J. Pink
48310 Pechanga Road — Luiseno
Temecula, CA 92592
wjpink@hotmail.com
(909) 936-1216
Prefers e-mail contact

Joseph Ontiveros, Cultural Resource Department
SOBOBA BAND OF LUISENO INDIANS
P.O. BOX 487 — Luiseno
San Jacinto, CA 92581
(951) 654-5544, ext 4137
(951) 663-5279
jontiveros@soboba-msn.gov

Serrano Nation of Indians
Goldie Walker
6588 Valaria Drive — Serrano
Highland, CA 92346
(909) 862-9883

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed eral NAGPRA. And 36 CFR Part 800.3.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed University of California , Riverside Glen Mor 2 Student Apartments Project; located in the City of Riverside; Riverside County, California.

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

August 18, 2010

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

Notice of Preparation of a Draft Environmental Impact Report (Draft EIR) for the Glen Mor 2 Student Apartments Project

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft environmental impact report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality analysis and electronic versions of all air quality modeling and health risk assessment files. Electronic files include spreadsheets, database files, input files, output files, etc., and does not mean Adobe PDF files. Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. Alternatively, the lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2007 Model. This model is available on the SCAQMD Website at: www.urbemis.com.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian V. MacMill

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
RVC100810-04
Control Number

Community Development
Department
Planning Division

CITY OF RIVERSIDE

September 7, 2010

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

SUBJECT: GLEN MOR 2 STUDENT APARTMENTS PROJECT: NOTICE OF PREPARATION FOR AN ENVIRONMENTAL IMPACT REPORT

Dear Ms. Thrasher:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the proposed Glen Mor 2 Student Apartments Project. Located on the northwest corner of Valencia Hill Drive and Big Springs Road, the project includes the construction of five five-story residential buildings, a food emporium, a resident services office, a community building, a three-level parking structure, and an executive retreat center. The project will provide 810 student beds in 232 apartment style units.

Given the prominent location of the proposed project – adjacent to an established residential neighborhood – City staff has reviewed the NOP and offers the following comments for your review and consideration:

- As identified in the NOP, further environmental analysis will be required to assess the probable environmental impacts associated with the development of the Glen Mor 2 Student Apartments Project on the surrounding area, including the adjacent residential neighborhood. A thorough discussion and analysis is needed to fully mitigate all potential impacts on the surrounding area, including aesthetics, land use compatibility, noise, biology, traffic, and utilities.

- The City's Public Works – Traffic Engineering Section requests that the prospective traffic impact analysis take into account the current design/layout of Valencia Hill Drive (with the cul-de-sac), including the parking restrictions currently in place. In addition, the traffic study should also assess the traffic impact on the intersection of Valencia Hill Drive and W. Big Springs Road given the proposed placement of the project driveway near the intersection. Traffic Engineering staff requests a meeting with the prospective traffic consultant to discuss the scope of study area and project trip distribution prior to commencing the traffic study so as to ensure that all traffic impacts are properly analyzed and, if necessary, mitigated.

- The City's Public Works Department notes that the project is subject to payment of appropriate sewer capacity charges prior to connection to the City's collection system. Additionally, the installation of a service lateral connection to the existing 15-inch City-owned sewer main is subject to a Construction Permit and inspection by the City. Occupancy of this development will result in increased monthly sewer service charges to the University, based on increased water consumption.

- The project shall implement and maintain appropriate construction-phase and post-construction BMPs (Best Management Practices) to minimize pollutant loads in urban runoff. The project needs to comply with all Federal and State regulations related to water quality, including the Federal Clean Water Act, the Porter-Cologne Water Quality Control Act and all applicable provisions of the statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board.

In addition to addressing the above-mentioned environmental impacts, the City's Public Works Department requests conditioning the project to install sidewalk on the westerly side of Valencia Hill Drive between Big Springs Road and Watkins Drive. The sidewalk needs to be constructed in conjunction with this development to accommodate anticipated pedestrian movement.

Your continued cooperation with the City of Riverside is greatly appreciated. City staff strongly encourages UCR to submit any future building design and landscaping plans to the City for review and comment and looks forward to receiving a draft EIR that full analyzes and mitigates all potential environmental impacts. Should you have any questions regarding this letter, please contact Moises A. Lopez, Associate Planner, at (951) 826-5264 or by email at mlopez@riversideca.gov.

Sincerely,

Ken Gutierrez, AICP
Planning Director

cc: Ronald Loveridge, Mayor
Riverside City Council Members
Brad Hudson, City Manager
Belinda Graham, Assistant City Manager
Tom DeSantis, Assistant City Manger
Kristi Smith, Supervising Deputy City Attorney
Siobhan Foster, Public Works Director
Tom Boyd, Deputy Public Works Director/City Engineer
Rob Van Zanten, Principal Engineer
Steve Libring, Traffic Engineer

WARREN D. WILLIAMS
General Manager-Chief Engineer

DESIGN & CONSTRUCTION
UC RIVERSIDE

2010 SEP -7 AM 8: 17

1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

September 1, 2010

Ms. 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, California 92507

Dear Ms. Thrasher:

Re: Notice of Preparation of an Environmental Impact Report for the Glen Mor 2 Student Apartments Project

This letter is written in response to the Notice of Preparation of an Environmental Impact Report (EIR) for the Glen Mor 2 Student Apartments Project. The proposed project would involve the construction of a student housing community on approximately 21 acres located northwest of the intersection of Valencia Hill Drive and Big Springs Road, in the city of Riverside, Riverside County. The Riverside County Flood Control and Water Conservation District (District) is providing the following comments/concerns that should be addressed in the EIR:

1. Page 25 of the Tiered EIR Scoping Initial Study indicates that the project area is not located within a Federal Emergency Management Agency (FEMA) Special Flood Hazard Area (SFHA). Please be advised that a portion of the project area may be located within a FEMA SFHA as shown on Panel 06065C0727G of the FEMA Flood Insurance Rate Maps (FIRM) and is subject to a 1 percent or greater chance of flooding in any given year. A copy of the applicable portion of the FIRM is enclosed for your use. Any development or encroachments made to the SFHA shall be reviewed by the community's floodplain administrator to determine whether proposed building sites will be reasonably safe from flooding. The City of Riverside is the community who shall administer, coordinate, implement, and enforce the local floodplain ordinance by granting or denying development permits in accord with its provisions. This may include the submittal of studies, calculations, plans and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) in accordance with Title 44 Section 60.3 (d)(4) of the Code of Federal Regulations prior to final approval of the project, and a Letter of Map Revision (LOMR) immediately after completion of the project.

2. The proposed project is located within the adopted University Master Drainage Plan (MDP) boundary. When fully implemented, the MDP facilities will relieve those areas within the plan of the most serious flooding problems and provide adequate drainage outlets. The MDP may be impacted as a result of the potential diversions or concentration of stormwater flow. The proposed project also has the potential to increase stormwater runoff and erosion downstream of the project area. Potential impacts to the MDP should be addressed in the EIR. The MDP maps can be viewed online at www.rcflood.org. To obtain further information on the MDP and the proposed facilities, please contact Edwin Quinonez of the District's Planning Section at 951.955.1345.

Thank you for the opportunity to review the Notice of Preparation. Please forward any subsequent environmental documents regarding the project to my attention at this office. Any further questions concerning this letter may be referred to Jason Swenson at 951.955.8082 or me at 951.955.1233.

Very truly yours,

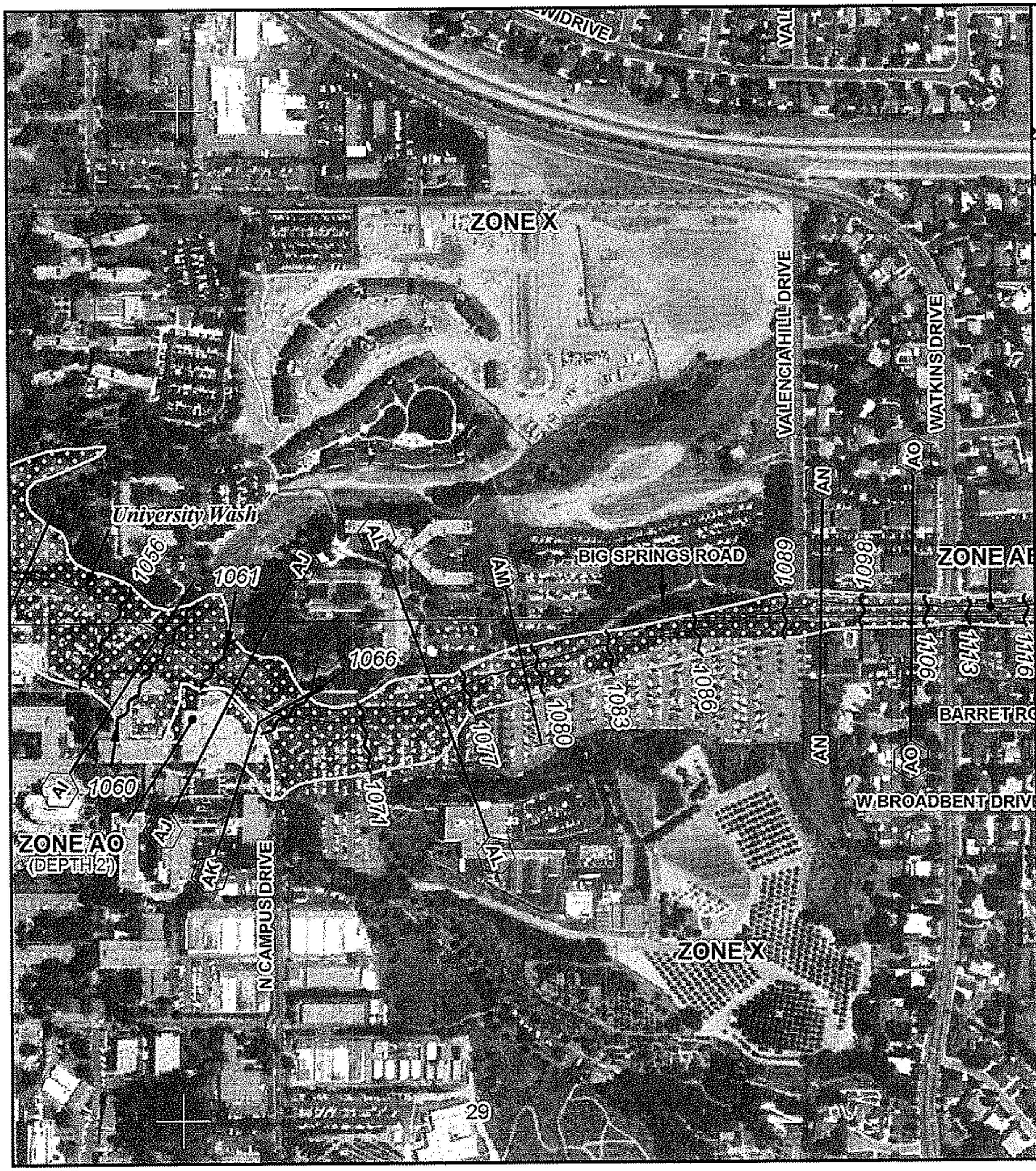
Arturo Diaz

ARTURO DIAZ
Senior Civil Engineer

Enclosure

ec: TLMA
Attn: Kristi Lovelady
Edwin Quinonez

JDS:mcv
P8\133033



MAP SCALE 1" = 500'

250 0 500 1000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0727G

FIRM

FLOOD INSURANCE RATE MAP

RIVERSIDE COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 727 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIVERSIDE COUNTY	060245	0727	G
RIVERSIDE, CITY OF	060260	0727	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C0727G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Scoping Meeting Transcript

UNIVERSITY OF CALIFORNIA, RIVERSIDE

GLEN MOR 2 STUDENT APARTMENTS PROJECT

SCOPING MEETING

REPORTER'S TRANSCRIPT OF PROCEEDINGS

LOCATION:	University of California Riverside Bannockburn Conference Room, J102 3615A Canyon Crest Drive Riverside, CA
DATE AND TIME:	Wednesday, August 25, 2010 6:00 p.m. to 6:46 p.m.
REPORTED BY:	DIANE CARVER MANN, CSR CSR NO. 6008
JOB NO.:	69354DM

A P P E A R A N C E S

KATHLEEN DALE, Regulatory Compliance Specialist,
ICF International

TIM BROWN, Project Manager

DON W. CASKEY, FAIA
University of California, Riverside
Associate Vice Chancellor, Campus Architect

TRICIA D. THRASHER, ASLA, LEED AP
Principal Environmental Project Manager

RIVERSIDE, CALIFORNIA WEDNESDAY, AUGUST 25, 2010

P-R-O-C-E-E-D-I-N-G-S

-o0o-

MR. CASKEY: Why don't we go ahead and get started. There might be some misconceptions as to what this meeting is really all about. It's not a community meeting, and it's really a meeting that -- in fact, I believe it's not a meeting that we actually had to have. We opted to have it. It is a meeting where we're trying to get some information from the community as to what things that you think that we need to be addressing in an EIR; okay? So it's future tense. We're trying to get your feedback, you know, ahead of it so that we can respond accordingly.

So I'm not actually going to be running the meeting today. We've asked Kathy Dale, who is a regulatory compliance specialist and the project manager from ICF International, the group that is actually involved in doing the EIR. She'll be conducting the meeting.

The meeting is technically a meeting where we're collecting information, and I'll let you go through that. But this is in regards to the Glen Mor 2 Housing Project, which is approximately 800 beds. We've had two community meetings in regards to it so far. And this is only about the EIR that we are tasked to do in regards to that.

Prior to giving it over to Kathy, the only other thing I wanted to say was that there is -- the design work is still underway. There's a lot of design work that's still going. There are some questions that are out there that I am duty-bound to get back to folks in the community as to what we're doing, why we're doing it and all the rest of that.

And I sent a letter to Mr. McPhearson as a follow-up to that. I don't know if you are aware, but I'm assuming you probably are, that he had sent a letter -- and a number of you had -- to the chancellor in regards to the project. And he had 14 points in his letter, and I will be addressing all 14 of those points back to him.

But I sent him a letter saying that, you know, we wanted to get to a certain point in the design so that what I'm stating back has been -- are points that are developed from the design process. So just so the folks here know where that's at, I suspect that I'll probably be putting that letter together to him in the next 30 to 45 days in terms of the design process, that we'll be far enough along that we'll be able to address a number of the items that he brought up specifically in his letter. And so that I'd let him know so he didn't think he fell off the face of the earth or something in regards to us responding to him.

So with that I'm going to turn over the meeting to Kathy and let you continue on.

MS. DALE: Thank you. I'll just stand up here if you're comfortable there. Thank you. As Don mentioned, my name is Kathy Dale, and I'm the team leader for ICF International, who is preparing the EIR for the campus on this project. And I want to just explain to you what the purpose of the meeting is tonight, sort of the meeting format, what we've done to date and what the next steps are.

The meeting tonight is called a scoping meeting, and it's one of the procedural aspects under the California Environmental Quality Act for preparation of an environmental impact report. And what this meeting is, is an opportunity for interested parties to let the lead agency, who is the University, who is the proponent for the project, know what issues you think need to be addressed in the environmental impact report.

There is at this point a limited ability for us to answer questions, so I'd ask you to please be patient with us on that fact. If you do have questions, we'll try to answer them. But realize we may not be able to. As far as the meeting format, I'll give you a little overview of the Notice of Preparation, and then after I'm done, we'll ask anyone if they'd like to speak.

The transcriptionist has asked if you would please speak clearly, maybe at a moderate pace so she can follow you, and then maybe once you've spoken if you could sign in over here. Before? Okay. There's a space for your name, your affiliation, if you're associated with an agency or an organization. There's also an address or phone and e-mail information. If you'd like to provide that, fine, but that's not mandatory. And then the record that the transcriptionist is preparing will be part of the environmental impact report.

As far as the process today, I think most of you have been here before for the community meetings and are familiar with the project layout. And what ICF has done today is prepared a document called a Notice of Preparation. That document was released by the campus on August 6. As part of that release there was a notice published in the

Press Enterprise. The notice and the documents were posted on the campus website. We also did a direct mailing to a number of public agencies we're obligated to coordinate with under the California Environmental Quality Act. And did I miss anything? I think that was it. And there was one individual that was noticed who has a request on file with the campus to receive notices.

And I did want to let you know that the campus has provided a handout in the back of the room for any of you that are interested in receiving CEQA notices from the campus, how you can get your contact information to them so that you would receive direct notice as well, because I understand some people may be concerned that they didn't receive direct notice of this.

The Notice of Preparation materials that were posted on the website, there's two substantive components of that. One is the project description. And what we've done is based on a site layout. It's additional information from the campus and from design plans in progress. We've prepared a detailed description. It's 11 pages of text and graphics that give more detail about the nature of the project, and then based on that project description we prepared a documented called Initial Study. That's a standard checklist that comes out of the State guidelines for implementation of the California Environmental Quality Act, and it has about 50 questions on it that you answer how the project may impact the resources associated with each of those questions.

And we have structured that initial study based on the long-range development plan EIR as the background document, and on the basis of the LRDP EIR, we've identified a number of issues that are going to be addressed in the environmental impact report and a number of issues that are adequately addressed by the long-range development plan and that don't need to be addressed at a project level.

And for the issues that need to be addressed at a project level, I'll just itemize them for you because they are most of the issues that are covered on the initial study checklist. And those that will be covered in the EIR are aesthetics, air quality, biological resources, geology and soils. There's a new issue called greenhouse gases that wasn't a required content or a required resource evaluation at the time the LRDP EIR was prepared. Hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, recreation, transportation and traffic and utility and service systems. And that's all but about two or three of the issues that are on the list.

There are copies of the printed document in the back of the room here for anybody who hasn't seen it yet, and the documents are posted right on the main page of the campus website for the Office of Design and Construction. There's a link right there that takes you to a single Acrobat format document that has the whole content of the notice, the distribution list of who it was sent to directly, the project description and the initial study.

Now, the next steps are after we've received any input tonight and also any input that will come through written comments in response to the Notice of Preparation, there's formally a 30-day review period for that, but because we're going to be continuing to work on the draft EIR, we can accept comments a reasonable time beyond that deadline.

We will be completing the technical evaluations in the Environmental Impact Analysis, and the campus will be releasing a draft Environmental Impact Report, and currently we anticipate that that will becoming out in mid November.

That was everything I wanted to cover. Did

I miss anything? No?

MR. CASKEY: Did you ask the State the date that you would like any written comments?

MS. DALE: September 6 is the formal date we would prefer to have them back by, but again we're going to be continuing to work on things, so if you need another week or two after that, we can accommodate that.

So with that I guess we can -- it's a small group, so I think we can in an orderly manner speak if you wish. And if you want to speak from your chair or if you want to stand, that's fine. If you could just sign in and state your name clearly for the transcriptionist.

MR. DOBRY: My name is Robert Dobry, D-o-b-r-y. I live right across from the campus, 3624 Valencia Hill Drive. That's right here, right there. So yeah. In fact this is my walkway. This whole piece is my property (pointing). I've been quite affected by this up here by one of the CEQA points which is noise; okay? And I think my neighbors are very concerned about the more congestion, more noise generated down here.

The noise up here is incredible; okay? It doesn't stop until 10:00 school nights, and right now there's people using it that are illegal or aren't allowed to be there but they're there anyway. For some reason or other the University is not arresting them for trespassing. They're using the property, and they're making a lot of noise. Noise is one of the big concerns of the neighbors because we moved here so that we could have a high-quality life. Having a lot of noise is very destructive to a high quality of life.

So the congestion and the noise is the main thing on people's minds -- okay? -- lots of traffic, lots of, you know, the things that go on at college campuses because they're young people and they like to drink and party and this sort of stuff.

There's something that I'm even more concerned about; okay? We reached the peak-oil about five years ago, but we reached the peak-oil plateau six years ago. We're still level in a peak-oil plateau. To remain level on peak-oil plateau, the petroleum industry worldwide has been pincushioning all the oil fields because they know where they are. It's called infield drilling, and they're using very high technology. They're sucking these oil fields dry at tremendous rates known as depletion.

So soon we're going to fall off the

peak-oil plateau, and everybody worldwide has been ignoring it. When we fall off the peak-oil plateau, the economic crisis we have right now will become several times greater. It will probably become much worse than the economic collapse of 1870 to 1880. If you know your history, that was much worse than the great depression we had. This thing we're going to have will probably be worse than that. And it will probably take several decades to bail ourselves out because people have to get serious about developing new technologies and about conserving.

Still on TV, I was just watching the news, and they're still advertising. In five minutes I saw advertisements for the biggest-engine-in-their-class cars; okay? So everybody is still in a total state of denial. I just saw a realtor talking about, "Oh, by the end of the year the banks will be lending and the housing market will come back." This is all wishful thinking.

I was stationed at March Air Force Base when the Evil Empire collapsed; okay? Previous to the Evil Empire collapse we had no idea it was going to collapse. We were building like crazy up there; okay? And when it collapsed, all these new buildings -- we had spent unimaginable amounts of money to build beautiful new buildings. They all become excess inventory.

Shortly after that I entered civilian life and started working for the Air Force Satellite Control Network, and one of the tasks we were given was to do base realignment and closure. We had far more bases, far more facilities than we could possibly use.

Because of the coming economic collapse due to peak oil, the community is going to be in the same situation. The people that we have going to college now, most of them are not going to be able to have resources to go to college or at least to attend an upscale university like this. So we will -- and also we're going to have to do things like realign the activities people do for life; okay? We're going to have to bring back skills to America. We're going to have to bring back manufacturing to America, things like this which don't require a college degree, especially a liberal-arts-type college like this. They require tech schools. They require schools where people will get different types of skills, manual skills, manual dexterity skills to be able to work on assembly lines and do other things other than sit at a desk all day long.

What I'm concerned with is that we build out these liberal arts universities, especially the University of California system. You know, I love the University of California. Both my daughters graduated from the University of California. I live across the street. It's wonderful; okay? But I have to be a realist because I know what's going to happen in the future because I've been studying this peak-oil issue since I was a kid, really.

I'm very concerned that we're going to have the same situation as when Soviet Union collapsed whereby we'll have a huge amount of facilities in the University of California system which we won't be able to use because we're going to have to convert over to different things. Instead of everybody getting a college degree like they -- like President Obama says, everybody should have a college degree. That's wonderful. I wish everybody could have a college degree.

But we have to be realistic. We're not going to have the resources for everybody to have a college degree. Fewer people than today are going to be able to get a college degree until we bail ourselves out from this coming peak-oil crash, which will probably take at least 50 years. So I am concerned that we're going to have a campus realignment and closure.

Somebody may call me and say, "Bob Dobry, guess what? We need you to work on campus realignment and closure for the University of California system," just like I did for the United States Air Force bases; okay? If I can do it for the United States Air Force, I certainly can do it for the University of California.

So I am concerned -- you know, that's an open base now. You can drive up there and see all those dead buildings; okay? They're eyesores. Juvenile delinquents come in there and throw rocks through the windows. It looks terrible. It makes the place look like a giant dump. It used to be a beautiful place. I was stationed there three times; okay?

I am concerned that these new structures here, 300 rooms, there's a high risk. It's called risk. I'm an engineer, and we do risk analysis. I'm a systems engineer. Systems risk analysis is one of my occupations, one of my tasks. I'm very concerned that there will be a downscaling. I know it's going to happen; okay? There will be a severe downscaling of the University of California system, and a good part of that will hit the University of California at Riverside. So you may be knocked down to maybe 5,000 students. So you'll have all of this square footage which will be redundant. I'm afraid that an area like this may become dead like those buildings up there at March Air Force Base.

Now, I know right now -- I mean, if the University can't control this area here during the summer, if it doesn't have the police forces to keep people off of that property, is it going to be able to patrol criminals coming in here and throwing bricks through the windows, setting fires to buildings and all the other kind of stuff that happens to abandoned buildings?

So that's one of my big concerns, and that's definitely an environmental situation because, when you have all that square footage which is dead, not only do you have a gigantic cost keeping it up, but you have a huge issue keeping it from turning into a -- I don't know what you call it. It's like, you know -- I mean, if you go into Detroit, you know, entire blocks of Detroit are devastated by all the bums moving in and tearing the place up because there's been so much redundant properties that they're technically abandoned. They're owned by people but abandoned enough they can't be watch watched that much. All kinds of bums move in, and criminals move in and just turn the place into, you know, what looks like Europe after World War II.

And that's what I'm afraid of here. We're going to spend all this money. It's to go turn redundant in five years, and we won't have the police forces to keep the -- you know, the nefarious people out of it, and it's going to create quite a problem just like up there at March Air Force Base, which -- you know, I still use the B.X. and commissary all the time. I was just there a couple of days ago. That's where I still get my haircuts and stuff.

But most of those buildings are -- you know, they're not abandoned legally, but there's nobody there to watch them, so they're under constant attack and they look horrible. They really look horrible. It's a nightmare. And so you know, that's what I don't want to see. Thank you.

MS. DALE: Thank you. Anybody else?

MR. DAWSON: All right. My name is Kevin Dawson. I live at 269 Goins Court. And I am a neighbor, and I am a member of the University Neighborhood Association. I didn't find out about this meeting until today. And I question the sincerity of the campus saying that this meeting is to solicit input from the community, because how could you solicit input from the community if you don't notify the community that the meeting is going to be held so they can have enough time to assemble some thoughtful input and assess the information that you would have disseminated about your project?

We were hoping we would have heard whether the comments that we made at the two previous public meetings would have changed the project in some way. And certainly I guess that we must assume that there's been no changes and so we must address our comments as though the project is moving ahead without any changes from what was proposed before.

As Mr. Dobry indicated, there are a lot of concerns about noise and traffic. And I am concerned about those issues too. I feel that when we were at the two previous public meetings, there were sign-up sheets in the back, and I believe that most all of us signed those and left our contact information. It should have been an easy matter for the campus to have used that information to have contacted us in a timely manner regarding this public-comment-period time and this meeting tonight.

That said, in your EIR I certainly would like you to address the issue of the area of cut for your project, the average depth of cut, the surface area of fill and cut, the number of trucks that are going to be used to remove material or bring material in, the route that those trucks are going to take to remove the material, the hours of operation, et cetera. I'd like to know where the material is going to be taken to. I'd like to know what the offsite impacts are. I'd like a discussion of the impacts of the view lines for the off-campus neighbors.

Let's see. I hope that I mentioned that I'm interested in the average area slope and that of the cut. We need an intensive discussion about the traffic associated with this project and how that is going to affect traffic patterns and what is being proposed to minimize that traffic and its impacts upon the immediate neighbors in the neighborhood. I believe that the LRDP was flawed in making a statement that the cross-campus traffic could be closed off at some point and that it would be appropriate for all the campus traffic to be rerouted through our neighborhood.

That is an issue that is a very sore issue with the neighborhood, and because the neighborhood had been working with the City of Riverside for a number of years to put in place techniques that would reduce the amount of traffic through our neighborhood and yet we have our most immediate neighbors, University of California, of which many of us have been associated with either with staff, faculty or students, work to degrade our neighborhood by making plans that would route its traffic through our neighborhood.

I believe that the University has held quite a number of workshops recently and seminars and symposiums on the issue of global warming, sustainability issues and such. And it seems to me that if the University was sincere in its consideration of issues of sustainability, it would be wanting to look just off campus and say that there will be a time when it will be of value to the campus to have high-quality housing immediately adjacent to the campus where staff and faculty would want to live and be able to walk or bicycle onto campus and therefore that the campus should plan its development in such way to minimize its impact upon that neighborhood and to at least not be contributing to the degradation of the neighborhood.

In the last couple of years there's been a noticeable increase in the transformation of the housing stock from owner-occupied, single family residences to multi-unit rental properties. And that is not in the best interest of the campus in the long-term, and it's not in our best interest. We want to be good neighbors with UCR, but UCR needs to be an important, helpful good neighbor to us too.

I think that would do for now. Thank you, except I would like to be noticed on any future EIR issues.

MR. PHILLIPS: My name is Robert Phillips. I live at the corner of Watkins Drive and Valencia Hill Drive. My main concerns about this project -- apparently you haven't made any changes to it since the first meeting, so that means you haven't addressed the issue of the fact that you're adding a huge number of beds. And I don't remember, and I couldn't check my notes since I found out about this meeting at 5:15 this evening. Anyway, a lot of beds and completely inadequate parking.

So where are these cars going to go? Every kid who stays there is going to have a car and is not going to have anyplace to park. And we've been dealing with parking issues in our neighborhood just for years, and we've had all these parking restrictions put in. The kids ignore them. They park in front of my house all the time, and I have to call the City. And maybe they come out, maybe they don't come out. But it's another example of UCR creating a mess and dumping it on the City of Riverside to solve.

And the same thing with the traffic issues. In the LRDP it says the intersection of Watkins Drive and Big Springs Road will be Service Level F, the worst possible level, as a result of UCR's development. What's it going to be after you add all these beds and all these cars and force them to be using Big Springs Road to get out of the campus? It means you'll have to put in a traffic signal there, and it will still be Service Level F. And then if you put in a traffic signal, it will be too close to the stop sign. You'll have to take out the stop sign. It's going to be spread out through the neighborhood like cancer.

And I think those issues really need to be addressed, and I think you need to go back to the drawing board. And if you're going to build something, build parking lots that will accommodate the people that are going to be using the facility. Thank you.

MS. DALE: Anybody else wanting to make

any comments? Or I guess we can try to answer questions.

MR. CASKEY: No. We're just taking comments tonight.

MS. EVERETT: My name is Muriel Everett, and I'm a neighbor. And I would like you to repeat what you said in the first place of why this wasn't to be a public meeting or the community wouldn't be notified. I'm not repeating exactly what you said, but you were saying why we weren't notified.

MR. CASKEY: The notification was done with the procedures that we were guided in terms of CEQA.

MS. DALE: Right. We followed -- the California Environmental Quality Act for this process requires the campus to provide direct notice to public agencies that either have some kind of approval authority over the project or who are responsible for resources that might be affected by the project. It also requires them to send it to anybody who has placed one of these requests on notice. And to date the campus only has one request on notice, and we did send to that individual.

Also although it's not required, the campus also published a notice in the Press Enterprise, and I didn't mention, but there are two other circulations or postings that happened. Again they're required under the California Environmental Quality Act. There's an agency called the State Office of Planning and Research, and we sent the documents to them. They're in Sacramento, and they're responsible for ensuring that all responsible State agencies receive notice of the project. And then there's also a requirement to file it with the County Clerk. And again that isn't an opportunity for you to know about it unless you happen to go look at the flip board they keep in the County Clerk's office of these postings. But the notice in the newspaper and the posting on the campus website would have been the opportunities for you to find out about this or if you had the written request on file.

And you know, there's still an opportunity to provide comment and certainly to study the documents and understand how we've characterized the project, what we've identified as the issues that we think need to be looked at in detail and to let us know if you think that we are off base on something or if we've missed something.

MS. EVERETT: I thought we did that in the first two meetings.

MS. SNEDDEN: I just was saying we would be happy to comply if we had been notified. Were we not notified of the other two meetings by mail?

MS. DALE: It's a different procedure than at those meetings, and I don't know if Tricia wants to address that. My understanding is that those meetings were held under another agreement the campus has with the neighborhood to participate with them early in the design process. This is a separate process.

MR. CASKEY: You know, Kevin and I talked about it on the phone today, and if there was some misunderstanding in that regard, then I would apologize. The fact that we had sign-up sheets in the back before doesn't technically constitute what it is that we have to have on file.

So what I'm going to -- what I was talking to my own staff about today, because I would just as soon have more people here, not less -- so what we will probably do is to put out a prototypical draft letter and have it here for the next time we have a community meeting or we get together. We'll get it out to the community, and all you'll have to do is sign it, date it and put in your address. I think that's all we really need. The rest of it -- we'll basically write the letter. We'll draft the letter for you so that when you do that, we can then put it on file.

And it's only in regards to CEQA items. It isn't in regards to anything and everything. But on the community meetings we were contacting you directly. So I can see how that could be confusing, why are we are doing it one way one time and a different way another time? If you just wear the shoes of someone else, I can understand why that would be confusing and not -- you know, it is a different procedure, and we're actually trying to abide by the procedure we're legally required to do.

MR. DAWSON: I raise the question, then, if -- I hear what you're saying there, but the campus has a designated governmental and community relations person, and he didn't know about the meeting until today either. And so it seems to me that -- I mean, if you're going to be disseminating information, isn't he one of the people that you should work through to disseminate the information? Isn't he an appropriate person to use in that regard? That's his job, but he can't do his job if you guys don't provide him with the information.

MR. CASKEY: Jeff is right in the back

of the room. I was unaware that he did not know.

MS. EVERETT: So are any of those people here from the agencies that you notified?

MS. DALE: I don't believe so.

MS. THRASHER: We had received two letters from the agencies so far, but again there's another two weeks in the official period. And as Kathy said, we're not going to hold hard and fast to that. We'll take comments as long as we can as this document prepares. Once the EIR is prepared, there will be another similar to this meeting. That's why I really would like to get your requests in writing, because we have to keep a record. And that's why the law requires that we have written requests so we weren't, you know, in a position of, well, we notified that person but not that person. And that's why I'd really like to get your requests in writing so we have that all in a database and can use that.

And when the EIR goes out, there will be a public hearing similar to this to take your comments on that document as well. And this paper, if you picked it up back here, there's an e-mail -- you can do it by e-mail; you can do it by dropping a note at the office; you can do it by your name and address. And it's "Please notify me of CEQA notifications," and can be as you walk out the door or send it in the mail.

Anyway, we have to have a written record of that request. You can do it for all projects, certain kinds of projects, however you'd like to do that.

MS. DALE: If there are no more comments, I guess we are adjourned.

MR. DORBY: I have a question. For example, my comment is going to require a lot of research to come up with an answer because my comment ties in with a memeset which is in the nation today which is totally ignoring everything I said; okay? So are people going to properly research an answer for me not -- you know, because I hear answers to these similar type of issues on TV all the time, and the people just --

In fact five minutes before I came here, there's this lady saying, "Oh, by the end of the year, the economy will be coming back and the banks will be loaning people money so the housing market will be back to normal." I mean, stuff like that is utter nonsense. That person, who is supposed to have known, was just picking it out of her head -- off the top of her head without doing any research.

These issues we've brought up, are they

going to be properly researched, is my question.

MS. DALE: Would you like me to respond? I mean, what I heard from you from a CEQA perspective is that you have two concerns. One is, is there a need for the project? And two is, if the project is built, will it ultimately result in some type of blight condition because it's not needed and allowed to be abandoned? Does that summarize?

MR. DORBY: Yeah. The issue I have is that the economy is heading in a direction and there doesn't seem to be any way out -- okay? -- that it's headed for a collapse for the next several decades whereby we're going to have to severely scale back institutions such as this one right here; okay?

In fact -- and people are going to do a campus realignment closure, and when they look at the University of California system and they see these beautiful campuses heavily used, UCLA, University of California San Diego, Berkeley and then they look at some of these outlying campuses, for example, University of California Riverside, they're going to intend most likely to make the biggest cuts at institutions like this. So that's why I'm looking at the whole picture.

And professionally in my life I've had to do this stuff; okay? As I said, base realignment closure for United States Air Force; okay? So these things can be seen ahead. I'm a systems engineer. I work on systems, develop systems, realign systems, whatever; okay? And so to me this stuff is relatively easy to see because I know how to look at a situation -- a big situation, and I'm looking at from it the truth, the whole truth and nothing but the truth.

I don't have any colored glasses over my eyes. Nobody is paying me do this stuff, you know, to look one way or the other. I'm just looking at it straight on, honestly. And so I see stuff that most people in the community don't see because, when the issues come up to them, they have -- they don't want to hear it because it interferes with their memeset -- okay? -- their preconceptions.

So what I would like is that this -- the answers to my questions be researched objectively in that, you know, we have honest answers to my questions, especially, you know, the high risk that this property is going to get abandoned; okay?

MS. THRASHER: I think Kathy and I are going to try to do this together. I'm going to be real honest with you. There are limitations as to what we can and cannot do in this document. There is CEQA law, and there is -- there just are limitations. And if something is too speculative -- and I know that you are convinced -- and I may even be convinced by you -- that you are perfectly right. But there are definitions placed on us by law as to what we can and cannot do in this document. And some of what you want answered is outside the purview of this.

We can look at and talk about the issues that Kathy kind of tried to restate in what you said about future blight conditions. We certainly can look at noise. We certainly can look at traffic and those kinds of issues, but we can't go to the national economy. It's not part of what CEQA is or does or is defined.

MS. DALE: Or even the broader issue of realignment of the campus, if that's where you're going. We can look at this particular project. And one of the things we will need to do -- and we're still developing -- in an EIR is we have to look at alternatives.

There was a project-level EIR done. I know we did one on the student rec center many years ago when EIR's were very different animals then. And so one of the things we have to do with EIR that doesn't have to be done with studies for negative declarations is to look at alternatives. One of the mandatory alternatives we have to look at is the no-project alternative. So that analysis will address some of your concerns, or it should. We'll try do that, and you'll get a chance to tell us whether or not we hit the mark.

MR. DORBY: There's another thing. It's not part of CEQA, but I hate to see resources wasted at a time in the history of our nation when we really can't afford to waste resources. We have to maximize utilization of our resources today. We have to go into heavy conservation mode if we're going to survive this thing. We've got all of our citizens to look after, not just a small group of citizens that come to this university. We have to be concerned with how we're going to use our resources that are going to affect everybody in our nation.

MS. DALE: Anybody else? Thank you all.

MR. CASKEY: Thank you.

(The meeting was concluded at 6:46 p.m.)

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R E P O R T E R' S C E R T I F I C A T E

I, DIANE CARVER MANN, a certified shorthand reporter, do hereby certify that the foregoing pages comprise a full, true and correct transcription of the proceedings had and the testimony taken at the hearing in the hereinbefore-entitled matter of the University of California Riverside Glen Mor 2 Student Apartments Project Scoping Meeting.

Dated this 31st day of August 2010, at Chino, California.

Diane Carver Mann

DIANE CARVER MANN, CSR NO. 6008

Appendix B

Architectural Exhibits

Building Elevations

BUILDING B **&** C **- NORTH ELEVATION**

BUILDING B **&** C **- SOUTH ELEVATION**

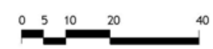
0 5 10 20 40

BUILDING D - NORTH ELEVATION

BUILDING D & E - SOUTH ELEVATION

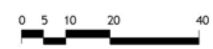
BUILDING F & G - NORTH ELEVATION

BUILDING F & G - SOUTH ELEVATION

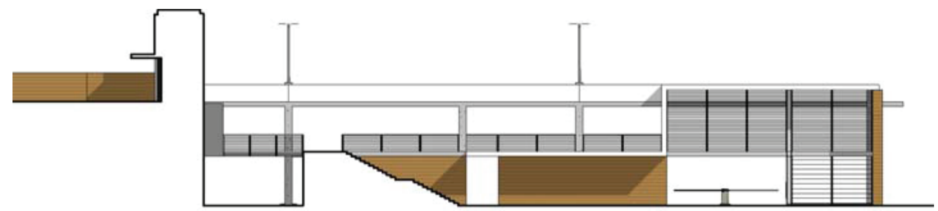


BUILDING H - NORTH ELEVATION

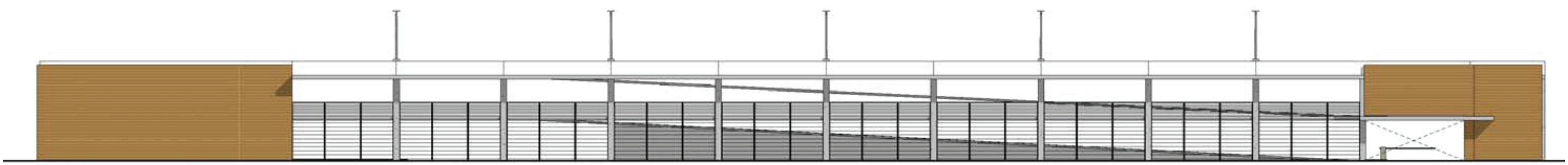
BUILDING H - SOUTH ELEVATION



BUILDING J
EAST ELEVATION

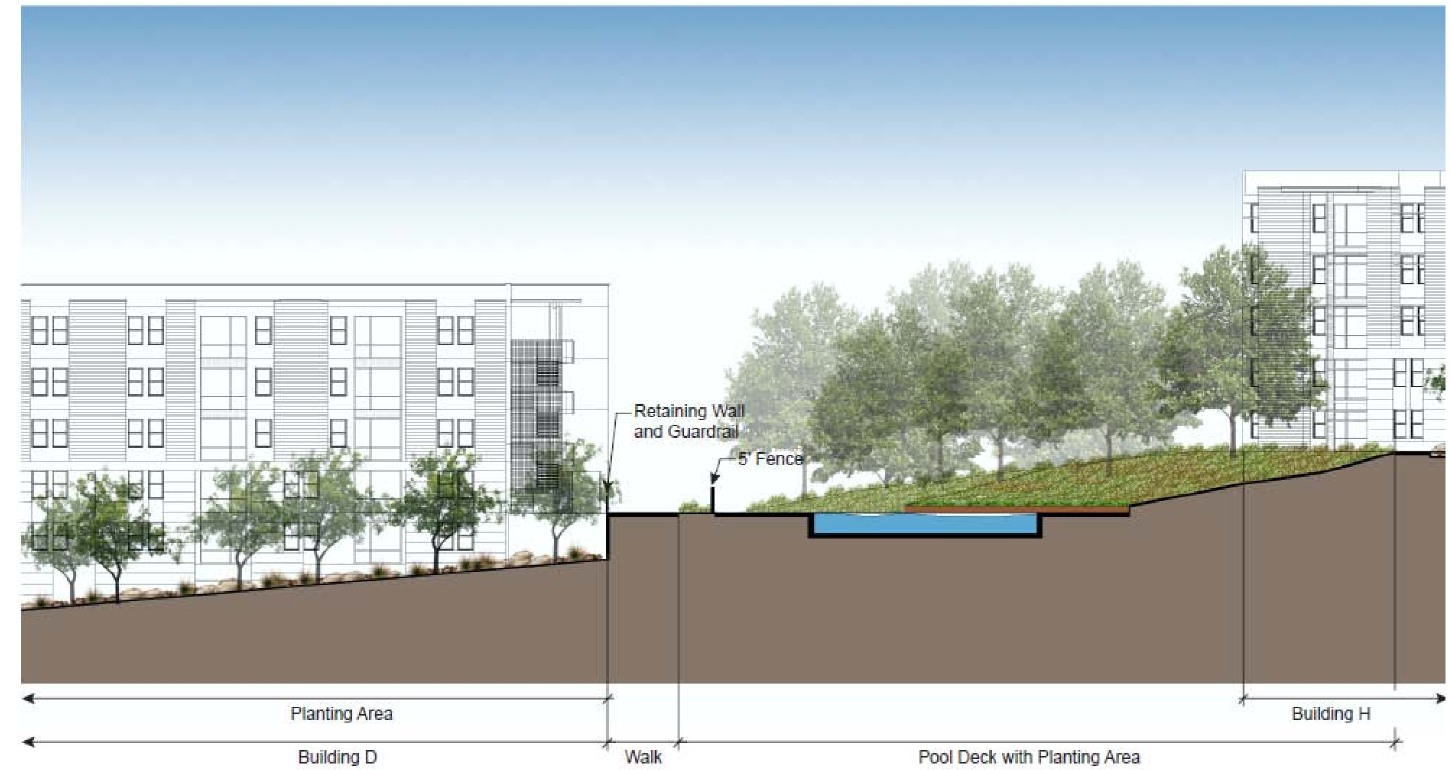


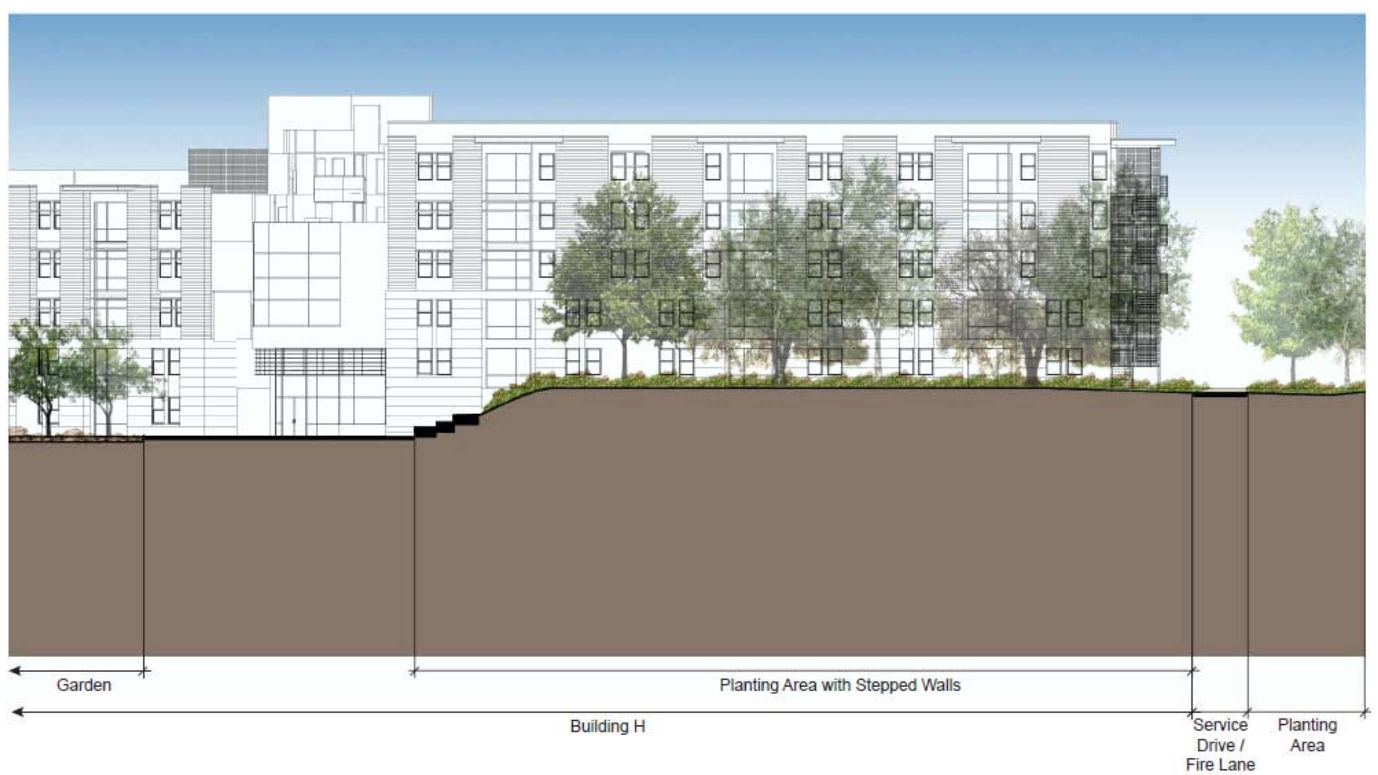
PARKING STRUCTURE - WEST ELEVATION

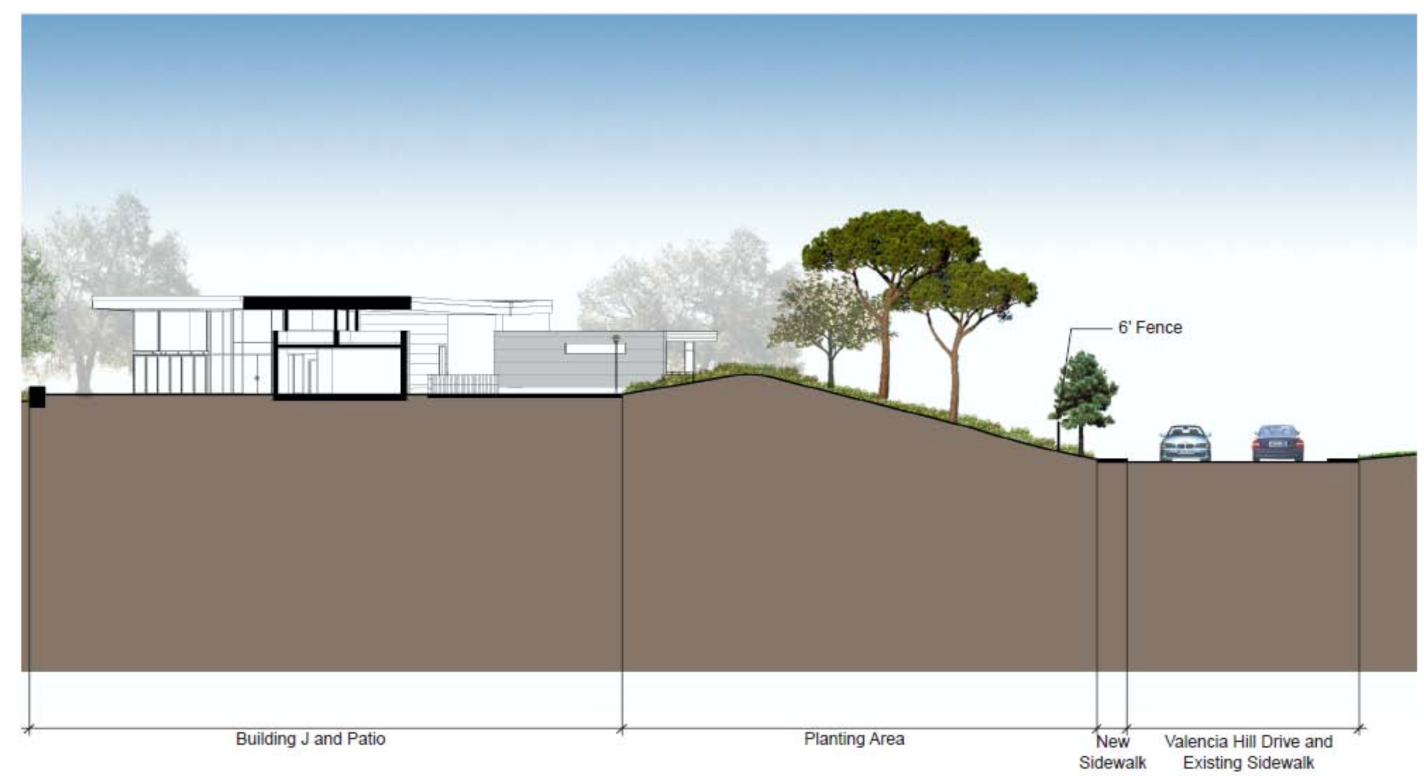


PARKING STRUCTURE - SOUTH ELEVATION

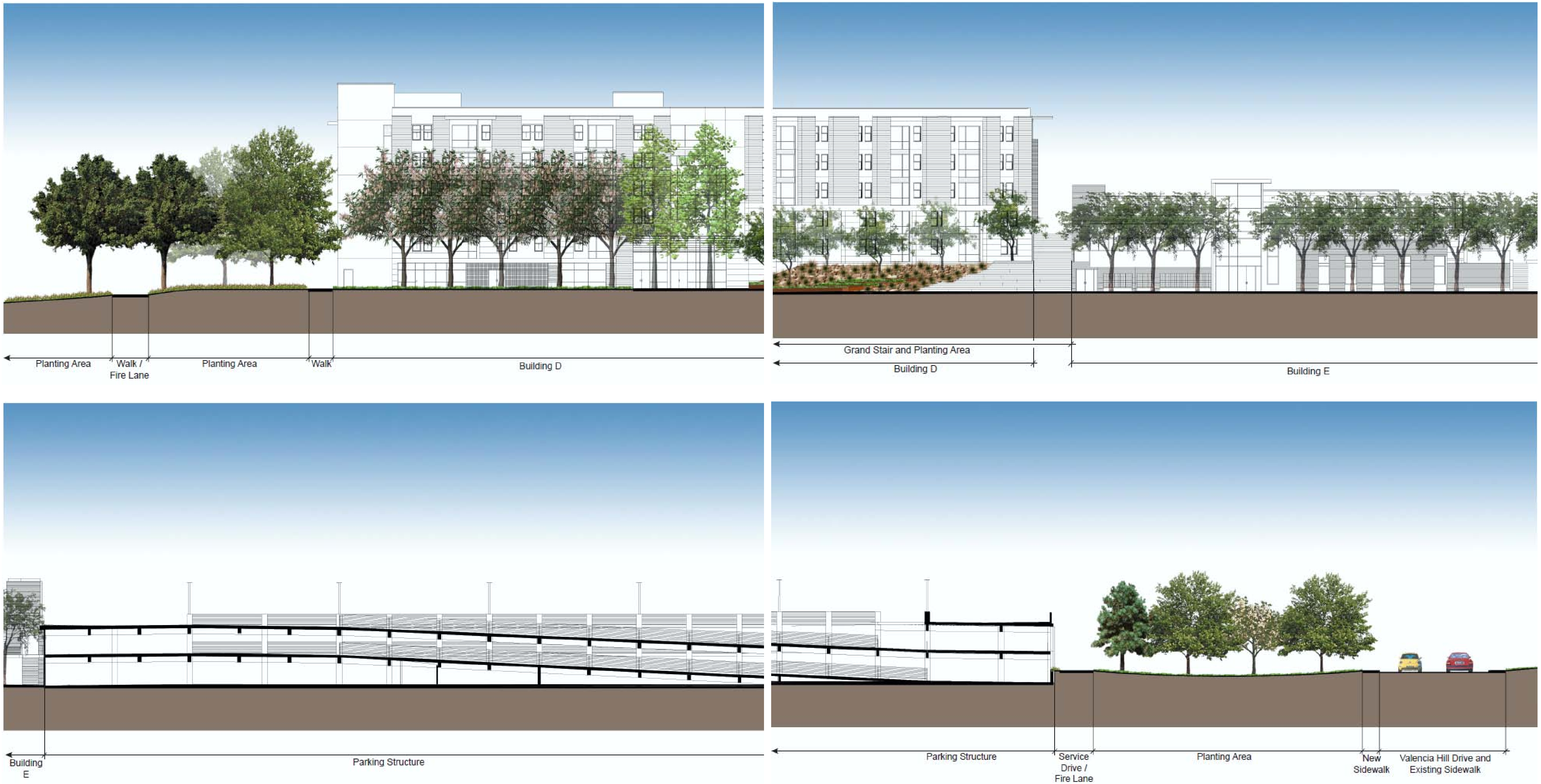
Site Sections



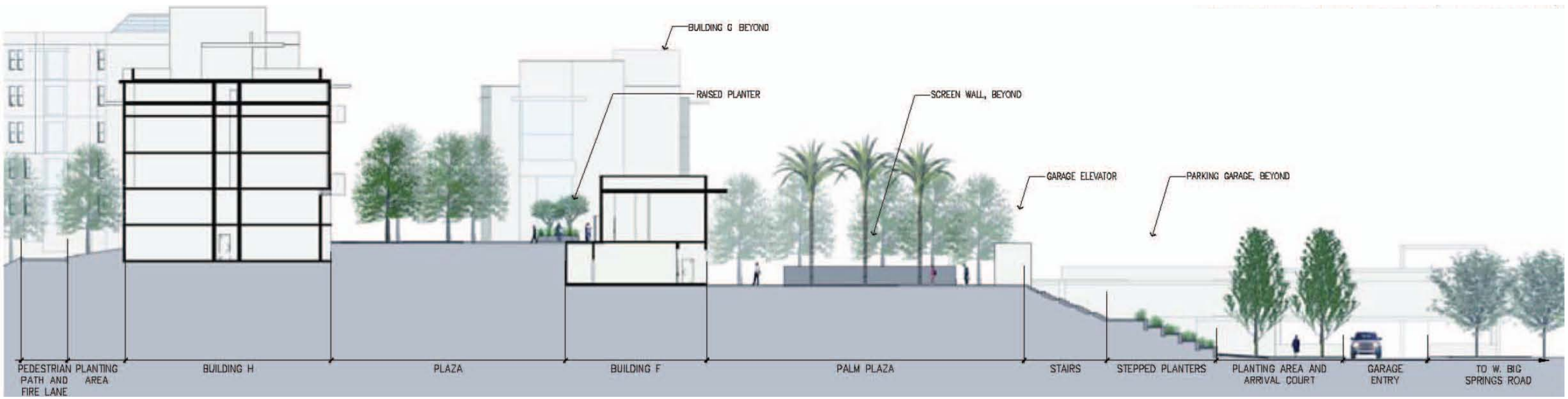




Site Section – Southwest to Northeast through Common Area Terraces

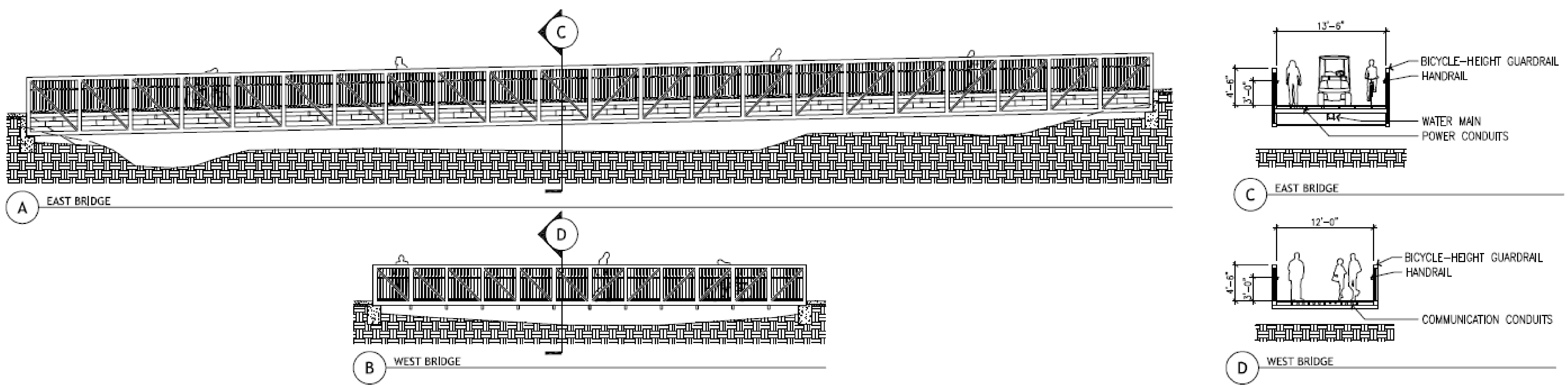


Site Section – West to East through Parking Structure and Lower Terrace



Site Section – North to South through Upper and Lower Terraces

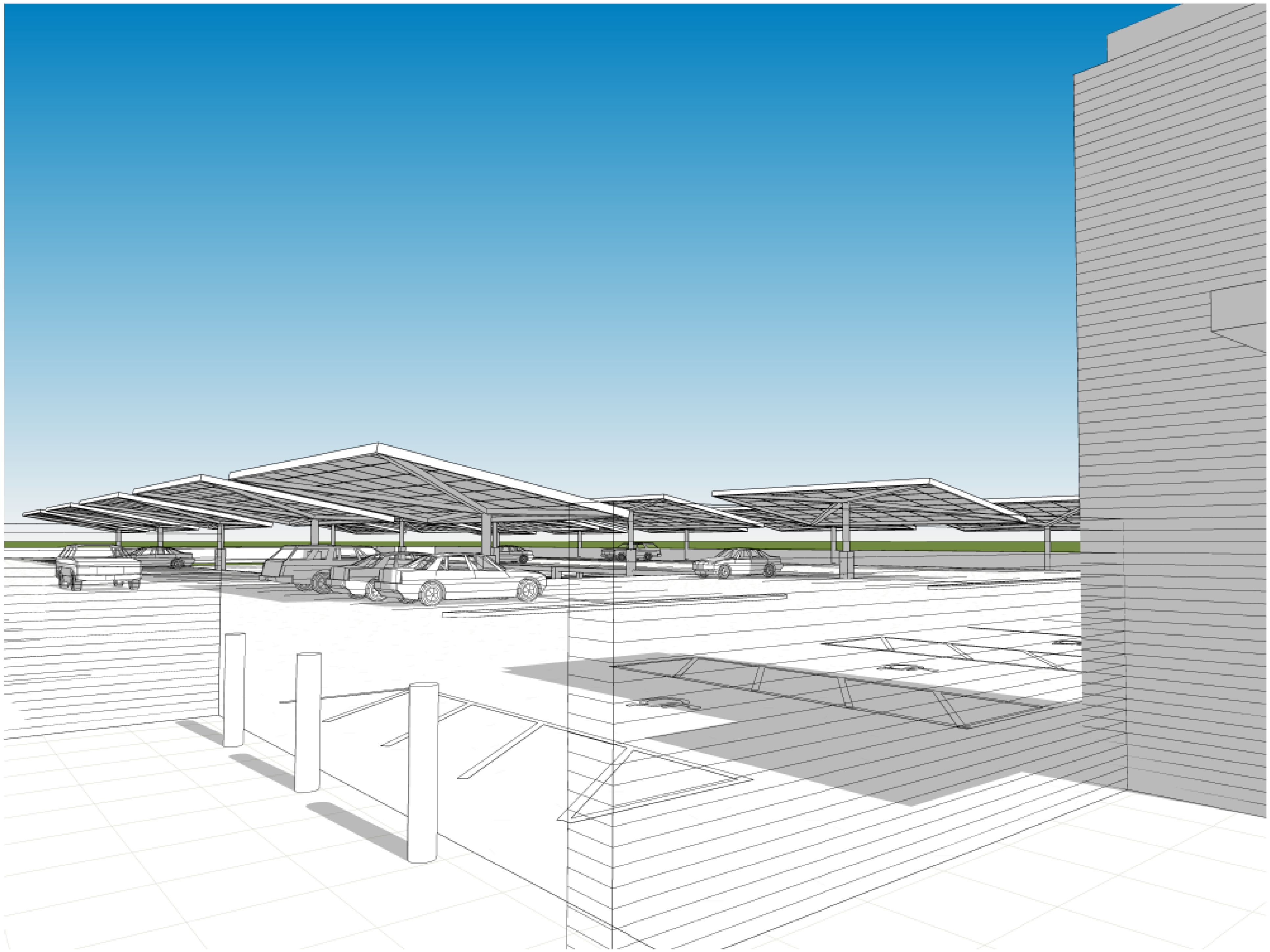
Bridge Details

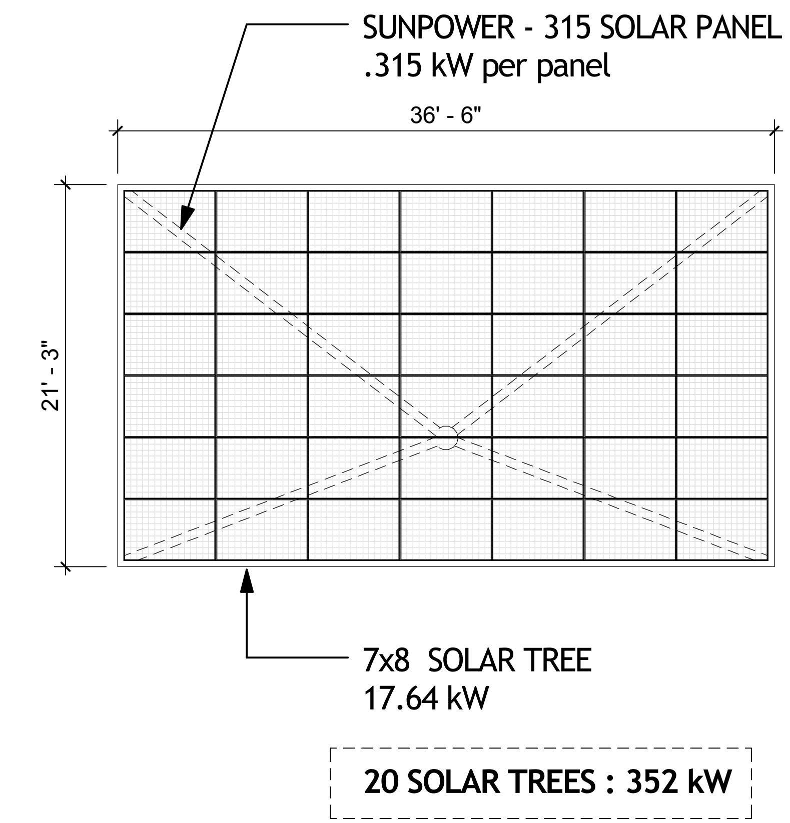


Pedestrian Bridge Details

Appendix C

Illustrations of Parking Structure's Proposed Photovoltaic System



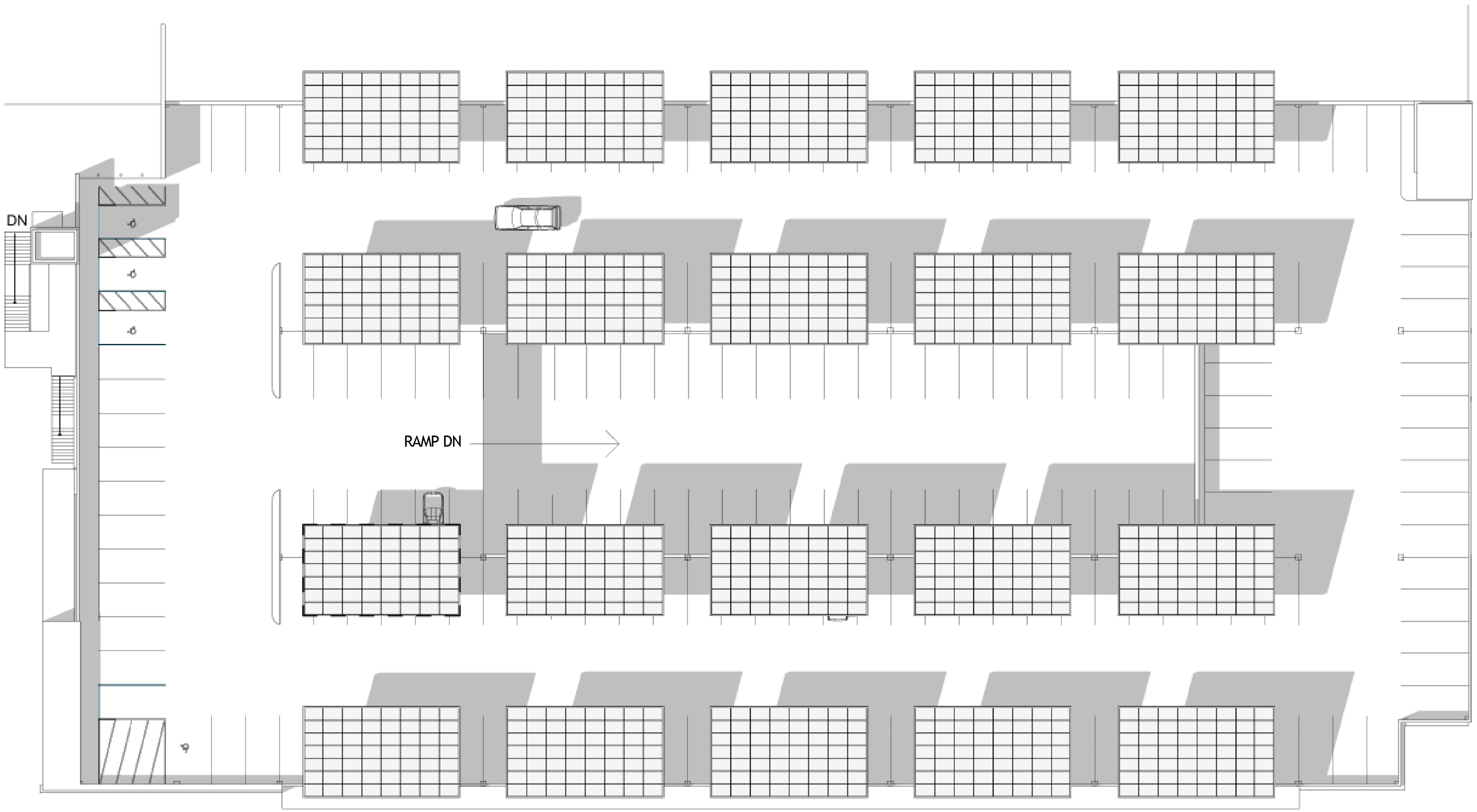


GLEN MOR PARKING GARAGE & PHOTOVOLTAIC ARRAY

VIEW FROM TOP DECK

SASAKI

09-22-2010

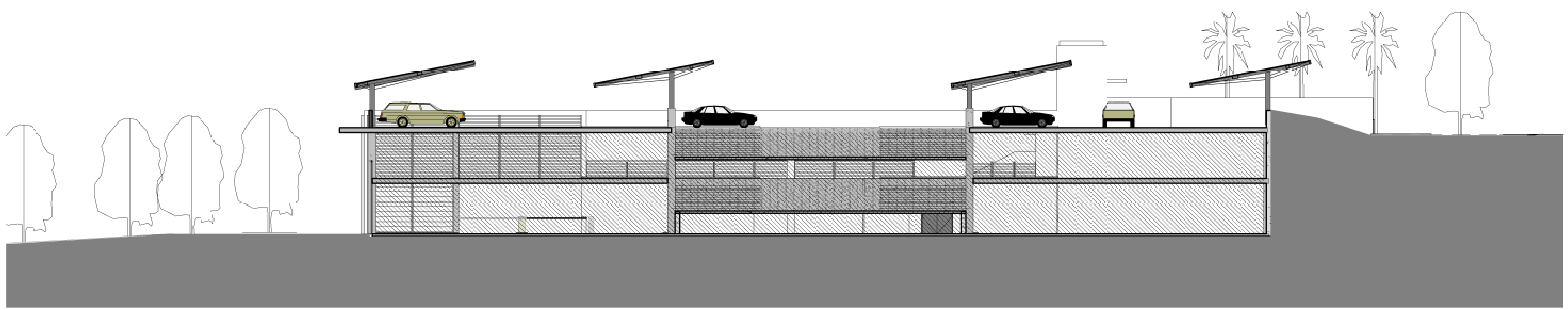


GLEN MOR PARKING GARAGE & PHOTOVOLTAIC ARRAY

THIRD LEVEL PLAN 1"=30'-0"
FALL EQUINOX

SASAKI

09-22-2010



GLEN MOR PARKING GARAGE & PHOTOVOLTAIC ARRAY

SECTION

SASAKI

09-22-2010

Appendix D

Arroyo Planting Program

TABLE 1
SCRUB SEED MIX

SCIENTIFIC NAME	COMMON NAME	PURITY/GERMINATION	BULK APPLICATION RATE (LBS/ACRE)
Artemisia californica	California sagebrush	15/60	2.0
Calandrinia ciliata	Red maids	80/70	0.5
Ceanothus crassifolius	Thick-leaved lilac	98/70	1.0
Clarkia purpurea	Winecup clarkia	90/80	0.5
Croton (=Eremocarpus) setiger	Doveweed	90/40	0.5
Deinandra (= Hemizonia) fasciculata	Fascicled tarweed	20/80	1.0
Dichelostemma capitatum[b]	Blue dicks	90/80	0.5
Encelia farinosa	Desert brittlebush	50/60	1.0
Eriogonum fasciculatum	California buckwheat	50/10	2.0
Eriophyllum confertiflorum	Golden yarrow	30/70	1.0
Heterotheca grandiflora	Telegraph weed	40/50	0.5
Lasthenia gracilis	Coast goldfields	90/85	0.5
Lotus strigosus	Bishop’s lotus	90/70	1.0
Lupinus bicolor	Dove lupine	98/80	1.0
Lupinus truncatus	Collar lupine	98/75	1.0
Malacothamnus fasciculatus	Chaparral mallow	15/60	2.0
Mimulus aurantiacus	Bush monkey-flower	02/60	1.0
Melica imperfecta	Coast range melica	80/60	2.0
Nassella lepida[a]	Foothill needlegrass	90/60	3.0
Nassella cernua[a]	Nodding needlegrass	90/80	3.0
Phacelia ramosissima	Branching phacelia	95/80	1.0
Platystemon californicus	Cream cups	90/20	0.5
Salvia apiana	White sage	70/30	2.0
Salvia mellifera	Black sage	70/30	2.0
Trichostema lanceolatum	Vinegar weed	n/a	0.5
Vulpia microstachys	Small fescue	90/80	3.0
			34.5

[a] Seed of Nassella spp. shall be de-awned.
[b] Hand sown.
Source: ESA 2010.

TABLE 2
SCRUB CONTAINER PLANTS

SCIENTIFIC NAME	COMMON NAME	SIZE	QUANTITY
Artemisia californica	California sagebrush	D-40	125/acre
Encelia farinosa	Desert brittlebrush	D-40	80/acre
Eriophyllum confertiflorum	Golden yarrow	D-40	100/acre
Quercus berberidifolia	Scrub oak	1-gallon	50/acre
Salvia apiana	White sage	D-40	50/acre
Yucca whipplei	Our Lord’s candle	1 gallon	30/acre

[a] Shrubs shall be spaced approximately 10 feet on center.
Source: ESA 2010.

TABLE 3

RIPARIAN CONTAINER PLANTS

SCIENTIFIC NAME	COMMON NAME	SIZE	QUANTITY
Trees			
Platanus racemosa	Western sycamore	5 gallons	30/acre
Populus fremontii	Fremont's cottonwood	5 gallons	30/acre
Shrubs			
Baccharis salicifolia	Mule fat	1 gallon	20/acre
Rhus trilobata	Skunkbrush	1 gallon	20/acre
Rosa californica	Wild rose	D-40	54/acre
Sambucus mexicanus	Mexican (or blue) elderberry	1 gallon	20/acre
Salix lasiolepis	Arroyo willow	1 gallon	20/acre
Groundcovers			
Distichlis spicata	Salt grass	Plugs	250/acre
Leymus condensatus	Giant wild rye	Plugs	250/acre
Muhlenbergia rigens	Deergrass	Plugs or D-40	250/acre

Note: 15' spacing center distance from other container plants (groundcovers excluded from calculation).
Source: ESA 2010.

TABLE 4
INSTALLATION LOCATIONS OF PLANT MATERIALS

	ZONE		
REACH	ARROYO	ARROYO BUFFER	DEVELOPMENT TRANSITION
Reach 1	SSM, SCPP	SSM, SCPP	TBD
Reach 2	SSM, RCPP	SSM, SCPP	TBD
Reach 3	none	SSM, SCPP	TBD
Reach 4	RCPP	SSM, SCPP	TBD

SSM = scrub seed mix (see Table 1);
SCPP = scrub container plant palette (see Table 2);
RCPP = riparian container plant palette (see Table 3);
TBD = to be determined in landscape plans and specs

Appendix E

Construction Equipment Inventory by Phase

Phase	Area	Construction Start	Construction End	Equipment	Soil Export (CY)	Truck Trips per Day
Clear/grub/ demo	Entire construction area	7/1/2011	9/30/2011	(2) blades, (3) scrapers, (1) water tower, (2) front loader, (1) skiploader, (17) dump trucks, (1) water truck	30,000	178 @ 2.6mi each way for a duration of 13 days
Overex/ recompaction	Parking Garage	7/15/2011	8/10/2011	(2) blades, (3) scrapers, (1) water tower, (1) front loader, (1) skiploader, (2) dump trucks, (1) water truck		
Overex/ recompaction	Building	8/11/2011	9/6/2011	(2) blades, (3) scrapers, (1) water tower, (1) front loader, (1) skiploader, (2) dump trucks, (1) water truck		
Construction	Parking Garage	8/11/2011	5/30/2012	(3) forklifts, (5) scissor lifts, (2) cranes, (2) backhoes, (2) bobcats, (2) dump truck, (1) water trucks, (3) delivery trucks		
Misc. Grading	Entire construction area	8/30/2011	12/31/2012	(1) grader, (1) rubber tired dozer, (1) backhoe, (1) water truck		
Trenching	Entire construction area	9/1/2011	3/30/2013	(1) excavator, (2) backhoes, (1) water truck, (1) loader		
Construction	Building	9/10/2011	2/28/2013	(6) forklifts, (8) boom lifts, (2) cranes, (6) plaster hoppers, (2) backhoes, (2) bobcats, (2) dump truck, (1) water trucks, (10) delivery trucks		
Concrete Phase	Entire construction area	9/15/2011	5/30/2013	(4) bobcats, (3) skiploaders, (2) dump truck, (10) concrete trucks, (2) water trucks, (3) backhoes, (3) concrete pumps, (3) cranes, (1) drill rig		
Paving	3 acres	4/1/2013	6/1/2013	(4) ready mix trucks, (2) concrete pumps, (1) paver, (1) roller, (1) loader, (2) dump trucks		

Appendix F

LRDP EIR Mitigation Monitoring and Reporting Program Summary of Applicability and Implementation Status

LRDP EIR Mitigation Monitoring and Reporting Program
Summary of Applicability and Implementation Status
Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
The following information serves as a key to the coding used for the category, responsible unit, mitigation timing, and compliance action:		
Responsible UCR Units AG OPS: Agricultural Operations CPP: Capital & Physical Planning DS: Dining Services EHS: Environmental Health and Safety FS: Fleet Services HSG: Housing Services ODC: Office of Design & Construction PD: Police Department PP: Physical Plant TAPS: Transportation & Parking Services	**Mitigation Timing** P: Implement during programming D: Incorporate into project-specific design E: Implement during environmental documentation (CEQA C**:** Implement during construction of specific projects O: Implement as an ongoing campus practice	
Compliance Action AP: Administrative/Planning Activity CD: Incorporate into construction contract specifications ED: Environmental Documentation FO: Field observation activity/inspections	**Category** AM: Administrative Measure PS: Project Specific SL: Service Level	
PS Land Use (1) Achieve academic core densities of 1.0 FAR or higher on both the East and West Campuses in order to achieve a balance of academic land area versus other required uses. *(Category: AM, PS; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Land Use (2) In order to achieve densities of 1.0 FAR, infill sites in the partially developed East Campus academic core and expand to the West Campus academic zone immediately adjacent to the I 215/SR 60 freeway, maintaining a compact and contiguous academic core. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Land Use (3) Maintain the teaching and research fields on the West Campus south of Martin Luther King Boulevard. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Land Use (4) Pursue a goal of housing 50 percent of student enrollment in on-campus or campus-controlled housing. *(Category: AM; Responsible Unit: CPP,HSG; Timing: P; Compliance: AP)*	Part of Project No further action required	The project would add on-campus housing to help achieve this goal. Based upon Fall 2010 enrollment, addition of the Glen Mor 2 project would increase the on-campus housing inventory to accommodate 30% of the student population (compared to the existing 26%).
PS Land Use (5) Remove existing family housing units on the East Campus, and provide replacement and additional units of family housing on the West Campus. *(Category: AM; Responsible Unit: CPP, HSG; Timing: P; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Land Use (6) Provide expanded athletics and recreational facilities and fields on the East and West Campuses, adjacent to concentrations of student housing. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Land Use (7) Over time, relocate parking from central campus locations to the periphery of the academic core and replace surface parking with structures, where appropriate. *(Category: AM; Responsible Unit: CPP,TAPS; Timing: P; Compliance: AP)*	Part of Project No further action required	The project entails replacing surface parking serving the housing precinct with a parking structure serving the same purposes.
PS Open Space (1*)* Protect the steep and natural hillsides on the southeast campus designated as a Natural Open Space Reserve, to protect wildlife habitat, provide a visual backdrop to the campus, and protect against erosion. *(Category: AM, PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, C, O; Compliance: AP, CD)*	Not Applicable	
PS Open Space (2) Within the Natural Open Space Reserve, no major facilities are allowed (except for sensitively sited utility projects), vehicular and pedestrian access will be limited, and native plant materials will be used, where needed, for erosion, screening, and restoration. *(Category: AM, PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, C, O; Compliance: AP, CD)*	Not Applicable	
PS Open Space (3) In Naturalistic Open Space areas, where arroyos and other natural features exist, preserve wherever feasible, existing landforms, native plant materials, and trees. Where appropriate, restore habitat value. *(Category: AM, PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, C, O; Compliance: AP, CD)*	Part of Project Project-level measures to be implemented	The project has minimized encroachments into the Great Glen Arroyo and includes a program to restore and enhance habitat value. Project-level Mitigation Measures BIO 3 through BIO 7 provide for implementation of this measure in project design and construction.
PS Open Space (4) Provide landscaped buffers and setbacks along campus edges, such as Valencia Hill Drive and its extension south of Big Springs Road, Martin Luther King Boulevard, and the I 215/SR 60 freeway. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Part of Project No further action required	The project design provides a minimum landscaped setback of 100 feet along Valencia Hill Drive.

LRDP EIR Mitigation Monitoring and Reporting Program

Summary of Applicability and Implementation Status

Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Open Space (5) Retain the Carillon Mall as a major Campus Landmark Open Space, respecting its existing dominant width of approximately 200 feet throughout its length. Other named malls and walks will be 100 feet wide. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Open Space (6) Provide a new Campus Landmark Open Space on the West Campus, The Grove, to reflect the campus citrus heritage and provide a gathering/activity space. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Open Space (7) Provide neighborhood parks and tot lots in the family housing areas as neighborhood open space. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Campus & Community (1) Provide sensitive land use transitions and landscaped buffers where residential off-campus neighborhoods might experience noise or light from UCR activities. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Part of Project No further action required	The project maintains a 100-foot landscaped setback along Valencia Hill Drive. Site layout, grading, and building design provide a sensitive land use transition. See EIR Section 3.9, Impacts 3.9-2 and 3.9-3.
PS Campus & Community (2) Encourage a "permeable" edge with the community where interaction is desirable, especially along University Avenue and in areas where a high proportion of students live in close proximity to the campus. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Campus & Community (3) Discourage vehicular traffic originating off campus from moving through the campus as a short cut. *(Category: AM, SL; Responsible Unit: CPP, TAPS; Timing: P, O; Compliance: AP)*	Not Applicable	
PS Campus & Community (4) Provide strong connections within the campus and its edges to promote walking, bicycling, and transit use, rather than vehicular traffic. *(Category: AM, SL; Responsible Unit: CPP, TAPS; Timing: P; Compliance: AP)*	Part of Project No further action required	The project features improvements within the proposed student housing development to promote walking and bicycling. The project also includes sidewalk at the campus edge on Valencia Hill Drive.
PS Campus & Community (5) Continue to improve campus signage and wayfinding to provide easy access for visitors and to discourage impacts in neighboring residential areas. *(Category: AM, PS, SL; Responsible Unit: CPP, ODC, PP, TAPS; Timing: P, D, C, O; Compliance: AP, CD)*	Part of Project Implement in detailed design and construction	Design and location of signage to be addressed in construction plans and specifications.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Campus & Community (6) Locate public-oriented uses, such as performance facilities, galleries and major sports venues, where they can easily be accessed and where they can contribute to the vitality and economic health of businesses along University Avenue. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Campus & Community (7) Work cooperatively with the City of Riverside to effect the redevelopment of University Avenue between the campus and Chicago Avenue as a high intensity mixed use district, with an abundance of campus/community service businesses and uses. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Not Applicable	
PS Campus & Community (8) Encourage the City to explore the opportunity for student housing in a mixed use configuration along University Avenue. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (9) Strongly encourage private developers to provide a variety of housing types that target both current and future needs of the overall community and the campus. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (10) Use City/UCR/RCC enhancement of Downtown cultural arts and entertainment resources and the campus need for off-campus housing as the foundation of revitalization program. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (11) Support the City in their coordination of Block Grant Redevelopment set-aside and other funds for the upgrading of Neighborhood Reinvestment Areas adjacent to University Avenue. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (12) Support the City in creating design guidelines for community, student, faculty, staff, and visitor housing along University Avenue that has a friendly street presence. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (13) Support the City in amending the Eastside Community Plan to update housing strategies and action plans for rehabilitation of existing housing stock and new construction. This should be done in conjunction with modification of the University Avenue Specific Plan. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Campus & Community (14) Support the City in creating a "town/gown square" at the southwest corner of the intersection of University and Chicago Avenues to provide retail and services for the community and campus. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (15) Support the City in developing design guidelines for mixed use housing and retail along University Avenue. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (16) Partner with the City to create a Riverside/UCR Entrepreneurial Program at the "town/gown square" related to minority business opportunities in the University Avenue and Hunter Business Park areas. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (17) Work with the City to link the open spaces of UCR, University Avenue, the Marketplace, and the Downtown with enhanced streetscape treatments for University to Market and from Market to Santa Fe Street along Mission Inn Avenue/7th Street. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (18) Work with the City to link the open spaces of UCR with the Citywide Trail Network. *(Category: AM; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (19) Work with the City to develop streetscape concepts with banners, lighting, street furniture, and public art that celebrates the linkages between the University and Downtown. Banners should highlight cultural and artistic events in Downtown and UCR when appropriate. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (20) Work with the City to evaluate the conversion of University Avenue from Iowa Avenue to the I-215/SR-60 freeway from an auto emphasis street to a biking, pedestrian, transit street with localized auto access. Consider Martin Luther King Boulevard/14th Street and Blaine/3rd Street as primary freeway connection streets. *(Category: AM; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Campus & Community (21) Work with the City to emphasize University Avenue as the link between the UCR campus and Downtown rather than as the link to the freeways. *(Category: AM; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	
PS Campus & Community (22) Work with the City to encourage bicycle and pedestrian use and safety, including minimizing the number of curb cuts for residential and retail improvements along University Avenue to Chicago Avenue and then to the Downtown. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Part of Project No further action required	The project would maintain bicycle lanes along the project-frontage segment of Big Springs Road, and would construct a sidewalk along the western side of Valencia Hill Drive.
PS Transportation (1) Develop an integrated multi-modal transportation plan to encourage walking, biking, and transit use. *(Category: AM, SL; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	
PS Transportation (2) Expand shuttle or tram service connecting major parking lots and campus destinations, and linking the East and West Campuses. Coordinate this system with RTA routes and schedules. *(Category: SL; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	
PS Transportation (3) Provide a continuous network of bicycle lanes and paths throughout the campus, connecting to off-campus bicycle routes. *(Category: AM; Responsible Unit: CPP, TAPS; Timing: P, O; Compliance: AP)*	Part of Project No further action required	The project would maintain bicycle lanes along the project-frontage segment of Big Springs Road and would construct a sidewalk along the west side of Valencia Hill Drive. New paths for pedestrian and bicycle use are included throughout the site, connecting the various housing projects in the precinct.
PS Transportation (4) Over time, limit general vehicular circulation in the central campus, but allow transit, service, and emergency vehicle access, and provide access for persons with mobility impairments. *(Category: AM, SL; Responsible Unit: CPP, TAPS; Timing: P, O; Compliance: AP)*	Not Applicable	
PS Transportation (5) Provide bicycle parking at convenient locations. *(Category: PS, SL; Responsible Unit: CPP, ODC, TAPS; Timing: P, D, O; Compliance: AP, CD)*	Part of Project No further action required	The project would provide bicycle parking at several locations throughout the site (Residential Building D, Food Emporium, Resident Services, pool, parking structure).

LRDP EIR Mitigation Monitoring and Reporting Program
Summary of Applicability and Implementation Status
Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Transportation (6) Implement parking management measures that may include: ■ Restricted permit availability ■ Restricted permit mobility ■ Differential permit pricing *(Category: AM; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Part of Project Ongoing Monitoring of project-level measure	Project-level Mitigation Measure TR 4 establishes a program to document a balance between housing occupancy and parking supply, including restriction of issuance of the number of parking permits to the available supply.
PS Conservation (1) Protect natural resources, including native habitat; remnant arroyos; and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible. *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, D, E, C, O; Compliance: AP, CD)*	Part of Project Project-level measures to be implemented during design and construction	The project minimizes encroachments into the Great Glen Arroyo and preserves a specimen oak tree near the west project driveway. Project-level Mitigation Measures BIO 3, BIO 5 and BIO 6 provide for minimization and avoidance measures during construction.
PS Conservation (2) Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible. *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, D, E, C, O; Compliance: AP, CD)*	Part of Project Ongoing monitoring of LRDP measure through detailed design Project-level measures to be implemented during construction	The project structures are located so as to minimize arroyo disturbance; the project features stormwater drainage improvements to minimize erosion and sedimentation; the project preserves trees within the arroyo and along the Big Springs Road and Valencia Hill Drive frontages. Project-level Mitigation Measures BIO 3, BIO 5 and BIO 6 provide for minimization and avoidance measures during construction.
PS Conservation (3) Continue with the increase in building densities on campus, particularly in academic zones, in order to preserve open space and conserve limited land resources and the agricultural fields. *(Category: AM; Responsible Unit: CPP; Timing: P; Compliance: AP)*	Part of Project No further action required	The project has been designed to preserve the Great Glen Arroyo.
PS Conservation (4) Preserve historic buildings to the extent feasible. *(Category: PS; Responsible Unit: CPP, ODC; Timing: D, E, O; Compliance: CD)*	Not Applicable	

LRDP EIR Mitigation Monitoring and Reporting Program
Summary of Applicability and Implementation Status
Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PS Conservation (5) Continue to adhere to the conservation requirements of Title 24 of the California Code of Regulations and comply with any future conservation goals or programs enacted by the University of California *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E, O; Compliance: CD)*	Part of Project Ongoing oversight through detailed design and construction	The project incorporates sustainable design strategies, with a target of LEED Gold certification.
PS Development Strategy (1) Establish a design review process to provide regular review of building and landscape development on campus. *(Category: AM; Responsible Unit: CPP, ODC; Timing: O; Compliance: AP)*	Not Applicable	
PS Development Strategy (2) Review and update, as needed the Campus Design Guidelines and the Campus Landscape Design Guidelines[1] to ensure conformity with LRDP Planning Strategies. *(Category: AM; Responsible Unit: CPP, ODC; Timing: O; Compliance: AP)*	Not Applicable	
PS Development Strategy (3) Review other plans that may be prepared, such as district, sub-area plans, or transportation plans, for conformity with the goals and design intent of the 2005 LRDP. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Not Applicable	
AESTHETICS		
PP 4.1-1 The campus shall provide design architects with the Campus Design Guidelines and instructions to implement the guidelines, including those sections related to use of consistent scale and massing, compatible architectural style, complementary color palette, preservation of existing site features, and appropriate site and exterior lighting design. (This is identical to Land Use PP 4.9-1(a).) *(Category: PS; Responsible Unit: CPP, ODC; Timing: P, D; Compliance: AP)*	Part of Project No further action required	The campus has provided the indicated guidelines and instructions to the design team.
PP 4.1-2(a) The campus shall continue to provide design architects with the Campus Landscape Master Plan[2] and instructions to develop project-specific landscape plans that are consistent with the Master Plan with respect to the selection of plants, retention of existing trees, and use of water conserving plants, where feasible. (This is identical to Land Use PP 4.9-1(b).) *(Category: PS; Responsible Unit: CPP, ODC; Timing: P, D; Compliance: AP)*	Part of Project No further action required	The campus has provided the indicated guidelines and instructions to the design team.

[1] The Campus Design Guidelines were updated in 2007 in a single document that incorporates both general design and landscape design provisions.
[2] The Landscape Master Plan has since been incorporated as an element of the Campus Design Guidelines

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.1-2(b) The campus shall continue to relocate, where feasible, mature "specimen" trees that would be removed as a result of construction activities on the campus. (This is identical to Land Use PP 4.9-1(c).) *(Category: AM, PS; Responsible Unit: ODC, PP; Timing: P, D, E, O; Compliance: AP, CD)*	Not Applicable	
PP 4.1-2(c) To reduce impacts to the Natural Open Space Reserve area: (i) If any construction is proposed within the Open Space Reserve, conduct surveys for threatened and endangered species at an appropriate time of year. If these species are located in this area, the site or sites shall be protected from damage by either protective fencing or some other means of restricting access. (ii) Landscaping around development areas adjacent to the Open Space Reserve shall emphasize native or historically significant plant material that provide wildlife value and a sensitive transition from developed areas to natural open spaces. A qualified native landscape specialist shall be retained to develop an appropriate native landscape plan for the development areas. *(This is identical to Biological Resources PP 4.4-1(a) and Hydrology PP 4.8-3(a).)* *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E, C, O; Compliance: ED)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.1-2(d) To reduce disturbance of Natural and Naturalistic Open Space areas: (i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists. (ii) Removal of native shrub or brush shall be avoided, except where necessary. (iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access. (iv) Excess fill or construction waste shall not be dumped in washes. (v) Vehicles or other equipment shall not be parked in washes or other drainages. (vi) Overwatering shall be avoided in washes and other drainages. (vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc. *(This is identical to Biological Resources PP 4.4-1(b) and Hydrology 4.8-3(b).)* *(Category: AM, PS; Responsible Unit: AG OPS, HSG, ODC, PP, TAPS; Timing: D, E, C, O; Compliance: AP, CD, FO)*	Part of Project Project-level measures to be implemented during construction	Project-level mitigation measure BIO 3 provides for identification of disturbance limits prior to start of construction; measure BIO 5 requires a worker education program to ensure compliance with these best management practices; project-level mitigation measure BIO 6 incorporates biological monitoring during construction to further ensure compliance with these measures. Implementation of item (iii) shall include a limit on construction activity within the streambed of the Great Glen Arroyo when water is flowing
MM 4.1-3(a) Building materials shall be reviewed and approved as part of project-specific design and through approval of construction documents. Mirrored, reflective glass is prohibited on campus. *(Category: PS; Responsible Unit: ODC; Timing: D; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	The project has been and will continue to be subject to the campus's design review process. Project design does not include mirrored or reflective glass.
MM 4.1-3(b) All outdoor lighting on campus resulting from new development shall be directed to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) to prevent stray light spillover onto adjacent residential areas. In addition, all fixtures on elevated light standards in parking lots, parking structures, and athletic fields shall be shielded to reduce glare. Lighting plans shall be reviewed and approved prior to project-specific design and construction document approval. *(Category: PS; Responsible Unit: ODC, PP, TAPS; Timing: D, O; Compliance: AP, CD)*	Part of Project Ongoing oversight through design and construction	The project lighting design has been an element of the campus design review process. Photometric plans for the parking structure lighting (Draft EIR Appendix G) demonstrate compliance with these design standards.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.1-3(c) Ingress and egress from new parking areas shall be designed and situated so as to minimize the impact of vehicular headlights on adjacent uses. Walls, landscaping or other light barriers will be provided. Site plans shall be reviewed and approved as part of project-specific design and construction document approval. *(Category: PS; Responsible Unit: ODC, TAPS; Timing: D, O; Compliance: AP, CD)*	Part of Project Ongoing oversight through design and construction	The parking structure design includes components on each level to block light from headlights. The extended landscape buffer adjacent to Valencia Hill Drive and Big Springs Road will also serve as a barrier between the parking structure and off-campus residents.
AIR QUALITY		
PP 4.3-1 The campus shall continue to implement a Transportation Systems Management (TSM) program that meets or exceeds all trip reduction and Average Vehicle Riders requirements of the South Coast Air Quality Management District (SCAQMD). The TSM program may be subject to modification as new technologies are developed or alternate program elements are found to be more effective. *(This is identical to Traffic and Transportation PP 4.14-1.)* *(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	
PP 4.3-2(a) Construction contract specifications shall include the following: (i) Compliance with all SCAQMD rules and regulations (ii) Maintenance programs to assure vehicles remain in good operating condition (iii) Avoid unnecessary idling of construction vehicles and equipment (iv) Use of alternative fuel construction vehicles (v) Provision of electrical power to the site, to eliminate the need for on-site generators *(Category: PS; Responsible Unit: ODC, PP; Timing: C, O; Compliance: CD, FO)*	Part of Project Ongoing oversight through design and construction Project-level measures to be implemented during construction	These requirements must be incorporated into campus construction specifications and implemented during construction. Project-level mitigation measures AQ 1 and AQ 2 establish additional requirements to reduce construction-period emissions.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.3-2(b) The campus shall continue to implement dust control measures consistent with South Coast Air Quality Management District (SCAQMD) Rule 403—Fugitive Dust during the construction phases of new project development. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the source of the dust generation. The Campus shall implement these measures as necessary to reduce fugitive dust. Individual measures shall be specified in construction documents and require implementation by construction contractor: (i) Apply water and/or approved non-toxic chemical soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days) (ii) Replace ground cover in disturbed areas as quickly as possible (iii) Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content (iv) Water active grading sites at least twice daily (v) Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period (vi) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum (vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code (vii) Sweep streets at the end of the day if visible soil material is carried over to adjacent roads (viii) Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip (ix) Apply water three times daily or chemical soil stabilizers according to manufacturers' specifications to all unpaved parking or staging areas or unpaved road surfaces (x) Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads *(This is identical to Geology PP 4.6-2(a) and Hydrology PP 4.8-3(c).)* *(Category: AM, PS, SL; Responsible Unit: ODC; Timing: C, O; Compliance: AP, CD, FO)*	Part of Project Ongoing oversight through design and construction	These measures must be incorporated into project construction specifications and implemented during construction.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.3-2(c) The campus shall continue to implement SCAQMD Rule 1403—Asbestos when demolishing existing buildings on the campus. *(Category: PS; Responsible Unit: EHS, ODC, PP; Timing: D, E, C, O; Compliance: CD, FO)*	Part of Project Ongoing oversight through design and demolition phase of construction	The project includes a detailed asbestos management plan for demolition of the on-site residence that will ensure compliance with this measure.
MM 4.3-2 Programs and Practices 4.3-2(a), (b), and (c), or their equivalent, shall be included in construction contract specifications. The contract specifications shall require the use of low NOx diesel fuel and construction equipment to the extent that it is readily available at the time of development. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, C; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	These measures must be incorporated into project construction specifications.
MM 4.3-3 To reduce energy consumption and areawide emission of criteria pollutants, the campus shall annually inspect and enforce an emissions reduction control strategy, which may include, where feasible, the following: **<u>Design</u>**		
■ Use light-colored roof materials to reduce heat gain *(Category: PS; Responsible Unit: ODC, PP; Timing: D; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	Project designed to achieve LEED Credit 7.2 for Heat Island Effect-Roof (from 95% Schematic Design Narrative)
■ Orient buildings to the north and include passive solar design features *(Category: PS; Responsible Unit: CPP, HSG, ODC, PP; Timing: P, D, C; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	Exterior treatments and interior building space configuration has been designed for optimal passive solar response (layered exterior walls, overhangs, non-habitable spaces at exterior walls) (from 95% Schematic Design Narrative)
■ Increase building and attic insulation beyond Title 24 requirements *(Category: PS; Responsible Unit: ODC, PP; Timing: D; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	Design is based upon 20% margin over Title 24 requirements (from 95% Schematic Design Narrative)

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
■ Provide electric vehicle charging systems at convenient location in campus parking facilities*(Category: PS; Responsible Unit: TAPS, PP; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	
■ Provide prominent website and/or kiosks displaying information about alternative transportation programs *(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Install electrical outlets outside buildings for the use of electric landscape maintenance equipment *(Category: PS; Responsible Unit: ODC, PP; Timing: D, O; Compliance: AP,CD)*	Part of Project Ongoing oversight through design and construction	This is a campus design standard that will be implemented as detailed construction plans are prepared.
Operation ■ Implement a subsidized vanpool program *(Category: AM; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	.
■ Implement staggered or compressed work schedules to reduce vehicular traffic *(Category: AM; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Use alternative fuel shuttle buses to reduce intra-campus vehicle trips *(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Provide shuttle service to major off-campus activity centers and Metrolink station(s) *(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Aggressive expansion of the campus TDM program to achieve an AVR of 1.5*(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Expand transit subsidies to encourage use of public transit *(Category: AM; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Implement incentives for telecommuting *(Category: AM; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Not Applicable	
■ Convert campus fleet to low emission, alternative fuel, and electric vehicles over time *(Category: AM; Responsible Unit: FS, PP, TAPS; Timing: O; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
■ Implement solar or low-emission water heaters *(Category: AM, PS; Responsible Unit: HSG, ODC, PP; Timing: P, D, C, O; Compliance: AP, CD)*	Part of Project Ongoing oversight through design and construction	The proposed design includes a solar system for domestic hot water pre-heating for the residential buildings.
■ Implement an educational program for faculty and staff and distribute information to students and visitors about air pollution problems and solutions*(Category: AM; Responsible Unit: EHS, TAPS; Timing: O; Compliance: AP)*	Not Applicable	
BIOLOGICAL RESOURCES		
PP 4.4-1(a) Reduce impacts to the Natural Open Space Reserve area: See PP4.1-2(c)	Not Applicable	
PP 4.4-1(b) Reduce disturbance of Natural and Naturalistic Open Space areas: See PP 4.1-2(d)	See PP 4.1-2(d)	See PP 4.1-2(d).
PP 4.4-2(a) Impacts to riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the ACOE and CDFG through the State and federal permit process. The permit shall mitigate the habitats such that they are consistent with the Clean Water Act and CDFG policy of "no net loss" of wetland. Furthermore, impacted wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat. *(Category: AM, PS; Responsible Unit: ODC, PP; Timing: P, D, E, C, O; Compliance: AP, CD, FO)*	Part of Project Project-level measures to be implemented during design and construction	The project entails minor impacts on riparian habitat and stream resources that are subject to Clean Water Act Section 404 and California Fish and Game Code Section 1602. Project-level mitigation measure BIO 3 specifies measures to minimize impacts on these resources during construction. Project-level mitigation measure BIO 4 provides for detailed implementation of the Arroyo Enhancement Program and compensation for project impacts to riparian and jurisdictional resources. The project will be subject to an ACOE 404 authorization and a CDFG Streambed Alteration Agreement.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.4-2(b) In compliance with NPDES, the campus would continue to implement Best Management Practices, as identified in the UCR Stormwater Management Plan (UCR 2003): (i) Public education and outreach on stormwater impacts (ii) Public involvement/participation (iii) Illicit discharge detection and elimination (iv) Pollution prevention/good housekeeping for facilities (v) Construction site stormwater runoff control (vi) Post-construction stormwater management in new development and redevelopment *(This is identical to Geology and Soils PP 4.6-2(b) and Hydrology PP 4.8-3(d).)* *(Category: AM, PS, SL; Responsible Unit: DS, EHS, HSG, ODC, PP; Timing: C, O; Compliance: AP, CD, FO)*	Part of Project Ongoing oversight through design, construction and campus Storm Water Management program	A preliminary SWPPP has been prepared for the project that incorporates project-level construction BMPs. A final plan will be prepared and a Notice of Intent will be filed under the State General Construction Permit in accordance with applicable regulations and standard campus practice. The project has been designed to incorporate post-construction stormwater management controls, including a modular wetland for treatment of discharges to the arroyo. The majority of the site discharges to the existing University Arroyo Flood Control and Enhancement program which provides treatment of campus runoff in a network of surface channels and basins.
MM 4.4-1(a) To ensure that potential impacts to special status plant and wildlife species that are known to occur within the Natural and Naturalistic areas of the campus or have a moderate or greater potential to occur (refer to Tables 4.4-1 and 4.4-2) are reduced to less than significant levels, the campus shall conduct surveys for special-status species prior to disturbance of areas or habitat that are known to support the species. The University shall conduct surveys of the area(s) in accordance with applicable protocols or guidelines developed by the CDFG and/or USFWS, as applicable. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E, C, O; Compliance: ED)*	Part of Project Project-level measures to be implemented prior to start of construction	Protocol surveys for burrowing owl were conducted and burrowing owls were determined to be absent at the time of the survey. Project-level mitigation measure BIO 1 requires pre-construction surveys for burrowing owls and establishes avoidance measures to be implemented if burrowing owls are detected in future pre-construction surveys. There are no other special-status species with moderate or greater potential to occur on the site.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.4-1(b) If surveys determine that special-status plant or animal species are present, the following measures shall be implemented: (i) Vegetation: If sensitive plant species or habitats are observed and would be impacted by project-related activities, a qualified botanist shall develop a species or habitats-specific replacement plan. This plan shall include elements to limit project impacts such as the relocation of individual specimens, the collection of seeds and replanting, or the preservation and movement of topsoil that contains the seed bank. If replacement within the project area is not feasible, then an approved mitigation bank shall be used. For either case, on-site or off-site revegetation, a mitigation monitoring plan shall be prepared and approved by the CDFG prior to start of construction. (ii) Wildlife: If special status wildlife is found within areas of proposed construction and avoidance is not feasible, the campus will consult with the appropriate agencies, obtain any necessary State or federal permits, and prepare a mitigation plan for those special-status species that would be impacted. The mitigation plan would be subject to the approval of applicable State and/or federal agencies, and may include measures such as the relocation of the affected species, protection of other on-campus habitat where the plant or animal is known to occur, or site preparation and revegetation to create suitable habitat. *(Category: PS; Responsible Unit: ODC, PP; Timing: E; Compliance: ED)*	Part of Project Project-level measures to be implemented prior to start of construction	Project-level mitigation measure BIO 1 establishes avoidance measures to be implemented if burrowing owls are detected in future pre-construction surveys. No other special-status species are reasonably expected to occur on the site.
MM 4.4-3(a) When habitat that could be regulated by the Clean Water Act (Section 404) would be impacted, either directly or indirectly, the University shall perform a jurisdictional and/or wetland delineation to assess the extent of the jurisdictional area(s). *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E; Compliance: ED)*	Completed	A wetland delineation has been conducted (Draft EIR Appendix I)
MM 4.4-3(b) If wetland or riparian habitat would be removed as a result of project development, the University shall restore or enhance wetland or riparian habitat as required by the applicable State and/or federal resource agencies. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E; Compliance: ED)*	Part of Project Project-level measures to be implemented prior to, and during, construction	The project entails an arroyo enhancement program that will restore/enhance 1.5 acres of riparian habitat, which will offset the project's temporary and permanent impacts. The project will be subject to an ACOE 404 authorization and a CDFG Streambed Alteration Agreement.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.4-3(c) Any proposal for wetland creation or enhancement (pursuant to MM 4.4-3(b) above) will be based upon the completion of soils, hydrologic and other studies confirming the feasibility of the creation or enhancement proposal and shall include United States Army Corps of Engineers (USACE)–approved measures intended to promote occupancy by special status and other wetland-dependent species (e.g., plantings, collection of topsoil and inoculation of target areas). *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E; Compliance: ED)*	Not Applicable	The project site does not include wetlands and does not propose wetland creation or enhancement.
MM 4.4-4(a) Prior to the onset of construction activities that would result in the removal of mature trees that would occur between March and mid-August, surveys for nesting special status avian species and raptors shall be conducted on the affected portion of the campus following USFWS and/or CDFG guidelines. If no active avian nests are identified on or within 250 feet of the construction site, no further mitigation is necessary. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E, C; Compliance: ED)*	Part of Project Project-level measures to be implemented prior to construction	Project-level mitigation measure BIO 2 requires pre-construction nesting bird surveys.
MM 4.4-4(b) If active nests for avian species of concern or raptor nests are found within the construction footprint or a 250-foot buffer zone, exterior construction activities shall be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation have been developed and implemented in consultation with USFWS and CDFG. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E, C; Compliance: CD)*	Part of Project Project-level measures to be implemented prior to construction	Project-level mitigation measure BIO 2 requires avoidance of active nests and definition of an appropriate avoidance buffer to be respected until a nest is no longer active and the young are not dependent on the nest.
CULTURAL RESOURCES		
PP 4.5-2 If any project is proposed that would require or result in the relocation or demolition of a historic structure, the campus shall prepare a project-specific CEQA analysis, pursuant to Section 15064.5 et seq. of the CEQA Guidelines. *(Category: PS; Responsible Unit: ODC; Timing: D, E; Compliance: ED)*	Completed	An historical resources evaluation of the on-site residence was prepared (Draft EIR Appendix J)
PP 4.5-3 If construction would occur within the southeast hills or within the portion of the West Campus north of Martin Luther King Boulevard, a surface field survey shall be conducted in conjunction with a project specific environmental analysis in accordance with CEQA. Depending on the results of the survey, the following measures shall be implemented: i. If no evidence of surface archaeological resources is discovered, or if development	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
would occur in areas not designated as sensitive for archaeological resources: › Prior to site preparation or grading activities, construction personnel shall be informed of the potential for encountering unique archaeological resources and taught how to identify these resources if encountered. This shall include the provision of written materials to familiarize personnel with the range of resources that might be expected, the type of activities that may result in impacts, and the legal framework of cultural resources protection. Construction specifications shall require that all construction personnel shall be instructed to stop work in the vicinity of a potential discovery until a qualified, non-University archaeologist assesses the significance of the find and implements appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of archaeological resources is prohibited. › The campus shall require the site project contractor to report any evidence of archaeological resources unearthed during development excavation to the campus. › The archaeologist shall then be present during the grading and shall have the authority to halt disturbance of any archaeological resources long enough to assess the situation, conduct testing, and implement mitigation measures that would reduce impacts in accordance with Section 21083.2 of CEQA. ii. If any evidence of archaeological materials is discovered on the surface during field survey, then: › A qualified archaeologist shall prepare a recovery plan for the resources. › An archaeologist shall also be present during grading and shall have the authority to halt disturbance of any archaeological resources long enough to assess the situation, conduct testing, and implement mitigation measures that would reduce impacts in accordance with Section 21083.2 of CEQA. *(Category: PS; Responsible Unit: AG OPS, ODC, PP; Timing: D, E, C, O; Compliance: ED, CD)*		

LRDP EIR Mitigation Monitoring and Reporting Program
Summary of Applicability and Implementation Status
Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.5-4 Construction specifications shall require that if a paleontological resource is uncovered during construction activities: (i) A qualified paleontologist shall determine the significance of the find. (ii) The campus shall make an effort to preserve the find intact through feasible project design measures. (iii) If it cannot be preserved intact, then the University shall retain a qualified non-University paleontologist to design and implement a treatment plan to document and evaluate the data and/or preserve appropriate scientific samples. (iv) The paleontologist shall prepare a report of the results of the study, following accepted professional practice. (v) Copies of the report shall be submitted to the University and the Riverside County Museum. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	Part of Project Oversight through design and grading phase of construction	These measures must be incorporated into project construction specifications.
PP 4.5-5 In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the University immediately shall notify the Riverside County Coroner of the find and comply with the provisions of P.R.C. Section 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	Part of Project Oversight through grading phase of construction	These procedures must be followed if a burial, human bone or suspected human bone are discovered during project construction.
MM 4.5-1(a) Before altering or otherwise affecting a building or structure 50 years old or older, the campus shall retain a qualified architectural historian to evaluate the potential significance of the building, using the significance criteria set forth for historic resources under CEQA Guidelines Section 15064.5. The evaluation process shall include the development of appropriate historical background research as context for the assessment of the significance of the structure in the history of the University system, the campus, and the region. For historic buildings, structures, or features that do not meet the CEQA criteria for historical resource, no further mitigation is required and the impact is less than significant. *(Category: PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, E; Compliance: ED)*	Part of Project No further action required	An historical resources evaluation of the on-site residence was prepared as part of the CEQA review of this project (Draft EIR Appendix J). The structure was determined not to meet the CEQA criteria for "historic resource" and will be demolished as part of the proposed development.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.5-1(b) The University shall follow the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Weeks and Grimmer 1995) or the State Historical Building Code, as appropriate when making modifications to historic structures eligible for NRHP or CRHR listing. *(Category: PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, E; Compliance: ED)*	Not Applicable	
MM 4.5-2 For any proposal to demolish a structure or building that has been determined by a qualified architectural historian to qualify as an historical resource and where it has been determined that avoidance is not feasible, documentation and treatment shall be carried out as described below: (i) If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (ii) and, when physically and financially feasible, be moved and preserved or reused. (ii) If a significant historic building or structure is proposed to be demolished, the campus shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still and video photography and a written documentary record of the building to the standards of the Historic American Building Survey (HABS) or Historic American Engineering Record (HAER), including accurate scaled mapping, architectural descriptions, and scaled architectural plans, if available. A copy of the record shall be deposited with the University archives, Rivera Library Special Collections. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site specific and comparative archival research, and oral history collection as appropriate. *(Category: PS; Responsible Unit: ODC, PP; Timing: D, E; Compliance: ED)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
GEOLOGY AND SOILS		
PP 4.6-1(a) During project-specific building design, a site-specific geotechnical study shall be conducted under the direct supervision of a California Registered Engineering Geologist or licensed geotechnical engineer to assess seismic, geological, soil, and groundwater conditions at each construction site and develop recommendations to prevent or abate any identified hazards. The study shall follow applicable recommendations of CDMG Special Publication 117 and shall include, but not necessarily be limited to ■ Determination of the locations of any suspected fault traces and anticipated ground acceleration at the building site ■ Potential for displacement caused by seismically induced shaking, fault/ground surface rupture, liquefaction, differential soil settlement, expansive and compressible soils, landsliding, or other earth movements or soil constraints ■ Evaluation of depth to groundwater The structural engineer shall incorporate the recommendations made by the geotechnical report when designing building foundations. *(Category: PS; Responsible Unit: ODC; Timing: P, D, E; Compliance: CD)*	Part of Project Ongoing oversight of incorporation of recommendations throughout design and construction	A site-specific geotechnical study was prepared for the project that presented conclusions respective to these issues (Draft EIR Appendix L).
PP 4.6-1(b) The campus shall continue to implement its current seismic upgrade program. *(Category: PS; Responsible Unit: ODC; Timing: D; Compliance: CD)*	Not Applicable	
PP 4.6-1(c) The campus will continue to fully comply with the University of California's Policy for Seismic Safety, as amended. The intent of this policy is to ensure that the design and construction of new buildings and other facilities shall, as a minimum, comply with seismic provisions of California Code of Regulations, Title 24, California Administrative Code, the California State Building Code, or local seismic requirements, whichever requirements are most stringent. *(Category: PS; Responsible Unit: ODC; Timing: P, D; Compliance: CD)*	Part of Project Ongoing oversight of incorporation of recommendations throughout design and construction	The project has been designed with the appropriate seismic safety requirements, as identified in the geotechnical study (Draft EIR Appendix L).
PP 4.6-2(a) Implement SCAQMD Rule 403—Fugitive Dust during the construction See PP 4.3-2(b)	See PP 4.3-2(b)	See PP 4.3-2(b).

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.6-2(b) Implement Best Management Practices, as identified in the UCR Stormwater Management Plan See PP 4.4-2(b)	See PP 4.4-2(b)	See PP 4.4-2(b).
HAZARDS AND HAZARDOUS MATERIALS		
PP 4.7-1 The campus shall continue to implement the current (or equivalent) health and safety plans, programs, and practices related to the use, storage, disposal, or transportation of hazardous materials, including, but not necessarily limited to, the Business Plan, the Broadscope Radioactive Materials License, and the following programs: Biosafety, Emergency Management, Environmental Health, Hazardous Materials, Industrial Hygiene and Safety, Laboratory/Research Safety, Radiation Safety, and Integrated Waste Management. These programs may be subject to modification as more stringent standards are developed or if the programs are replaced by other programs that incorporate similar health and safety protection measures. *(Category: AM, SL; Responsible Unit: EHS; Timing: C,O; Compliance: AP,FO)*	Ongoing Campus-wide Program Ongoing oversight throughout design, construction and operation	The proposed housing development involves limited use of hazardous materials, during both construction and operation. Relevant aspects of these plans will be implemented in the course of normal operations during construction and ongoing operation.
PP 4.7-2 The campus shall perform hazardous materials surveys on buildings and soils, if applicable, prior to demolition. When remediation is deemed necessary, surveys shall identify all potential hazardous materials within the structure to be demolished, and identify handling and disposal practices. The campus shall follow the practices during building demolition to ensure construction worker and public safety. *(Category: PS; Responsible Unit: EHS,ODC; Timing: P, D, E, C, O; Compliance: CD, FO)*	Part of Project Ongoing oversight throughout design and demolition	Surveys of the existing structure and soils have been conducted (Draft EIR Appendices M and N). Recommendations for handling and disposal of contaminated materials from the existing residence will be implemented during demolition.
PP 4.7-3 The campus will inform employees and students of hazardous materials minimization strategies applicable to research, maintenance, and instructional activities, and require the implementation of these strategies where feasible. Strategies include but are not limited to the following: (i) Maintenance of online database by EH&S of available surplus chemicals retrieved from laboratories to minimize ordering or new chemicals. (ii) Shifting from chemical usage to micro techniques as standard practice for instruction and research, as better technology becomes available *(Category: SL; Responsible Unit: EHS; Timing: O; Compliance: AP, FO)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.7-4 Prior to demolition of structures on the campus or new construction on former agricultural teaching and research fields, the campus shall complete a Phase I environmental site assessment to determine the potential for soil or groundwater contamination on a project site. If the assessment determines that a substantial potential for contamination exists on the site, the campus shall develop and implement an appropriate testing and, if needed, develop a remediation strategy prior to demolition or construction activities. If contaminated soil and/or groundwater is encountered during the removal of on-site debris or during excavation and/or grading activities (i) The construction contractor(s) shall stop work and immediately inform EH&S. (ii) An on-site assessment shall be conducted to determine if the discovered materials pose a significant risk to the public or construction workers. (iii) If the materials are determined to pose such a risk, a remediation plan shall be prepared and submitted to EH&S to comply with all federal and State regulations necessary to clean and/or remove the contaminated soil and/or groundwater. (iv) Soil remediation methods could include, but are not necessarily limited to, excavation and on-site treatment, excavation and off-site treatment or disposal, and/or treatment without excavation. (v) Remediation alternatives for cleanup of contaminated groundwater could include, but are not necessarily limited to, on-site treatment, extraction and off-site treatment, and/or disposal. (vi) The construction schedule shall be modified or delayed to ensure that construction will not inhibit remediation activities and will not expose the public or construction workers to significant risks associated with hazardous conditions. *(Category: PS; Responsible Unit: AG OPS,EHS,ODC,PP; Timing: P, D, E, C, O; Compliance: ED)*	Part of Project Ongoing oversight through design and demolition	Surveys of the existing structure and soils have been conducted (Draft EIR Appendices M and N). The project includes a detailed asbestos management plan for demolition of the on-site residence that will ensure compliance with this measure.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.7-7(a) To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available, the campus shall provide a temporary traffic signal, signal carriers (i.e., flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the campus shall provide appropriate signage indicating alternative routes. *(This is identical to Transportation and Traffic PP 4.14-5.)* *(Category: PS, SL; Responsible Unit: ODC,PP,TAPS; Timing: O, C; Compliance: CD,FO)*	Part of Project Project-level measure to be implemented during construction	Project-level Mitigation Measure TR 2 requires preparation of a project-specific traffic control plan.
PP 4.7-7(b) To maintain adequate access for emergency vehicles when construction projects would result in roadway closures, the Office of Design and Construction shall consult with the UCPD, EH&S, and the RFD to disclose roadway closures and identify alternative travel routes. *(This is identical to Transportation and Traffic PP 4.14-8.)* *(Category: PS, SL; Responsible Unit: ODC,PP; Timing: O, C; Compliance: CD,FO)*	Part of Project Ongoing oversight through design and construction	The Office of Design and Construction must conduct this coordination prior to any roadway closures.
MM 4.7-4 Prior to development on former agricultural lands, appropriate soil testing shall be performed to determine whether chemical residue is present from prior activities in amounts that would pose health hazards to construction workers and/or occupants of new buildings. If contamination is determined to be present, PP 4.7-4 shall be implemented. *(Category: PS; Responsible Unit: AG OPS, ODC,PP; Timing: P, D, E; Compliance: ED)*	Complete	Soil testing has been conducted (Draft EIR Appendix M). The testing indicates no further action is required.
MM 4.7-7(a) Evacuation zones designated in the UCR Emergency Operations Plan will be avoided, to the extent feasible, when siting construction staging areas. Where evacuation zones cannot be avoided, alternative evacuation zones shall be identified. UCPD and the Riverside Fire Department shall be notified of alternative evacuation zones so that they can respond accordingly to any emergencies. *(Category: PS; Responsible Unit: EHS,ODC; Timing: D,C; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	An existing evacuation zone for Lothian Hall will be displaced by the project construction. An alternate emergency assembly location has been designated (Upper Parking Lot 14 and Parking Lot 13)
MM 4.7-7(b) The campus Emergency Operations Plan shall be reviewed on an annual basis and updated as appropriate to account for new on-campus development, which may require changes to the plan, such as revised locations for Campus Evacuation Zones. *(Category: AM; Responsible Unit: EHS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program Action required to reflect change for Lothian Hall	The next annual update will reflect the new emergency assembly location for Lothian Hall (Upper Parking Lot 14 and Parking Lot 13)

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.7-8(a) Provide landscaping around development areas adjacent to preserved open space that emphasizes native or traditional plant material where appropriate and provides a transition to developed areas in a manner that minimizes dense vegetation immediately adjacent to structural development. Landscaping shall be shown on building plans, and plans shall be reviewed and approved for conformance with this measure prior to project design approval and project-specific construction documents. *(Category: PS; Responsible Unit: ODC,PP; Timing: D; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	The Arroyo Enhancement Program and site landscaping incorporate transitional landscape treatments consistent with the policy at the interface with the preserved arroyo.
MM 4.7-8(b) Implement annual fuel management procedures to maintain a firebreak between the undeveloped areas and structures. *(Category: AM; Responsible Unit: EHS; Timing: O; Compliance: AP,FO)*	Ongoing Campus-wide Program	The proposed project will establish a new maintenance zone between the residential buildings and the Great Glen Arroyo.
HYDROLOGY AND WATER QUALITY		
PP 4.8-1 The campus will continue to comply with all applicable water quality requirements established by the SARWQCB. *(This is identical to Utilities PP 4.15-5.)* *(Category: AM; Responsible Unit: AG OPS, CPP, ODC, PP; Timing: D, C, O; Compliance: AP, FO)*	Ongoing Campus-wide Program Ongoing oversight through design, construction, and operation	Project design incorporates all relevant water quality requirements. A preliminary SWPPP has been prepared for the project that incorporates project-specific construction BMPs. A final plan will be prepared and a Notice of Intent will be filed under the State General Construction Permit in accordance with applicable regulations and standard campus practice.
PP 4.8-2(a) To further reduce the campus' impact on domestic water resources, to the extent feasible, UCR will:		
(i) Install hot water recirculation devices (to reduce water waste)	Part of Project Ongoing oversight through design and construction	Recirculation devices are included in project design

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
(ii) Continue to require all new construction to comply with applicable State laws requiring water-efficient plumbing fixtures, including but not limited to the Health and Safety Code and Title 24, California Code of Regulations, Part 5 (California Plumbing Code)	Part of Project Ongoing oversight through design and construction	Project design conforms to Title 24 and includes features consistent with LEED Gold certification
(iii) Retrofit existing plumbing fixtures that do not meet current standards on a phased basis over time (iv) Install recovery systems for losses attributable to existing and proposed steam- and chilled-water systems over time (v) Prohibit using water as a means of cleaning impervious surfaces	Not Applicable Not Applicable Ongoing Campus-wide Program	
(vi) Install water-efficient irrigation equipment to reduce local evaporation rates to maximize water savings for landscaping and retrofit existing systems over time *(This is identical to Utilities PP 4.15-1(b).)* *(Category: AM, PS; Responsible Unit: ODC, PP; Timing: D, O; Compliance: AP, CD, FO)*	Part of Project Ongoing oversight through design and construction	Project design includes water efficient landscape and irrigation consistent with LEED Gold certification
PP 4.8-2(b) The campus shall promptly detect and repair leaks in water and irrigation pipes. *(This is identical to Utilities PP 4.15-1(c).)* *(Category: SL; Responsible Unit: AG OPS, HSG, PP, TAPS; Timing: O; Compliance: AP, FO)*	Ongoing Campus-wide Program	
PP 4.8-2(c) The campus shall avoid serving water at food service facilities except upon request. *(This is identical to Utilities PP 4.15-1(d).)* *(Category: SL; Responsible Unit: DS; Timing: O; Compliance: AP, FO)*	Ongoing Campus-wide Program	The campus must continue to comply with this program once the Food Emporium is operational.
PP 4.8-3(a) Reduce impacts to the Natural Open Space Reserve See PP 4.1-2(c)	See PP 4.1-2(c)	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.8-3(b) Reduce disturbance of Natural and Naturalistic Open Space areas: See PP 4.1-2(d)	See PP 4.1-2(d)	See PP 4.1-2(d).
PP 4.8-3(c) SCAQMD Rule 403—Fugitive Dust See PP 4.3-2(b)	See PP 4.3-2(b)	See PP 4.3-2(b).
PP 4.8-3(d) Implement Best Management Practices, as identified in the UCR Stormwater Management Plan See PP 4.4-2(b)	See PP 4.4-2(b)	See PP 4.4-2(b).
PP 4.8-3(e) Prior to the time of design approval, the campus will evaluate each specific project to determine if the project runoff would exceed the capacity of the existing storm drain system. If it is found that the capacity would be exceeded, one or more of the following components of the storm drain system would be implemented to minimize the occurrence of local flooding: (i) Multi-project stormwater detention basins (ii) Single-project detention basins (iii) Surface detention design (iv) Expansion or modification of the existing storm drain system (v) Installation of necessary outlet control facilities *(Category: PS; Responsible Unit: CPP, ODC, PP; Timing: P, D, E; Compliance: AP, CD)*	Part of Project Ongoing oversight through design and construction	Project-specific stormwater flow analysis was conducted for the project (Draft EIR Appendix O). Site discharges are consistent with the design basis for the existing University Arroyo flood control system and on-site improvements have been identified to collect and convey on-site discharges to the University Arroyo system facilities.
PP 4.8-10 In the event of an emergency, including catastrophic failure of the California State Water Project pipeline, the campus would implement the Emergency Operations Plan. *(Category: AM; Responsible Unit: EHS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.8-9(a) Prior to design approval, the campus will review the plans for all structures to be constructed in the 100-year floodplain for compliance with the following FEMA requirements for nonresidential structures: (i) Elevate the lowest floor (including the basement) to or above the base flood level; or (ii) Together with attendant utility and sanitary facilities, design so that below the base flood level, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and (iii) Require that fully enclosed areas below the lowest floor that are subject to flooding be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for entry and exit of flood waters. *(Category: PS; Responsible Unit: CPP; Timing: P, D, E; Compliance: AP, CD, ED)*	Not Applicable	
MM 4.8-9(b) For structures placed within the 100-year floodplain, flood control devices will be designed to direct flows toward areas where flood hazards will be minimal. *(Category: PS; Responsible Unit: ODC; Timing: P, D; Compliance: AP, CD)*	Not Applicable	
LAND USE		
PP 4.9-1(a) Provide design architects with the Campus Design Guidelines See PP 4.1-1	See PP 4.1-1	See PP 4.1-1.
PP 4.9-1(b) Provide design architects with the Landscape Master Plan See PP 4.1-2(a)	See PP 4.1-2(a)	See PP 4.1-2(a).
PP 4.9-1(c) Relocate mature “specimen” trees See PP 4.1-2(b)	Not Applicable	
PP 4.9-1(d) UCR strongly commits to working closely with the City of Riverside to address and resolve land use compatibility impacts arising from increased enrollment on the residential neighborhoods surrounding UCR, particularly related to the impacts of student housing and attendant parking, noise, traffic, and other issues. *(Category: AM; Responsible Unit: CPP, ODC; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	

LRDP EIR Mitigation Monitoring and Reporting Program
Summary of Applicability and Implementation Status
Glen Mor 2 Student Apartments Project

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
Implementation of the following Programs and Practices would assure consistency with applicable land use plans and policies: ■ PP 4.4-1(a) and (b) ■ PP 4.5-3 ■ PP 4.5-5 ■ PP 4.6-1(a) ■ PP 4.7-7(a) and (b) ■ PP 4.9-1(a) through (d) ■ PP 4.10-7(a) through (d) ■ PP 4.10-8 ■ PP 4.14-1 *(*See relevant PPs for *Category*, R*esponsible Unit, Timing and Compliance* requirements*)*	See entries for individual measures	See entries for individual measures
Implementation of the following Mitigation Measures would assure consistency with applicable land use plans and policies: ■ MM 4.3-2 and MM 4.3-3 ■ MM 4.4-1(a) and (b) ■ MM 4.4-3(a) and (b) ■ MM 4.4-4(a) and (b) ■ MM 4.5-1(a) and (b) and MM 4.5-2 ■ MM 4.6-1(a) ■ MM 4.7-8(a) and (b) ■ MM 4.8-9(a) and (b) *(*See relevant MMs for *Category*, R*esponsible Unit, Timing and Compliance* requirements*)*	See entries for individual measures	See entries for individual measures

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	Applicability	Notes
NOISE		
PP 4.10-1(a) The campus shall continue to shield all new stationary sources of noise that would be located in close proximity of noise-sensitive buildings and uses or locate the new equipment in less sensitive areas of the campus to ensure that exterior noise levels generated by these sources and measured at nearby sensitive uses do not exceed 50 dBA L_{eq} during the day and 40 dBA L_{eq} during the night at residential uses (including on-campus housing), and 60 dBA during the day and 55 dBA during the night at classrooms and office buildings. *(Category: PS; Responsible Unit: ODC, PP; Timing: P, D, E, C, O; Compliance: AP, CD)*	Not Applicable	
PP 4.10-1(b) UCR will incorporate the following siting design measures to reduce long-term noise impacts:		
(i) Truck access, parking area design, and air conditioning/refrigeration units will be designed and evaluated when planning specific individual new facilities to minimize the potential for noise impacts to adjacent developments.	Part of Project Ongoing oversight through design and construction	The project site design was completed in consideration of noise generation and exposure to on- and off-campus residences. Detailed design and construction of the Food Emporium loading area and outdoor equipment placement will continue to be evaluated for compliance with this provision.
(ii) Building setbacks, building design and orientation will be used to reduce intrusive noise at sensitive student residential and educational building locations near main campus access routes, such as Blaine Street, Canyon Crest Drive, University Avenue, and Martin Luther King Boulevard. Noise walls may be advisable to screen existing and proposed facilities located near the I-215/SR-60 freeway.	Not Applicable	
(iii) Adequate acoustic insulation would be added to residence halls to ensure that the interior Ldn would not exceed 45 dBA during the daytime and 40 dBA during the nighttime (10 P.M. to 7 A.M.) in rooms facing major streets.	Not Applicable	
(iv) Potential noise impacts would be evaluated as part of the design review for all projects. If determined to be significant, mitigation measures would be identified and alternatives suggested. At a minimum, Campus residence halls and student housing design would comply with Title 24, Part 2 of the California Administrative Code. *(Category: PS; Responsible Unit: ODC; Timing: P, D; Compliance: AP, CD, ED)*	Part of Project Ongoing oversight through design and construction	In compliance with Title 24 requirements, the project must incorporate acoustic installation into the new residences so as to reduce interior noise levels to the applicable standards.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.10-2 The UCR campus shall limit 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. Construction traffic shall follow transportation routes prescribed for all construction traffic to minimize the impact of this traffic (including noise impacts) on the surrounding community. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	Part of Project Project-level measure to be reflected in construction documents and implemented during construction	Project construction will occur under stricter time constraints than indicated in this measure. Pursuant to project-level mitigation measure NOI 2, exterior construction activities will occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on Saturday, with no construction allowed on Sunday or federal holidays.
PP 4.10-5(a) The campus shall continue to provide on-campus housing to continue the evolution of UCR from a commuter to a residential campus. *(Category: AM; Responsible Unit: CPP; Timing: O; Compliance: AP)*	Part of Project No further action required	The project provides on-campus housing.
PP 4.10-5(b) The campus shall continue to implement an Alternative Transportation program that facilitates and promotes the use of transit, carpools, vanpools, and bicycling. *(Category: AM, SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	The project will not conflict with the campus's Alternative Transportation program.
PP 4.10-6 The campus shall continue to shield all new stationary sources of noise that would be located in close proximity to noise-sensitive buildings and uses. *(Category: PS; Responsible Unit: ODC, PP; Timing: P, D, E, C, O; Compliance: AP, CD)*	Not Applicable	.
PP 4.10-7(a) To the extent feasible, construction activities shall be limited to 7:00 A.M. to 9:00 P.M. Monday through Friday, 8:00 A.M. to 6:00 P.M. on Saturday, and no construction on Sunday and national holidays, as appropriate, in order to minimize disruption to area residences surrounding the campus and to on-campus uses that are sensitive to noise. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	See PP 4.10-2	See PP 4.10-2.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.10-7(b) The campus shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contracts shall specify that engine-driven equipment be fitted with appropriate noise mufflers. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	Part of Project Project-level measure to be reflected in construction documents and implemented during construction	Project-level mitigation measure NOI 4 requires construction contracts to 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.
PP 4.10-7(c) The campus shall continue to require that stationary construction equipment material and vehicle staging be placed to direct noise away from sensitive receptors. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: CD)*	Part of Project Ongoing oversight through construction documents and during construction	This measure must be incorporated into the project's construction contracts and implemented during construction. When construction of the parking structure Is substantially complete (estimated as January 2012), the parking structure will be used for materials storage and construction staging (attenuation materials are to be installed for the duration of such use at the east end as needed).
PP 4.10-7(d) The campus shall continue to conduct regular meetings, as needed, with on-campus constituents to provide advance notice of construction activities in order to coordinate these activities with the academic calendar, scheduled events, and other situations, as needed. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: AP)*	Part of Project Ongoing oversight through design and construction	This is a standard component of campus construction projects.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.10-8 The campus shall continue to conduct meetings, as needed, with off-campus constituents that are affected by campus construction to provide advance notice of construction activities and ensure that the mutual needs of the particular construction project and of those impacted by construction noise are met, to the extent feasible. *(Category: PS; Responsible Unit: ODC, PP; Timing: C; Compliance: AP)*	Part of Project Ongoing oversight through design and construction Project-level measure requires ongoing oversight through design and construction	This is a standard component of campus construction projects. In addition, project-level Mitigation Measure NOI 3 requires a designated noise liaison for this project to serve as a clear point of contact for off-campus constituents.
MM 4.10-2 The campus shall 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 to their activities and/or research. *(Category: PS; Responsible Unit: ODC; Timing: C; Compliance: AP)*	Part of Project Ongoing oversight through design and construction	This is a standard component of campus construction projects.
PUBLIC SERVICES		
PP 4.12-1(a) As development occurs, the following measures will be incorporated:		
(i) New structures would be designed with adequate fire protection features in compliance with State law and the requirements of the State Fire Marshal. Building designs would be reviewed by appropriate campus staff and government agencies.	Part of Project Ongoing oversight through design and construction	This is a standard element of the campus design process. The Campus Fire Marshal is a participant in the design and construction process.
(ii) Prior to implementation of individual projects, the adequacy of water supply and water pressure will be determined in order to ensure sufficient fire protection services.	Part of Project Ongoing oversight through design and construction	A fire flow evaluation was completed (Draft EIR Appendix R). The evaluation determined that the existing campus system and proposed site improvements would provide adequate flow and pressure.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
(iii) Adequate access will be provided to within 50 feet of the main entrance of occupied buildings to accommodate emergency ambulance service.	Part of Project Ongoing oversight through design and construction	This is a standard element of the campus design process. The site plan (Draft EIR Figure 2-3) illustrates such access to each building under the proposed design.
(iv) Adequate access for fire apparatus will be provided within 50 feet of stand pipes and sprinkler outlets.	Part of Project Ongoing oversight through design and construction	This is a standard element of the campus design process. The Campus Fire Marshal is a participant in the design and construction process
(v) Service roads, plazas, and pedestrian walks that may be used for fire or emergency vehicles will be constructed to withstand loads of up to 45,000 pounds.	Part of Project Ongoing oversight through design and construction	This is a standard element of the campus design process. The Campus Fire Marshal is a participant in the design and construction process
(vi) As implementation of the LRDP occurs, campus fire prevention staffing needs would be assessed, increases in staffing would be determined through such needs assessments. *(Category: AM, PS; Responsible Unit: EHS, ODC, PP; Timing: D, O; Compliance: AP, ED)*	Ongoing Campus-Wide Program	The Campus Fire Marshal has determined that current staffing level are adequate
PP 4.12-1(b) (i) Accident prevention features shall be reviewed and incorporated into new structures to minimize the need for emergency response from the City of Riverside.	Part of Project Ongoing oversight through design and construction	This is a standard element of the campus design process. The Campus Fire Marshal is a participant in the design and construction process
(ii) Increased staffing levels for local fire agencies shall be encouraged to meet needs generated by LRDP project related on-campus population increases. *(Category: AM, PS, SL; Responsible Unit: CPP ; Timing: D, O; Compliance: AP, CD)*	Ongoing Campus-Wide Program	The Campus Fire Marshal has determined that current staffing level are adequate

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.12-2(a) As development under the LRDP occurs, the campus will hire additional police officers and support staff as necessary to maintain an adequate level of service, staff, and equipment, and will expand the existing police facility when additional space is required. *(Category: AM, SL; Responsible Unit: PD; Timing: O; Compliance: AP)*	Ongoing Campus-Wide Program	Current campus staffing levels are within an acceptable range to serve the existing campus population and the incremental population from the Glen Mor 2 project. Expansion of police facilities is not required.
PP 4.12-2(b) The campus will continue to participate in the "UNET" program (for coordinated police response and staffing of a community service center), which provides law enforcement services in the vicinity of the campus, with equal participation of UCR and City police staffs. *(Category: SL; Responsible Unit: PD; Timing: O; Compliance: AP)*	Ongoing Campus-Wide Program	
TRAFFIC AND TRANSPORTATION		
PP 4.14-1 Implement a Transportation Demand Management program See PP 4.3-1	Ongoing Campus-Wide Program	
PP 4.14-2 The campus will periodically assess construction schedules of major projects to determine the potential for overlapping construction activities to result in periods of heavy construction vehicle traffic on individual roadway segments, and adjust construction schedules, work hours, or access routes to the extent feasible to reduce construction-related traffic congestion. *(Category: AM, PS; Responsible Unit: ODC; Timing: D, C; Compliance: AP)*	Ongoing Campus-Wide Program Ongoing oversight through design and construction	The cumulative impact analysis presented in Section 3.13 of this EIR considers the potential for overlap in other projects' construction periods.
PP 4.14-4 The campus shall provide design architects for roadway and parking improvements with the Campus Design Guidelines and instructions to implement those elements of the guidelines relevant to parking and roadway design. *(Category: PS; Responsible Unit: ODC; Timing: P, D; Compliance: AP)*	Part of Project No further action required	The campus has provided the indicated guidelines and instructions to the design team.
PP 4.14-5 Maintain at least one unobstructed lane in both directions on campus roadways. See PP 4.7-7(a)	See PP 4.7-7(a)	See PP 4.7-7(a).

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
PP 4.14-6 For any construction-related closure of pedestrian routes, the campus shall provide alternate routes and appropriate signage and provide curb cuts and street crossings to assure alternate routes are accessible. *(Category: PS; Responsible Unit: ODC, PP; Timing: O, C; Compliance: CD)*	Part of Project Project-level measure requires ongoing oversight through design and construction	Project-level Mitigation Measure TR 3 has been incorporated into the project .
PP 4.14-8 Maintain adequate access for emergency vehicles during construction See PP 4.7-7(b)	See PP 4.7-7(b)	See PP 4.7-7(b).
MM 4.14-1(a) The intersection of 3rd Street/Chicago Avenue would require an additional left-turn lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(b) In addition to the improvements identified for the 'Without Project' scenario, the intersection of Blaine Street/Iowa Avenue would require an additional left-turn lane on the eastbound approach, and a separate through and right-turn lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP,ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(c) In addition to the improvements identified for the 'Without Project' scenario, the intersection of University Avenue/Chicago Avenue would require a separate through and a right-turn lane on the southbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(d) The intersection of University Avenue/Iowa Avenue would require an additional left-turn lane on the eastbound approach to operate at LOS D or better. The approach currently consists of one left-turn lane, two through lanes, and one right-turn lane. The mitigated approach would consist of two left-turn lanes, one through lane, and one shared through/right-turn lane. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP,ODC; Timing: P, E; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.14-1(e) In addition to the improvements identified for the 'Without Project' scenario, the intersection of Martin Luther King Boulevard/Chicago Avenue would require an additional through lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP,ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(f) In addition to the improvements identified for the 'Without Project' scenario, the intersection of Martin Luther King Boulevard/Canyon Crest Drive would require an additional left-turn lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM,PS; Responsible Unit: CPP,ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(g) The intersection of Linden Street/Aberdeen Drive would require a shared through /left-turn lane and a right-turn lane on the eastbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the University.) Please note that this is a T-intersection. *(Category: AM, PS; Responsible Unit: CPP,ODC; Timing: P, E; Compliance: FO)*	Not Applicable	
MM 4.14-1(h) In addition to the improvements identified for the 'Without Project' scenario, the intersection of Blaine Street/Iowa Avenue would require an additional left-turn lane on the southbound approach, an additional left-turn lane on the eastbound approach, an additional left-turn lane on the westbound approach, and a separate through and right-turn lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(i) The intersection of University Avenue/Iowa Avenue would require an additional left-turn lane on the eastbound approach, and a separate through and right lane on the southbound approach to operate at LOS D or better. The southbound approach currently consists of one left-turn lane, one through lane, and one shared through/right-turn lane. The mitigated southbound approach would consist of one left-turn lane, two through lanes, and one right-turn lane. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.14-1(j) The intersection of Martin Luther King Boulevard/Chicago Avenue would require an additional through and an additional right-turn lane on the eastbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(k) In addition to the improvements identified for the 'Without Project' scenario, the intersection of Martin Luther King Boulevard/Canyon Crest Drive would require an additional left-turn lane on the westbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the City of Riverside.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: AP)*	Not Applicable	
MM 4.14-1(l) The intersection of Linden Street/Aberdeen Drive would require a shared through/left-turn lane and a right-turn lane on the eastbound approach to operate at LOS D or better. (This intersection is under the jurisdiction of the University.) *(Category: AM, PS; Responsible Unit: CPP, ODC; Timing: P, E; Compliance: FO)*	Not Applicable	
MM 4.14-10(a) The campus shall work with the City of Riverside to monitor the demand for off-campus parking in residential neighborhoods or at commercial establishments to determine whether use of off-campus parking by the campus population is substantially restricting availability for neighborhood residents or patrons of commercial establishments *(Category: AM; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	
MM 4.14-10(b) If the campus and the City of Riverside mutually determine that use of off-campus parking by members of the campus population has substantially restricted availability to residents and patrons of commercial establishments, the campus and the City will work cooperatively to implement appropriate measures, which may include, but not be limited to: (i) Increased enforcement of existing parking regulations (ii) Changes in parking regulations (e.g., time restrictions for on-street parking) (iii) A permit parking program for affected residential neighborhoods and/or commercial facilities. *(Category: AM; Responsible Unit: CPP, TAPS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.14-11 If on-campus parking is not available, off-site construction worker parking shall be provided with shuttle service to the remote parking location *(Category: PS; Responsible Unit: ODC; Timing: C; Compliance: CD)*	Part of Project Ongoing oversight through design and construction	In the event that off-site worker parking is required, shuttles must be provided to and from the work site.
MM 4.14-13 As part of the Multi-modal Transportation Program, the UCR Transportation and Parking Services department will work with transit service providers on an annual basis to monitor demand for transit services, to identify needed service improvements, and encourage the implementation of any such improvements. *(Category: SL; Responsible Unit: TAPS; Timing: O; Compliance: AP)*	Ongoing Campus-wide Program	
UTILITIES		
PP 4.15-1(a) Improvements to the campus water distribution system, including necessary pump capacity, will be made as required to serve new projects. Project-specific CEQA analysis of environmental effects that would occur prior to project-specific approval will consider the continued adequacy of the domestic/fire water systems, and no new development would occur without a demonstration that appropriate domestic/fire water supplies continue to be available. *(Category: PS; Responsible Unit: CPP, ODC; Timing: P, D, E; Compliance: ED)*	Completed	Campus Physical Plant personnel have confirmed adequacy of the domestic system. A Fire Flow analysis (Draft EIR Appendix R) has confirmed system adequacy to meet required fire flow.
PP 4.15-1(b) Reduce the campus' impact on domestic water resources See PP 4.8-2(a)	See PP 4.8-2(a)	See PP 4.8-2(a).
PP 4.15-1(c) The campus shall promptly detect and repair leaks in water and irrigation pipes. See PP 4.8-2(b)	Ongoing Campus-wide Program	
PP 4.15-1(d) Serve water at food service facilities only on request See PP 4.8-2(c)	See PP 4.8-2(c)	See PP 4.8-2(c).
PP 4.15-5 Comply with all applicable SARWQCB water quality requirements See PP4.8-1	See PP4.8-1	See PP 4.8-1.

2005 LRDP Planning Strategies, Programs and Practices, and Mitigation Measures	*Applicability*	*Notes*
MM 4.15-6(a) UCR will work with the City of Riverside to evaluate the capacity of existing sewer trunk lines serving the campus and estimate the future impact of LRDP implementation on available capacity. *(Category:* AM*; Responsible Unit:* CPP, PP*; Timing:* P, O*; Compliance:* AP*)*	Completed	Campus staff determined that existing trunk sewer lines are of adequate capacity
MM 4.15-6(b) If the study of sewer trunk line capacity determines that available capacity would be exceeded, UCR and the City will negotiate payment of fair share of improvements to provide sufficient discharge capacity to meet campus needs. UCR shall contribute its fair share payments and additional required trunk line capacity shall be provided by the City prior to exceedance of sewer trunk line capacity. *(Category:* AM, PS*; Responsible Unit:* CPP, PP*; Timing:* P, O*; Compliance:* AP*)*	Not applicable	

Appendix G

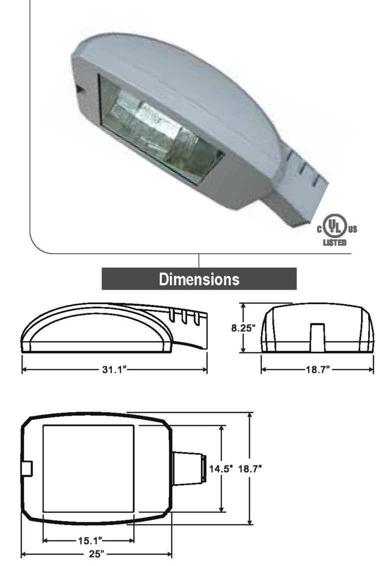
Photometric Analysis

Induction lighting

D825i

Architectural Area Light

Job Information	
	Type:
Catalog #:	
Project:	
Comments:	
Prepared by:	



Description

The D825i has an aerodynamic shape which helps redirect the airflow to reduce the wind load, when compared to the traditional shoebox fixture. This fixture can then be used with a lighter pole to save on the overall cost of fixtures.

Features

- UL Listed for wet location
- Precised two-piece heavy duty die-cast aluminum housing
- Heat and impact resistant tempered glass lens
- Silicone foam gasket included
- Segmented aluminum designed reflector for the best light efficiency
- Stainless steel external hardware
- Removable door assembly
- Polyester powdercoat finish

Induction Lighting

DECO™ | LIGHTING

ORDERING INFORMATION:

Example: (D825i-150-50-120-PM-BZ-PC)

D825i — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Series
Architectural Area Light

Watts / Lumens
- **43** - 40w/3680
- **65** - 65w/5980
- **86** - 80w/7360
- **127** - 120w/11040
- **150** - 150w/13800
- **205** - 200w/18400

Color Temp.
- **35** - 3500k
- **41** - 4100k
- **47** - 4700k
- **50** - 5000k

Voltage
- **120** - 120V
- **208** - 208V
- **220** - 220V
- **240** - 240V
- **277** - 277V

Mounting
- **PM** - Pole Mount

Finish
- **SL** - Silver
- **BZ** - Bronze[1]
- **BL** - Black
- **WH** - White
- **CU** - Custom[2]

Options
- **PC** - Photocell[3]
- **WSF** - Wired Single Fuse[3]
- **WDF** - Wired Double Fuse[3]

[1] Standard color for this fixture
[2] Contact factory for custom finishes
[3] Please specify voltage (eg. 120V)

ROOF DECK POLE LIGHT MOUNTED AT 15'AFF W/150W INDUCTION LAMP

Induction lighting

D511i

Parking Luminaire

Job Information	
	Type:
Catalog #:	
Project:	
Comments:	
Prepared by:	

Description

The D511i is a multi-purpose parking luminaire that has been designed to meet the difficult task of eliminating the "cave effect" while providing high quality, uniform, cutoff illumination. U.L. 1598 listed and CSA certified for wet locations. By controlling glare and providing excellent uniformity, the D511i improves vehicular movement and pedestrian safety in parking garage facilities.

Features

- Supplied galvanized steel rapid mount attachment fits standard J-Box
- Die-cast aluminum construction houses electrical componentry that are heat sunk for cooler operation and extended component life
- Uplight window that provides light above the 90° plane for elimination of "cave effect"
- Continuously sealed silicone gasketing is provided between the electrical, optical housing and housing door, providing a sealed optical environment impervious to contaminants
- Provides a low glare, cutoff distribution into the drive lane while pushing light into the stall areas
- Polycarbonate lens is easily removed at three points and is hinged for ease of relamping
- Standard color is silver; also available in bronze, black or white. Contact factory for custom finishes.

Induction Lighting

DECO™ | LIGHTING

ORDERING INFORMATION:

Example: (D511i-86-50-120-SL-DL)

D511i — ☐ — ☐ — ☐ — ☐ — ☐

Series
Parking Luminaire

Wattage/Lumens
- **43** - 40W/3680
- **86** - 80W/7360
- **127** - 120W/11040
- **150** - 150W/13800
- **205** - 200W/18400

Color Temp.
- **35** - 3500k
- **41** - 4100k
- **47** - 4700k
- **50** - 5000k

Voltage
- **120** - 120V
- **208** - 208V
- **220** - 220V
- **240** - 240V
- **277** - 277V

Finish
- **SL** - Silver[1]
- **BZ** - Bronze
- **BL** - Black
- **WH** - White
- **CU** - Custom[2]

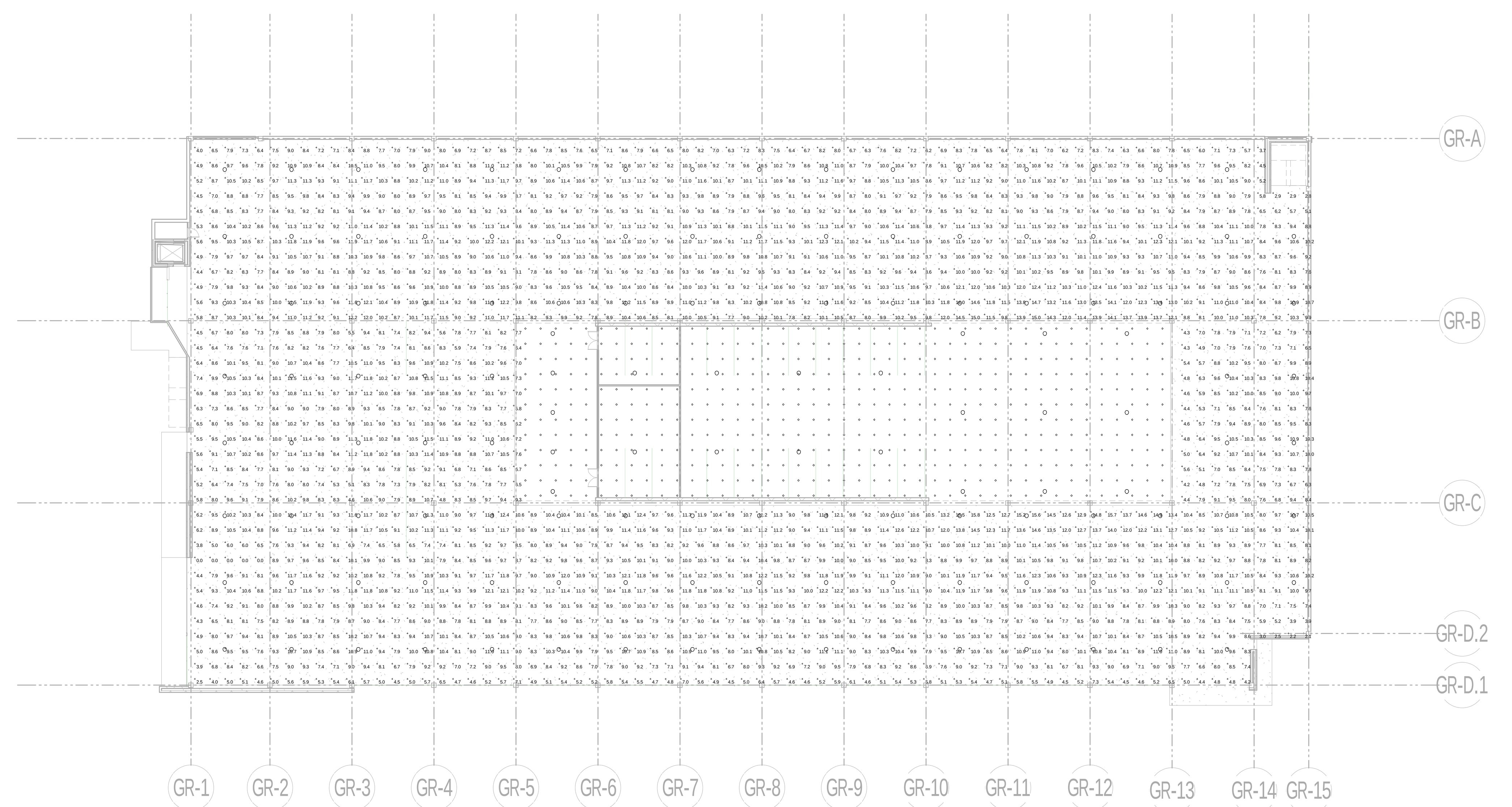
Option
- **WSF** - Wired Single Fuse[3]
- **WDF** - Wired Double Fuse[3]
- **DL** - Downlight
- **VR** - Vandal Resistant

[1] Standard color for this fixture
[2] Contact factory for custom finishes
[3] Please specify voltage (eg. 120V)

PARKING GARAGE FIXTURE CEILING SURFACE MOUNTED W/205W INDUCTION LAMP

4 PARKING GARAGE - THIRD FLOOR LIGHTING PLAN
1" = 30'-0"

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	2.6 fc	12.0 fc	0.5 fc	24.0:1	5.2:1



1 PARKING GARAGE - FIRST AND SECOND FLOOR LIGHTING PLANS
1" = 30'-0"

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	2.5 fc	5.1 fc	0.6 fc	8.5:1	4.2:1

SASAKI
77 GEARY STREET, FOURTH FLOOR, SAN FRANCISCO, CA 94108 USA
t 415 776 7272 f 415 202 8970 w www.sasaki.com

OMB ELECTRICAL ENGINEERS, INC.
8825 Research Drive
Irvine, CA 92618
(949) 753-1553 Fax (949) 753-1992
E-Mail: mail@ombengrs.com

Key Plan

DSA Stamp

SFM Stamp

No.	Description	Date
	50% DESIGN DEVELOPMENT	10/08/2010
	95% SCHEMATIC DESIGN	06/24/2010
	50% SCHEMATIC DESIGN	05/20/2010

DWG ISSUE & REVISION HISTORY

Stamp

Project Title: UNIVERSITY OF CALIFORNIA

UC RIVERSIDE GLEN MOR 2 STUDENT APARTMENTS

PROJECT NUMBER: 956334

Drawing Title:

PARKING GARAGE LIGHTING PLANS

Project No.	06031.00	Drawn By:	Author
Scale:	1" = 30'-0"	Checked By:	Checker
Date:	10/08/2010	Approved By:	Approver

Drawing No. E07.80

Induction lighting
D825i
Architectural Area Light

Job Information	
	Type:
Catalog #:	
Project:	
Comments:	
Prepared by:	

Description
The D825i has an aerodynamic shape which helps redirect the airflow to reduce the wind load, when compared to the traditional shoebox fixture. This fixture can then be used with a lighter pole to save on the overall cost of fixtures.

Features
- UL Listed for wet location
- Precised two-piece heavy duty die-cast aluminum housing
- Heat and impact resistant tempered glass lens
- Silicone foam gasket included
- Segmented aluminum designed reflector for the best light efficiency
- Stainless steel external hardware
- Removable door assembly
- Polyester powdercoat finish

Induction Lighting
DECO™ | LIGHTING

ORDERING INFORMATION:
Example: (D825i-150-50-120-PM-BZ-PC)

D825i – ___ – ___ – ___ – ___ – ___ – ___

Series	Watts / Lumens	Color Temp.	Voltage	Mounting	Finish	Options
Architectural Area Light	43 - 40w/3680	35 - 3500k	120 - 120V	PM - Pole Mount	SL - Silver	PC - Photocell[3]
	65 - 65w/5980	41 - 4100k	208 - 208V		BZ - Bronze[1]	WSF - Wired Single Fuse[3]
	86 - 80w/7360	47 - 4700k	220 - 220V		BL - Black	WDF - Wired Double Fuse[3]
	127 - 120w/11040	50 - 5000k	240 - 240V		WH - White	
	150 - 150w/13800		277 - 277V		CU - Custom[2]	
	205 - 200w/18400					

[1] Standard color for this fixture
[2] Contact factory for custom finishes
[3] Please specify voltage (eg. 120V)

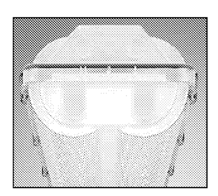
ROOF DECK POLE LIGHT MOUNTED AT 15'AFF W/150W INDUCTION LAMP

CHIARO
Fluorescent Two Lamp, T5, T5 HO or T8

Surface-Mounted or Suspended Wet Location (IP 65) Diffuser Luminaire

4'

online Find it Fast 282



Applications: This durable, moisture-proof luminaire is ideal for locations where humidity and dust is constant challenge. The internal prismatic structure allows easy cleaning of the fixture while providing excellent glare control and high efficiency (79% for 32W T8). CHIARO is a good choice for bakeries, animal feed facilities, pump rooms, agricultural and industrial facilities and parking garages.

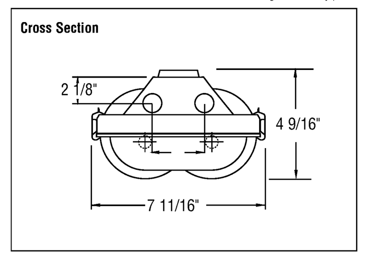
Type: ____________
Project: ____________

ORDERING NOTE: Specify lamping, mounting and options.

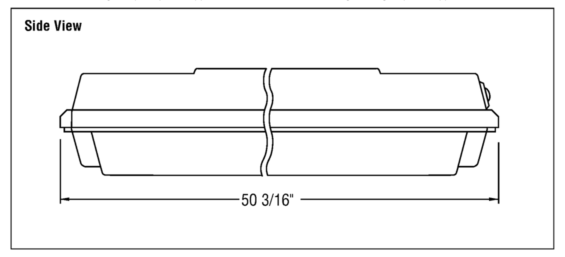
▼Fixture	▼Lamping	▼Length	▼Voltage	▼Mounting	▼Options
FTW	____	4	U	____	____
FTW CHIARO FT, Wide	**2285** (2) 28W T5 **2328** (2) 32W T8 **2545** (2) 54W T5 HO	**4** 4'	**U** Universal 120/277V	**SM** Surface Mounting Kit **SK** 20" Suspension Kit, includes feed cord	**1** Stand-By Battery Pack (consult factory) **TF** Transparent diffuser fasteners **AV** Tamper-proof fastener kit **CSO** Cool Spot Optimizer* (T5 / T5 HO only)

*German registered utility patent DE 20307607 U1. Pending European patent application EP 1482534 A2. Pending Norwegian patent application NO 2004 2016.

Cross Section



Side View



cUL us LISTED
Suitable for wet locations
Approved for thru-wiring

IBEW Union Made

1. Housing - Transparent, high-impact resistant polycarbonate (halogen-free and self-extinguishing). Polyurethane 2-component foam gasket, wet location rating (IP 65 protection in accordance with EN 60598) is accomplished with unique sealing process.

2. Sockets - Lamp configurations allow for twist lock installation.

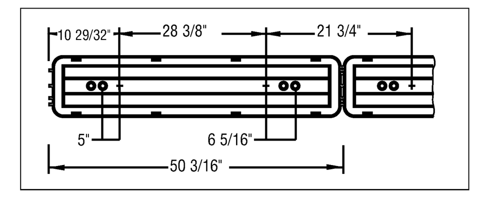
3. Lamping - (2) T5, T5 HO or T8 fluorescent lamps, supplied by others. Remove diffuser for access to lamps.

4. Reflector - Perforated white reflector allows 20% indirect component.

5. Ballast - Universal voltage electronic 120/277V ballast. Ambient temperature will influence performance of fluorescent lamp output. Consult factory for applications with ambient temperatures < 15°F or > 95°F. Consult factory for 347V.

6. Diffuser - One piece, injection-molded impact-resistant polycarbonate, with computer-optimized, internal prismatic structure. Smooth surface for easy cleaning. VA2 stainless steel diffuser fasteners included; transparent fasteners may be ordered separately.

7. Mounting - Surface-mount with two supplied V2A stainless steel mounting brackets. May be suspended with 20" **SK** Suspension Kit, ordered separately.



8. Junction Box - 4" octagonal junction box supplied by others. Fixtures can be through-wired.

9. Stand-by Battery Pack - Consult factory for availability.

10. Cool Spot Optimizer - Aluminum sleeve with an injection molded insert that sits into the T5 / T5 HO lamp base (one per lamp on the label side). Keeps the cold spot of the lamp insulated and close to its optimal operating temperature in cold weather.

11. Weight - 4.4 lbs. (4' fixture).

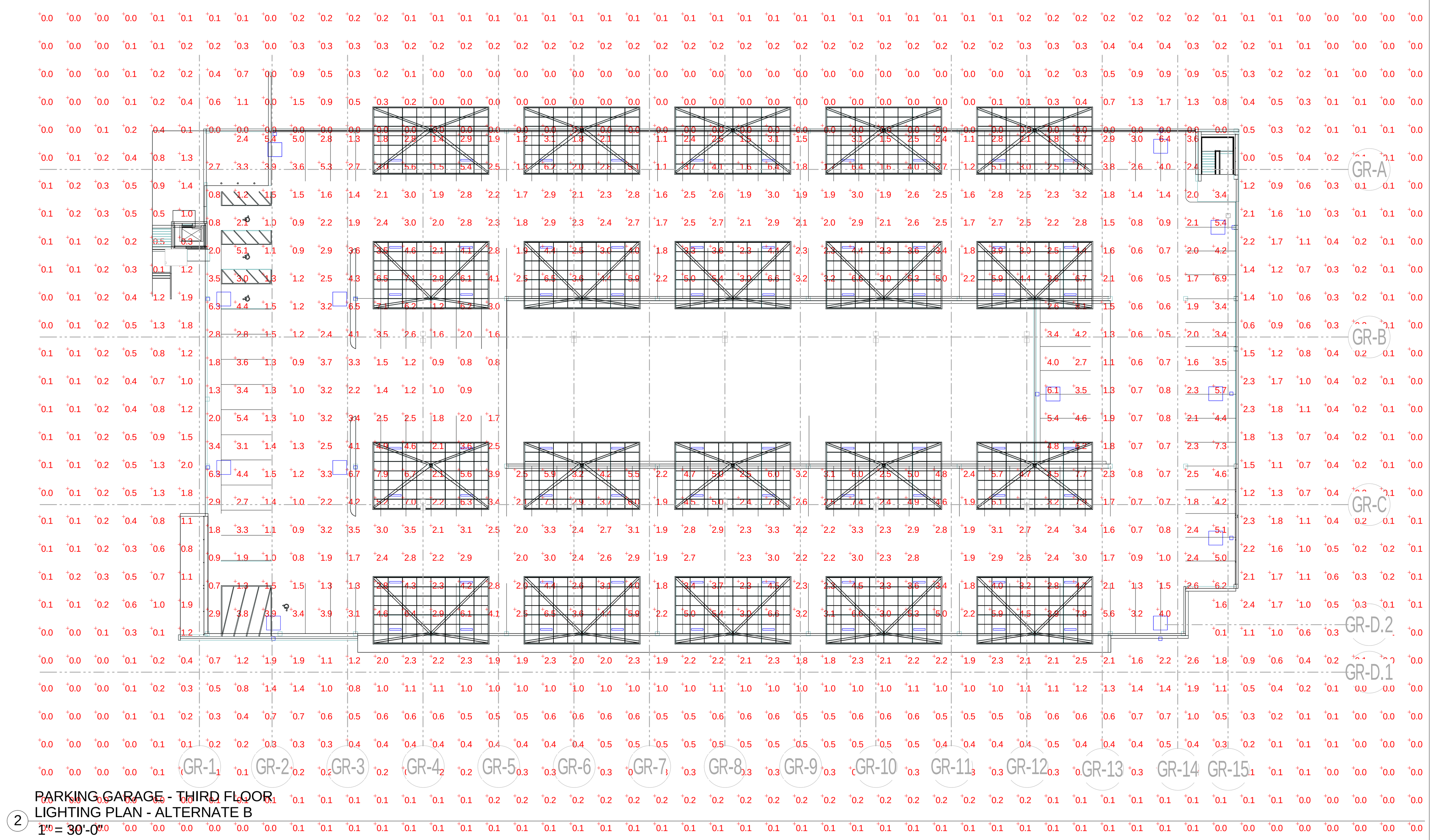
In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Technical specification sheets that appear on www.zumtobel.us are the most recent version and supersede all other versions that exist in any other printed or electronic form.

Zumtobel Lighting Inc. ©2008
3300 Route 9W • Highland, NY 12528-2630
www.zumtobel.us
TEL (845) 691-6262 • (800) 932-0633 • FAX (845) 691-6289
10/15/08

CHR-2

ZUMTOBEL

LIGHT FIXTURE SURFACE MOUNTED TO UNDERSIDE OF CARPORT W/(2) 32W T8 LAMPS



2 PARKING GARAGE - THIRD FLOOR LIGHTING PLAN - ALTERNATE B
1" = 30'-0"

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	3.0 fc	8.1 fc	0.5 fc	16.2:1	6.0:1

Induction lighting
D511i
Parking Luminaire

Job Information	
	Type:
Catalog #:	
Project:	
Comments:	
Prepared by:	

Description
The D511i is a multi-purpose parking luminaire that has been designed to meet the difficult task of eliminating the "cave effect" while providing high quality, uniform, cutoff illumination. U.L. 1598 listed and CSA certified for wet locations. By controlling glare and providing excellent uniformity, the D511i improves vehicular movement and pedestrian safety in parking garage facilities.

Features
- Supplied galvanized steel rapid mount attachment fits standard J-Box
- Die-cast aluminum construction houses electrical componentry that are heat sunk for cooler operation and extended component life
- Uplight window that provides light above the 90° plane for elimination of "cave effect"
- Continuously sealed silicone gasketing is provided between the electrical, optical housing and housing door, providing a sealed optical environment impervious to contaminants
- Provides a low glare, cutoff distribution into the drive lane while pushing light into the stall areas
- Polycarbonate lens is easily removed at three points and is hinged for ease of relamping
- Standard color is silver; also available in bronze, black or white. Contact factory for custom finishes.

Induction Lighting
DECO™ | LIGHTING

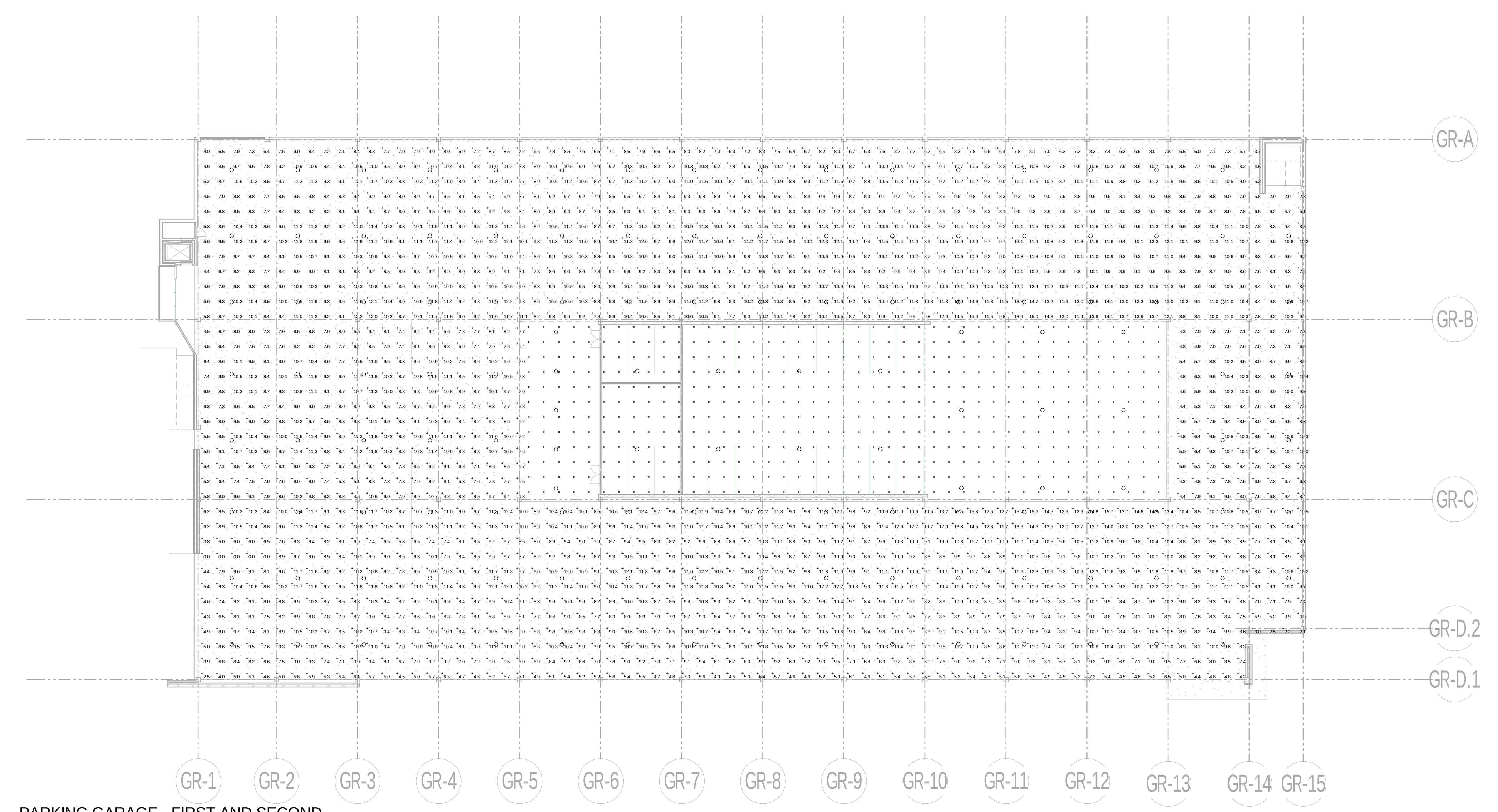
ORDERING INFORMATION:
Example: (D511i-86-50-120-SL-DL)

D511i – ___ – ___ – ___ – ___ – ___

Series	Wattage/Lumens	Color Temp.	Voltage	Finish	Option
Parking Luminaire	43 - 40W/3680	35 - 3500k	120 - 120V	SL - Silver[1]	WSF - Wired Single Fuse[3]
	86 - 80W/7360	41 - 4100k	208 - 208V	BZ - Bronze	WDF - Wired Double Fuse[3]
	127 - 120W/11040	47 - 4700k	220 - 220V	BL - Black	DL - Downlight
	150 - 150W/13800	50 - 5000k	240 - 240V	WH - White	VR - Vandal Resistant
	205 - 200W/18400		277 - 277V	CU - Custom[2]	

[1] Standard color for this fixture
[2] Contact factory for custom finishes
[3] Please specify voltage (eg. 120V)

PARKING GARAGE FIXTURE CEILING SURFACE MOUNTED W/205W INDUCTION LAMP



1 PARKING GARAGE - FIRST AND SECOND FLOOR LIGHTING PLANS - ALTERNATE B
1" = 30'-0"

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	2.5 fc	5.1 fc	0.6 fc	8.5:1	4.2:1

SASAKI
77 GEARY STREET, FOURTH FLOOR, SAN FRANCISCO, CA 94108 USA
t 415 776 7272 f 415 202 8970 w www.sasaki.com

OMB ELECTRICAL ENGINEERS, INC.
8825 Research Drive
Irvine, CA 92618
(949) 753-1553 Fax (949) 753-1992
E-Mail: mail@ombengrs.com

Key Plan

DSA Stamp

SFM Stamp

No.	Description	Date

DWG ISSUE & REVISION HISTORY

Stamp

Project Title: UNIVERSITY OF CALIFORNIA
UC RIVERSIDE GLEN MOR 2 STUDENT APARTMENTS
PROJECT NUMBER: 956334

Drawing Title:
PARKING GARAGE LIGHTING PLANS - ALTERNATE B

Project No.	06031.00	Drawn By:	Author
Scale:	1" = 30'-0"	Checked By:	Checker
Date:	10/26/10	Approved By:	Approver

Drawing No.
E07.80-B

Appendix H

Air Quality and Climate Change Assessment Report

Air Quality and Climate Change Assessment Report for Glen Mor 2 Student Apartments, University of California, Riverside

Prepared for:

University of California, Riverside
Office of Design and Construction
3615-A Canyon Crest Drive
Riverside, CA 92507
Contact: Tricia Thrasher
951-827-1484

Prepared by:

ICF International
9775 Businesspark Ave., Ste. 200
San Diego, CA 92131
Contact: Alex Hardy
858-578-8964

January 2011

ICF International. 2011. *Air Quality and Climate Change Assessment Report for Glen Mor 2 Student Apartments, University of California, Riverside*. January. (ICF 374.10.) San Diego, CA. Prepared for University of California, Riverside, Riverside, CA.

Contents

Tables

Acronyms and Abbreviations

μg/m3	micrograms per cubic meter
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BAU	business as usual
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
Cal/EPA	California EPA
Caltrans	California Department of Transportation
CAT	Climate Action Team
CCAA	California Clean Air Act
CCAR's	Climate Action Registry's
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPUC	California Public Utilities Commission
DPM	Diesel Particulate Matter
EH&S	Environmental Health and Safety
EIR	environmental impact report
EPA	Environmental Protection Agency
HAP	hazardous air pollutants
GHG	greenhouse gas
GWP	global warming potential
HCFCs	halogenated fluorocarbons
HFCs	hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change

LCFS	low-carbon fuel standard
LEED	Leadership in Energy and Environmental Design
LOS	level of service
LRDP	Long-Range Development Plan
LSTs	localized significance thresholds
MATES III	Multiple Air Toxics Exposure Study III
MMT	million metric tons
MPO	metropolitan planning organization
MSAT	mobile source air toxics
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO	nitric oxide
NO_2	Nitrogen Dioxide
O_3	ozone
OPR	Office of Planning and Research
Pb	Lead
PFCs	perfluorinated carbons
PM10	particulate matter
PM2.5	fine particulate matter
ppm	parts per million
RCPG	Regional Comprehensive Plan and Guide
ROGs	reactive organic gases
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_X	oxides of sulfur
TAC	toxic air contaminants
UCR	University of California, Riverside
V/C	vehicle-to-capacity

VMT	vehicle miles traveled
VOCs	volatile organic compounds

Air Quality and Climate Change Assessment Report

Executive Summary

Findings

This report provides an analysis of potential air quality and climate change impacts related to the Glen Mor 2 Student Apartments Project, located on approximately 21 acres of university-owned property on the eastern edge of the University of California, Riverside (UCR) campus. All analyses have been conducted to comply with South Coast Air Quality Management District (SCAQMD) requirements for air quality assessments to satisfy California Environmental Quality Act (CEQA) requirements. The findings are as follows:

- Project emissions during construction would remain below SCAQMD regional emissions thresholds with mitigation but would exceed localized thresholds;
- The project's on-site diesel particulate matter (DPM) emissions during construction would not result in a significant health risk at adjacent sensitive-receptor locations;
- Project emissions during long-term operations would not exceed SCAQMD regional or local emissions thresholds;
- The project's carbon monoxide (CO) emissions during long-term project operations would not create any new or exacerbate any existing CO hot spots;
- The project would be consistent with air quality policies set forth by SCAQMD and the Southern California Association of Governments (SCAG), as presented in the region's most recent Air Quality Management Plan (AQMP);
- The project would result in a significant and unavoidable cumulative localized air quality impact; and
- Cumulative regional air quality impacts would be less than significant.

Introduction

Purpose

ICF International was retained by UCR to evaluate the potential air quality and climate change impacts that may occur because of construction and operation of the proposed Glen Mor 2 Student Apartments Project.

Project Site Location

The project site is located on the east side of the UCR campus, which is in the City of Riverside. The location of the project site, in a regional and local context, is shown in Figure 1 and Figure 2, respectively.

Project Description

The project would entail 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 include five residential buildings, a food emporium, a resident services office, a community building, an executive retreat center, and a 597-space multi-level parking garage. Table 1 provides a statistical summary of the proposed buildings, and Figure 3 presents the proposed site layout. The following discussion provides further explanation of each component of the proposed project, including the parking structure and landscaping.

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

Building	Use	GSF[1]	ASF[2]	Occupants	Footprint (sf)	Floors	Height (ft)	Pad Elevation (ft ASL[3])	Roof Elevation (ft ASL[3])
A	Food Emporium	7,960	4,600	120	7,000	1	23	1,088	1,104
B	Housing	67,400	46,000	160	13,100	5	55	1,094	1,144
C	Housing	61,720	42,600	140[4]	12,550	5	55	1,093	1,143
D	Housing	77,420	55,370	182	12,950	5	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
F	Community Building	5,540	3,825	65	3,010	2	32	1,114/1,126	1,146
G	Housing	57,370	42,525	140[4]	7,475	5	55	1,114/1,126	1,166
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
Parking Structure	Parking	191,800		597	66,910	3	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 and excludes space devoted to walls, columns, corridors, restrooms, and similar building support spaces.

3 ASL stands for above sea level.

4 Buildings C and G each include two resident director units, which are not included in the student bed count of 810.

Air Quality and Climate Change Assessment

This air quality assessment includes a discussion of applicable significance criteria and the analysis methodologies outlined in the following SCAQMD guidance documents:

- CEQA Air Quality Handbook (1993),
- Localized Significance Threshold Methodology for CEQA Evaluations (2003),
- Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology (2006), and
- Draft Interim CEQA Greenhouse Gas Significance Threshold Guidance Document (2008).

Based on these above-referenced guidance documents, this assessment evaluates the short-term construction-period and long-term operational-period impacts related to localized and regional air quality that would result with development of the proposed project. This assessment also evaluates the project's contribution of greenhouse gas (GHG) emissions to global climate change.

Environmental Setting

Regulatory Setting

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The project site and 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 and other requirements) are implemented directly by EPA. Other portions of the CAA (e.g., stationary-source requirements) are implemented by state and local agencies.

Federal Air Quality Regulations

Federal Clean Air Act

The CAA was first enacted in 1955 but has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates the state to submit and implement a State Implementation Plan (SIP) for local areas that fail to meet the standards. The plans must include pollution control measures that demonstrate how the standards will be met. The City of Riverside is within the South Coast Air Basin (Basin) and, as such, is in an area designated as a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas that fail to meet the NAAQS. The amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would affect development of the proposed project the most include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 2 shows the NAAQS currently in effect for each criteria pollutant. The NAAQS were amended in July 1997 to include an 8-hour standard for ozone (O_3) and adopt a NAAQS for fine particulate matter (PM2.5). The Basin fails to meet national standards for O_3, inhalable particulate matter (PM10), and PM2.5 and therefore is considered a federal nonattainment area for those pollutants. Table 3 lists each criteria pollutant and its related attainment status within the Basin.

Table 2. 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 (PM10)	24 hours	50 μg/m^3[c]	150 μg/m^3
	Annual	20 μg/m^3	--
Fine Particulate Matter (PM2.5)	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 O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM10, and PM2.5 are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

[b] The NAAQS, other than O_3 and those based on annual averages, are not to be exceeded more than once a year. The O_3 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; μg/m^3 = micrograms per cubic meter.

Source: California Air Resources Board, September 8, 2010.

Table 3. 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.

Hazardous Air Pollutants/Mobile Source Air Toxics

The CAA identified 188 pollutants as being air toxics, which are also known as hazardous air pollutants (HAPs). From this list, the EPA identified a group of 21 as mobile source air toxics (MSAT) in its final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17235) in March 2001. From this list of 21 MSATs, the EPA has identified six MSATs (benzene, formaldehyde, acetaldehyde, DPM/diesel exhaust organic gases, acrolein, and 1,3-butadiene) as being priority MSATs. To address emissions of MSATs, the EPA has issued a number of regulations that have and will continue to dramatically decrease MSATs through cleaner fuels and cleaner engines.

Federal Climate Change Policy

Although there is currently no federal overarching law or policy related to climate change or regulation of GHGs, recent activity suggests that regulation may be forthcoming. Foremost among legal developments to date has been the U.S. Supreme Court's decision in *Massachusetts v. EPA*, the "Endangerment Finding," and "Cause or Contribute Finding," which is described below. Despite these findings, the future of GHG regulations at the federal level is still uncertain. While the EPA is considering regulation of GHG sources, EPA authority may be preempted by congressional action.

The following summarizes recent federal legal cases, legislation, and policies related to climate change and GHG regulation.

Massachusetts et al. v. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations, sued the EPA in an effort to force the agency to regulate GHG as a pollutant pursuant to the CAA in *Massachusetts et al. v. Environmental Protection Agency*. On April 2, 2007, the U.S. Supreme Court held that the EPA has the authority to regulate GHG emissions as pollutants pursuant to the CAA. However, at the time of the ruling, the court did not decide whether the EPA is required to regulate GHG emissions, or may exercise discretion to not regulate at this time.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 mandates a host of actions that would aid in the reduction of GHG emissions. These include (but are not limited to): fuel economy standard of

35 miles per gallon by 2020; improved energy efficiency in lighting and appliances; and investments in efficiency and renewable energy use (White House 2008).

EPA "Endangerment Finding" and "Cause or Contribute Finding" (2009)

In its "Endangerment Finding," the Administrator of the EPA found that GHGs in the atmosphere, as described above, threaten the public health and welfare of current and future generations. The Administrator also found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare. Although the Endangerment Finding does not place requirements on industry, it is an important step in the EPA's process to develop regulation. This action is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009 (EPA 2009).

In its "Cause or Contribute Finding" the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens the public health and welfare (EPA 2009).

Council on Environmental Quality (CEQ) NEPA Guidance on Consideration of Effects of Climate Change and GHG Emissions (2010)

This guidance was intended to help explain how agencies of the federal government should analyze the environmental effects of GHG emissions and climate change when they describe the environmental effects of a proposed agency action in accordance with Section 102 of NEPA and the CEQ Regulations for Implementing the Procedural Provisions of NEPA, 40 CFR 1500–1508. The guidance affirmed the requirements of the statute and regulations and their applicability to GHGs and climate change impacts. CEQ proposed to advise federal agencies that they should consider opportunities to reduce GHG emissions caused by proposed federal actions, adapt their actions to climate change impacts throughout the NEPA process, and address these issues in their agency NEPA procedures.

The guidance advised federal agencies to consider whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public. The guidance identified a "reference point" of 25,000 metric tons of direct CO_2-equivalent GHG emissions as an "indicator" that the proposed federal action's anticipated GHG emissions warrant detailed consideration in a NEPA review. For indirect GHG emissions (i.e., GHG emissions that have a causal nexus to, but are not directly emitted by, or the direct result of, the project), the guidance did not propose a reference point indicating when such indirect emissions are significant, and cautioned that any consideration of indirect GHG emissions needed to recognize the limits of feasibility in evaluating upstream and downstream effects of proposed federal actions.

The guidance did not propose this reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, but rather as a minimum standard for reporting emissions under the CAA (CEQ 2010).

State Air Quality 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 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 2 details the current NAAQS and CAAQS, while Table 3 provides the Basin's attainment status with respect to federal and state standards.

In California, California Air Resources Board (CARB), which became part of the California Environmental Protection Agency (Cal/EPA) in 1991, is responsible for meeting the state requirements of the federal CAA, administering the CCAA, and establishing the CAAQS. The CCAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county levels.

California's Toxic Air Contaminants Regulations

California regulates toxic air contaminants (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. To date, CARB has identified 21 TACs, and has also adopted the EPA's list of HAPs as TACs. Since August 1998, DPM was added to the CARB list of TACs (CARB 1998). The Air Toxics Hot Spots Information and Assessment Act of 1987 requires that existing facilities that emit toxic substances above specified levels: (1) prepare a toxic emission inventory, (2) prepare a risk assessment if emissions are significant (i.e., 10 tons per year or on the Air District's Hot Spots Risk Assessment list), (3) notify the public of significant risk levels, and (4) prepare and implement risk reduction measures.

In September 2000, CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel Risk Reduction Plan) (CARB 2000). This plan outlines a comprehensive and ambitious program that includes the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators).

CARB has adopted several regulations that will reduce diesel emissions from in-use vehicles and engines throughout California. In some cases, the particulate matter reduction strategies also reduce smog-forming emissions such as NO_X.

As an ongoing process, CARB reviews air contaminants and identifies those that are classified as TACs. CARB also continues to establish new programs and regulations for the control of TACs, including DPM, as appropriate.

California Climate Change Policy

Global Warming Solutions Act of 2006 (AB 32)

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, the goal of which is to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80% below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating CARB to create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

In response to the state's efforts to reduce GHG emissions, the secretary of Cal/EPA created the Climate Action Team (CAT), which, in March 2006, published the first *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (2006 CAT Report). The 2006 CAT Report includes a list of strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies to ensure that the governor's targets are met with the existing authority of the agencies. In addition, Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including recommendations made by the state's CAT.

In consultation with CARB and the California Public Utilities Commission (CPUC), the California Energy Commission (CEC) is currently establishing a GHG emissions performance standard for local, publicly owned electric utilities (pursuant to Senate Bill [SB] 1368). This standard will limit the rate of GHG emissions to a level that is no higher than the rate of emissions of GHGs for combined-cycle natural gas baseload generation.

AB 32 Draft Scoping Plan

A scoping plan for AB 32 (CARB 2008) was adopted by CARB in December 2008 that identifies measures to reduce GHG emissions to 1990 levels, which is approximately 30 percent less than business-as-usual (BAU) emission levels projected for 2020, or about 15 percent less than current levels as they were in 2008. The scoping plan includes GHG reduction strategies in the following focus areas: a cap-and-trade program with other western states; vehicle fuel economy; building energy efficiency; renewable power sources; carbon intensity of transport fuels; agriculture, forestry, mass transit, industrial sources; water; waste; and recycling. The scoping plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It requires CARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHGs by 2012. The complete AB 32 Scoping Plan as well as additional information about individual programs can be found through the AB 32 Scoping Plan web site (http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm).

Senate Bill 97

SB 97 requires the Office of Planning and Research (OPR) to prepare guidelines to submit to the California Natural Resources Agency regarding feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. The agency adopted amendments to the State CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010. The adopted guidelines recommend quantification of GHG emissions, assessment of their significance, and adoption of feasible mitigation of GHG emissions when significant impacts are identified.

Assembly Bill 1493

AB 1493 (Pavley), enacted on July 22, 2002, requires CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB apply to 2009 and later vehicles. CARB estimates that the regulation will reduce climate change emissions from the light-duty passenger vehicle fleet by 18 percent in 2020 and 27 percent in 2030 (CARB 2004).

Executive Order S-01-07

Executive Order S-01-07 was enacted by Governor Schwarzenegger on January 18, 2007. Essentially, the order mandates the following: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 and (2) that a low-carbon fuel standard (LCFS) for transportation fuels be established in California.

Regional Regulations

South Coast Air Quality Management District

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is a subregion of SCAQMD's jurisdiction. While air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources, control programs for area sources and indirect sources, a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified (i.e., previously permitted) emissions sources, and transportation control measures.

SCAQMD adopted a comprehensive AQMP update, the 2007 AQMP for the Basin, 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 Basin pertaining to the attainment of the federal air quality standards. Additionally, the plan addresses the significant amount of reductions needed, as well as the urgent need to identify additional strategies, especially with respect to mobile sources, to meet federal criteria pollutant standards within the timeframes allowed under the federal CAA.

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules would apply to construction and operation of the Glen Mor 2 project. For example, SCAQMD Rule 403 requires implementation of best available fugitive dust control measures during active operations that may generate fugitive dust emissions (e.g., from on-site earthmoving activities, construction/demolition activities, or the movement of construction equipment on paved and unpaved roads).

SCAQMD published the *CEQA Air Quality Handbook* (November 1993) to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports (EIRs). The applicable sections were used extensively in the preparation of this report. SCAQMD published two additional guidance documents, *Localized Significance Threshold Methodology for CEQA Evaluations* (June 2003) and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (October 2006), for evaluating localized effects from emissions during construction and operations. SCAQMD also published the *Interim CEQA GHG Significance Threshold* (October 2008), which provides guidance for evaluating the cumulative effects of GHG emissions from construction and operation on climate change. All were used in the preparation of this analysis.

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 relating 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 prepared the Regional Comprehensive Plan and Guide (RCPG) for the SCAG region. The Growth Management and Regional Mobility chapters of the RCPG form the basis for the land use and transportation components of the AQMP. These chapters are used in the preparation of air quality forecasts, and they were also used in the consistency analysis included in the AQMP.

SCAQMD Interim CEQA Greenhouse Gas Threshold

SCAQMD released its interim GHG significance thresholds in October 2008. Its governing board adopted the staff proposal on December 5, 2008. The draft GHG significance thresholds use a tiered approach. In some cases, multiple approaches are suggested to determine 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, then it moves on to the next tier.
- Tier 2: If the project is consistent with a local GHG reduction plan, it is not significant for GHG emissions. If it is not consistent with a local GHG plan or there is no approved plan, the project moves on to Tier 3.
- Tier 3: Projects are screened based on prescribed thresholds. The proposed thresholds are 10,000 metric tons of CO_2 equivalent per year ($MTCO_2e$/yr) for industrial and 3,000 $MTCO_2e$/yr for commercial and residential projects. Projects that are expected to be below these thresholds are still required to include energy-efficiency components (see the explanation of CO_2e below).
- Tier 4: 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 (defined as 30 years). For projects that are unable to purchase sufficient offsets, incorporate design features or implement GHG reduction measures to reduce GHG emission impacts to levels 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 the 10,000 $MTCO_2e$/yr significance determination threshold for industrial projects for which SCAQMD is the lead agency. However, the GHG significance determination thresholds above have not yet been adopted by the SCAQMD Board of Directors for other projects.

Existing Conditions

Description of Criteria Pollutants

Air quality studies generally focus on the pollutants listed below.

Ozone

O_3 is a colorless, toxic gas and the chief component in urban smog. It enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. It also damages vegetation by inhibiting their growth. Although O_3 is not directly emitted, it forms in the atmosphere through a photochemical reaction between reactive organic gases (ROGs) and NO_X in the presence of sunlight. O_3 is present in relatively high concentrations within the Basin. However, the damaging effects of photochemical smog are generally related to the concentration of O_3. Meteorology and terrain play major roles in the formation of O_3. Ideal smog conditions occur during summer and early autumn as well as on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile.

Organic Gases—Precursors to Ozone

There are several subsets of organic gases, including ROGs and volatile organic compounds (VOCs). Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. ROGs include all hydrocarbons except those exempted by CARB. Therefore, according to state rules and regulations, ROGs are a set of organic gases. VOCs are similar to ROGs in that they include all organic gases except those exempted by federal law. Both VOCs and ROGs are emitted from incomplete combustion of hydrocarbons or other carbon-based fuels. Engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint. In this analysis, the terms ROG and VOC are used interchangeably to refer to hydrocarbons that are precursors to the formation of O_3.

The primary health effects related to hydrocarbons result from the formation of O_3 and its related health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate NAAQS or CAAQS for ROGs. Carcinogenic forms of ROGs are considered to be TACs, which are described below. An example is benzene, which is a carcinogen.

Carbon Monoxide

CO is a colorless and odorless gas that can interfere with the transfer of oxygen to the brain. It can cause dizziness and fatigue and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhaust releases most of the CO in urban areas. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions combine with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest CO concentrations in Riverside County are typically recorded during the winter.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a brownish gas that irritates the lungs. It can cause breathing difficulties at high concentrations. Similar to O_3, NO_2 is not directly emitted but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to the formation of O_3. NO_2 also contributes to the formation of PM10 (see discussion of PM10 below). At atmospheric concentrations, NO_2 is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increases in bronchitis in children (2 and 3 years old) have also been observed at concentrations below 0.3 parts per million (ppm).

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air. This can include particles from include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM10 and PM2.5 represent fractions of particulate matter. PM10 refers to particulate matter less than 10 microns in diameter, about one-seventh the thickness of a human hair. PM2.5 refers to particulate matter that is 2.5 microns or less in diameter, roughly one twenty-eighth the diameter of a human hair. Major sources of PM10 include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industry; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM2.5 results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM10 and PM2.5 can be formed in the atmosphere from gases such as SO_2, NO_X, and VOCs.

PM10 and PM2.5 pose a greater health risk than larger particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract.

PM10 and PM2.5 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body; they can also transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Particles that are 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, whereas particles 2.5 microns in diameter or less are so tiny that they penetrate deeper into the lungs and damage tissues. Suspended particulates also damage and discolor the surfaces on which they settle. They also contribute to haze and reduce regional visibility.

Secondary PM2.5 Formation

Within the Basin, PM2.5 particles are both emitted into the atmosphere directly (i.e., primary particles) and formed through atmospheric chemical reactions from precursor gases (i.e., secondary particles). Primary PM2.5 includes diesel soot, combustion products, road dust, and other fine particles. Secondary PM2.5, which includes sulfates, nitrates, and complex carbon compounds, is formed from reactions with directly emitted NO_X, oxides of sulfur (SO_X), VOCs, and ammonia. Emissions of NO_X, SO_X, and VOCs generated from project-related construction and operations would contribute toward the formation of secondary PM2.5 some distance downwind of the emission sources. However, the air quality analysis herein focuses on the effects of direct PM2.5 emissions. This approach is consistent with the recommendations of SCAQMD (SCAQMD 2006).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a product of high-sulfur fuel combustion. The main sources of SO_2 are the coal and oil used in power stations, industrial applications, and domestic heating. Industrial chemical manufacturing is another source of SO_2. SO_2 is an irritant that attacks the throat and lungs. It can cause acute respiratory symptoms and diminish lung function in children. SO_2 can also cause plant leaves to turn yellow and erode iron and steel. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary-source emissions of SO_2 as well as the limits on the sulfur content of fuels. SO_2 concentrations have been reduced to levels that are well below the state and national standards, but further reductions are needed to comply with the standards for sulfate and PM10 emissions, of which SO_2 is a contributor.

Regional Context

The proposed project site is located within the Basin, an area covering approximately 6,745 square miles. It is 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 as well as the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

Typically, air quality in the Basin is worse from June to September, which is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This condition frequently reduces pollutant dispersion, thereby causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. O_3 concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

SCAQMD recently 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, a follow-up to previous air toxics studies in the Basin, is part of the SCAQMD Governing Board Environmental Justice Initiative (SCAQMD 2008a).

Over the past 30 years, substantial progress has been made in reducing air pollution levels in Southern California. For example, compared with previous studies of air toxics in the Basin, MATES III found a decreasing risk from air toxics exposure, with the population-weighted risk down by 17 percent from the analysis in MATES II. However, although there has been improvement in air quality with respect to air toxics, the risks are still unacceptable. DPM continues to dominate the risk from air toxics, and the portion of air toxic risk attributable to diesel exhaust is increasing compared with MATES II. The highest risks are found near the port, central Los Angeles, and transportation corridors. The results from the MATES III study underscore the need for a continuing focus on the reduction of toxic emissions, particularly from diesel engines, to reduce air toxics exposure.

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

Local Area Conditions

Local Climate

Data from the Western Regional Climate Center's Riverside Citrus Experiment Station were used to characterize climate conditions in the project vicinity. The Riverside Citrus Experiment Station is the nearest monitoring station to the project site (approximately 2.5 miles southwest of the Glen Mor 2 project site). The average project area summer (August) high and low temperatures are 94.4°F and 61.3°F, respectively, while the average winter (January) high and low temperatures are 66.6°F and 41.7°F, respectively. The average annual rainfall is 9.86 inches.[1]

The wind monitoring station nearest to the project site is located approximately 5 miles to the northwest; therefore, data from the Riverside Wind Monitoring Station were used to characterize study area wind conditions. Wind patterns in the project vicinity display a nearly unidirectional

[1] Western Regional Climate Center. California Climate Summaries. Riverside Citrus Experiment Station, California (047473). Available: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7473>. Accessed: December 7, 2010.

flow, primarily from the northwest, at an average speed of 4.41 mph. Calm wind conditions are present 12 percent of the time.[2]

Existing Pollutant Levels at Nearby Monitoring Station

SCAQMD has divided the Basin into air monitoring areas. The district maintains a network of air quality monitoring stations throughout the Basin. The project site is located in the Metropolitan Riverside Monitoring Area (i.e., Source Receptor Area [SRA] No. 23). The nearest monitoring station to this area is the Riverside – Magnolia Monitoring Station, which is located within the City of Riverside (approximately 5 miles northwest of the project site). Criteria pollutants monitored at this station include CO, NO_2, and PM2.5. The nearest station within the same General Forecast Area monitoring for O_3 and PM10 is the Riverside – Rubidoux Monitoring Station.

The monitoring data presented in Table 4 indicate the following pollutant trends: State 1-hour O_3 standards were exceeded an average of 37 times per year during the 3-year period. The national 8-hour O_3 standard was exceeded an average of 49 times per year during the 3-year period. CO and NO_2 concentrations are low, and 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 only exceeded once during the 3-year reporting period. The national PM2.5 standard was exceeded an average of five times during the 3-year period.

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[2] California Air Resources Board. 2003. Meteorological Wind Roses. Available: <www.arb.ca.gov/toxics/harp/met/WindRoses.ppt>. Accessed: December 7, 2010.

Table 4. Air Quality Data from Riverside – Magnolia Monitoring Station (CARB 33146) and Riverside – Rubidoux Monitoring Station (CARB 33144)

Pollutant Standards	2007	2008	2009
Ozone (O_3) – Rubidoux Station			
State standard (1-hour average = 0.09 ppm)			
National standard (8-hour average = 0.075 ppm)			
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			
State standard (8-hour average = 9.0 ppm)			
National standard (8-hour average = 9 ppm)			
Maximum concentration 8-hour period (ppm)	2.16	1.93	1.96
Days state/national 8-hour standard exceeded	0	0	0
Nitrogen Dioxide (NO_2) – Magnolia Station			
State standard (1-hour average = 0.18 ppm)			
Maximum 1-hour concentration	—	0.086	0.080
Days state standard exceeded	0	0	0
Suspended Particulates (PM10) – Rubidoux Station			
State standard (24-hour average = 50 µg/m³)			
National standard (24-hour average = 150 µg/m³)			
Maximum state 24-hour concentration	114.0*	108.0	75.0
Maximum national 24-hour concentration	118.0*	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 (PM2.5) – Magnolia Station			
National standard (24-hour average = 35 µg/m³)			
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 $\mu g/m^3$, respectively. However, these concentrations were eliminated when a particular day was deemed an exceptional event because of a wildfire and a high wind event.

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

Existing Health Risk in the Surrounding Area

According to the most current SCAQMD inhalation cancer risk data (MATES III Carcinogenic Interactive Map), the project area is located within a cancer risk zone of approximately 616 in one million (SCAQMD 2009b). This is largely because of the proximity of Interstate 215, State Routes 60 and 91, and an existing rail line, all of which are within 2.5 miles of the project site. For comparison, the average cancer risk in the Basin is 1,194 per million. The average risk in the project area is substantially lower.

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), the on-campus recreational fields to the north, residential land uses to the east, and the Apple Tree Learning Center and Child Day Care, a private school, on the southeast corner of Big Springs Road and Watkins Drive.

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

State Greenhouse Gas Emissions

According to EPA, a GHG is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere, thereby maintaining the earth's surface temperature at a higher level than it would be in the absence of GHGs. GHGs include water vapor, O_3, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), halogenated chlorofluorocarbons (HCFCs), perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs). Naturally occurring GHGs include water vapor, CO_2, CH_4, N_2O, and O_3. Human activities add to the levels of most of these naturally occurring gases.

To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas, CO_2. Generally, GHG emissions are quantified in terms of metric tons of carbon dioxide equivalents emitted per year. GHGs are compared in terms of their respective global warming potential (GWP) (i.e., the warming capacity per molecule given an atmospheric lifetime of 100 years). The Intergovernmental Panel on Climate Change (IPCC) defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e, which compares the gas in question with that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1). The GWP of other gases relevant to this analysis is 21 for CH_4 and 310 for N_2O. Note that typical land use development projects, those similar to the proposed project, are not major contributors of the other GHGs (e.g., HCFCs, PFCs, and HFCs). As such, they are not included in the project analysis contained herein.

When compared with nations of the world and other U.S. states, California is the 12th- to 16th-largest emitter of CO_2 and responsible for approximately 2 percent of the world's CO_2 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) (CARB 2009). Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion, among other sources. CH_4, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO_2 include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2006 totaled approximately 483.87 million metric tons (MMT) in CO_2e. CARB estimates that 2006 statewide GHG emissions were 483.87 $MMTCO_2e$, while in 1990 they were 433.29 $MMTCO_2e$.

Climate Change Impacts on California

Scientists believe that increases in the globally averaged atmospheric concentration of GHGs will cause the lower atmosphere to warm and, in turn, induce a myriad of changes to the global climate system. These large-scale changes 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, Cal/EPA, the University of California system, and other institutions 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, that could last longer and become more frequent;
- 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, thereby affecting water supplies and winter recreation;
- potential increase in the severity of winter storms, thereby affecting peak streamflows and flooding;
- changes in growing-season conditions that could affect California agriculture, thereby 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 BAU scenario, as explained below, is expected to increase. GHG emissions in California are attributable to human activities associated with industry/manufacturing, utilities, transportation, residential and agricultural activities (CEC 2006), as well as natural processes.

Changes similar to those noted above for California would also occur in other parts of the world, with regional variations in resources affected and vulnerability to adverse effects.

Note that for reference herein, BAU is defined as "the projection of GHG emissions at a future date based on current technologies and regulatory requirements in the absence of other reductions." In effect, BAU represents the CEQA no-project scenario (CAPCOA 2008).

Significance Thresholds

Given the Appendix G of the State CEQA Guidelines, the proposed project would have a potentially significant effect on air quality if it would

- conflict with or obstruct implementation of the applicable air quality management plan,
- violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment status under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors),
- expose sensitive receptors to substantial pollutant concentrations, or
- create objectionable odors affecting a substantial number of people.

In addition, the proposed project would have a potentially significant effect related to GHG emissions if it would

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or
- conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The State CEQA Guidelines also state that the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the determinations above.

Given SCAQMD's regulatory role in the Basin, the significance thresholds and analysis methodologies outlined in SCAQMD's *CEQA Air Quality Handbook* (as updated per the district's web site), *Localized Significance Threshold Methodology for CEQA Evaluations* guidance document, and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance document were used in evaluating project impacts.

Construction Emissions

According to criteria set forth in SCAQMD's *CEQA Air Quality Handbook*, *Localized Significance Threshold Methodology for CEQA Evaluations* guidance document, and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance document, the project would have a significant impact on construction emissions if either of the following were to occur:

- Regional emissions from both direct and indirect sources exceed any of the following SCAQMD-prescribed threshold levels: (1) 75 pounds a day for ROG, (2) 100 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, and (5) 55 pounds per day for PM2.5; or

- Localized emissions from on-site construction equipment and site disturbance activity exceed any of the following SCAQMD-prescribed threshold levels: (1) 270 pounds per day for NO_X, (2) 1,577 pounds per day for CO, (3) 13 pounds per day for PM10, and (4) 8 pounds per day for PM2.5.[3]

Operational Emissions

According to criteria set forth in SCAQMD's *CEQA Air Quality Handbook*, the project would have a significant impact with regard to operational emissions if any of the following were to occur:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD-prescribed threshold levels: (1) 55 pounds a day for ROG, (2) 55 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, and (5) 55 pounds per day for PM2.5 (SCAQMD 1993 and 2006).
- Localized emissions from on-site sources exceed any of the following SCAQMD-prescribed threshold levels: (1) 270 pounds per day for NO_X, (2) 1,577 pounds per day for CO, (3) 4 pounds per day for PM10, and (4) 2 pounds per day for PM2.5.[4]
- The project would cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively, at nearby sensitive receptors.[5]

Toxic Air Contaminants

According to guidelines provided in SCAQMD's *CEQA Air Quality Handbook*, the project would have a significant impact from TACs if

- some TACs increase non-cancer health risks because of short-term (acute) or long-term (chronic) exposures. The screening risk assessment for those TACs must estimate the acute and/or chronic hazard index, as applicable. Emissions sources are subject to a cancer risk threshold of 10 in one million (1.0×10^{-5}), or an acute or chronic hazard index of 1.0 (SCAQMD 1998);[6]

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[3] Derived from SCAQMD Localized Significance Threshold Tables, SRA No. 23 (Metropolitan Riverside), 5-acre site, 25-meter receptor distance.

[4] Derived from SCAQMD Localized Significance Threshold Tables, SRA No. 23 (Metropolitan Riverside), 5-acre site, 25-meter receptor distance.

[5] Where the CO standard is exceeded at an intersection, a project would result in a significant impact if the incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard or 0.45 ppm for the 8-hour CO standard.

[6] SCAQMD Risk Assessment Procedures for Rules 1401 and 212, November 1998. TAC analysis typically focuses on the effects of permanent stationary sources and not on temporary construction sources. Acute health risks resulting from short-term construction emissions essentially are addressed by analyzing a project's impacts pursuant to localized thresholds for criteria pollutants. Accordingly, SCAQMD does not offer guidance specific to analyzing health risks due to short-term acute exposure to construction emissions, nor does the California Office of Environmental Health Hazard Assessment. Although construction-related diesel emissions encompass additional TAC pollutants that are not covered by criteria pollutant analysis, diesel-related health risk is a long-term issue and not a short-term one, and diesel impacts are typically analyzed over a 70-year exposure period, which is beyond the scope of Glen Mor 2 project construction.

- the presence of hazardous materials associated with on-site stationary sources results in an accidental release of TACs or acutely hazardous materials, thereby posing a threat to public health and safety; or
- the project would be occupied primarily by sensitive individuals and located within 0.25 mile of an existing facility that emits TACs, which could result in a health risk from the pollutants identified in Rule 1401 (SCAQMD 1993).

Climate Change/Greenhouse Gas Emissions

To date, no quantitative emission thresholds or similar criteria have been established to evaluate the impact of a single project on global climate. In the absence of quantitative emissions thresholds, consistency with adopted programs and policies is used by many jurisdictions to evaluate the significance of impacts. As discussed above, AB 32 calls for the reduction of GHG emissions to 1990 levels by 2020. This reduction qualitatively equates to a 28.5 percent reduction over BAU conditions.

Methodology

Construction

Assumptions regarding the construction equipment to be used during each phase were based on the scheduling information ascertained via communications with the project design team's construction management specialist. Construction activities would include excavating 30,000 cubic yards of soil from the site and hauling it 2.6 miles (one way) to a disposal site on campus lands just west of Interstate 215. Peak daily hauling trips were estimated at 178. Construction-related emissions would be composed of fugitive dust emissions from demolition and site disturbance activities (including site grubbing and excavation); combustion exhaust emissions from on-site construction equipment, haul truck trips, and workers' trips (commuting); and fugitive off-gassing emissions (ROG) from the application of architectural coatings and asphalt paving.

Mass daily combustion emissions and off-gassing emissions were compiled using URBEMIS 2007 (version 9.2.4), which is an emissions estimation/evaluation model developed by CARB and based, in part, on SCAQMD's *CEQA Air Quality Handbook* guidelines and methodologies. Mass daily emissions related to fugitive dust were estimated using calculations in SCAQMD's *CEQA Air Quality Handboo*k (SCAQMD 1993). A complete listing of the construction equipment by phase, construction phase-duration assumptions, and changes to modeling default values used in this analysis is included within the URBEMIS 2007 printout sheets provided in Appendix A of this technical report.

Note that SCAQMD has developed an approach to addressing both the regional and localized impact of emissions. Regional emission thresholds have been developed for all criteria pollutants (ROG, CO, NO_X, SO_X, PM10, and PM2.5). However, localized thresholds have been developed only for those criteria pollutants of greatest concern during construction activities (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 2008b).

The analysis contained herein takes into consideration the UCR Long-Range Development Plan (LRDP) EIR Programs and Practices and Mitigation Measures, which include measures related to reducing air quality impacts associated with emissions from project construction and operation.

Operations

The URBEMIS 2007 software was also used to compile the mass daily emissions estimates 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). Emission estimates assume 232 apartment-style units, which were run as low-rise apartments in URBEMIS. Trips rates were adjusted to match the daily trips presented in the traffic report (Kunzman Associates 2010). In addition to the 232 apartment-style units, the project would also include other land use improvements that would result in emissions. As such, the land uses associated with resident services and the community building, food emporium, and executive retreat were included in the URBEMIS and energy-related calculations. Because project-related motor vehicle trips were accounted for in the apartment calculations, the trip rates for those land uses were assumed to be the lowest allowed by URBEMIS (e.g. 0.01 trip per thousand square feet). The primary purpose for their inclusion is to account for associated area-source and energy-related emissions, primarily from space/water heating, consumer products, periodic application of architectural coatings, and electricity consumption.

Within URBEMIS, a site-specific operational fleet mix was used based on the traffic report for the LDRP EIR. The analysis takes into account pass-by trips, which assumes that a certain percentage of total trips are "made as intermediate stops on the way from an origin to a primary destination" (Jones & Stokes Associates 2007). The default pass-by percentage for residential land uses in URBEMIS is 5 percent. Area-source emissions were compiled using URBEMIS 2007 default assumptions for similar housing projects, with the assumption that there would be no fireplaces and all land uses would use natural gas instead of electricity for on-site heating. Criteria pollutant emissions associated with the production and consumption of energy (electricity and natural gas) were calculated using emissions factors from SCAQMD's *CEQA Air Quality Handbook* (appendix to Chapter 9). Similar to those for construction activities, SCAQMD has developed both regional and localized emission thresholds for operations.

Local area CO concentrations for roadways were evaluated using the CALINE-4 line-source dispersion model developed by the California Department of Transportation (Caltrans), combined with EMFAC2007 emission factors. The analysis of roadway CO impacts followed the protocol recommended by Caltrans and published in the document titled *Transportation Project-Level Carbon Monoxide Protocol* (1997). It is also consistent with the procedures identified through the SCAQMD's CO modeling protocol. 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 travel within the parking structure, assuming that all parking spaces (597) are occupied and the vehicles have a cold start, idle for 1 minute, and travel 1 mph across the maximum length of the three-story parking structure within the peak hour. This represents a conservative approach in that all cars within the parking structure cold start and travel the maximum possible distance before exiting within a given hour. All emissions were treated as a single volume source, with SCREEN3 centered at the second level of the structure and receptors placed 3 to 500 meters from the parking structure. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

Note that the background CO concentrations used in the intersection and parking structure CO analysis are different from those presented in Table 4. The background CO concentrations to be used for this analysis are provided in SCAQMD's projected future-year 1- and 8-hour concentrations, which are higher than the CO concentrations presented in Table 4 (SCAQMD 2005).

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.

Climate Change/Greenhouse Gas Emissions

Project-related GHG emissions were estimated using the same URBEMIS 2007 model runs as above (for construction and operations) in combination with the California Climate Action Registry's (CCAR's) General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, version 3.1 (CCAR 2009). GHG emissions from off-road construction and on-road mobile- and area-source emissions were calculated by the following methods: 1) The URBEMIS 2007 software was used to estimate CO_2 emissions and, 2) CH_4 and N_2O emissions were estimated using the calculation formulas provided in the General Reporting Protocol (CCAR 2009). Construction emissions would be amortized over the life of the project, defined as 30 years, added to the operational emissions, per SCAQMD guidance (SCAQMD 2008). GHG emissions from electricity, natural gas, and water consumption were calculated using the energy-related emissions factors from the General Reporting Protocol (CCAR 2009). Electricity and natural gas consumption rates were based on rates found in SCAQMD's *CEQA Air Quality Handbook* (SCAQMD 1993). The level of water consumption was assumed to be 70 gallons per student per day, which is based on the LRDP EIR. Indirect energy associated with water supply, conveyance, treatment, and distribution, as well as wastewater treatment, was estimated using the electricity-related consumption rates (in kilowatt-hours per million gallons) provided by CEC (Navigant Consulting 2006).

Air Quality Impact Analysis

Construction Impacts

Regional Construction Impacts

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and the effects of vehicle trips generated by construction workers who would travel to and from the project site. In addition, fugitive dust emissions would result from excavation and other construction activities. Mobile-source emissions, primarily NO_X, would result from the use of diesel-powered construction equipment, such as graders, bulldozers, wheeled loaders, and excavators.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources. Additionally, this project would entail over-excavation of on-site earth material and re-compaction to create suitable conditions for building foundations. Assumptions regarding the construction equipment to be used during each phase are based on scheduling information ascertained via communications with the project design team's construction management consultant (Barnhart-Balfour Beatty). A complete listing of the construction equipment by phase, construction phase-duration assumptions, and changes to modeling default values used in this analysis is included within the URBEMIS 2007 printout sheets provided in Appendix A of this report.

The amount, duration, and intensity of construction activity could have a substantial effect on the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. Overall, construction is anticipated to start in July 2011 and be completed by June 2013. However, the project's construction schedule has not yet been definitively determined. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on an expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner.

Table 5, below, provides a conservative estimate of project construction emissions. As shown therein, short-term emissions during construction would exceed SCAQMD regional significance thresholds. As such, mitigation measures are necessary.

Table 5. Conservative Estimate of Regional Construction Emissions (pounds per day)

Phase	ROG	NO_X	CO	SO_X	PM10[a]	PM2.5[a]
Clear/Grub/Demo (7/1/2011 – 9/30/2011)	8.9	83.3	40.1	< 0.1	56.1	14.5
Parking Garage Over-excavation/Re-compaction (7/15/2011 – 8/10/2011)	7.8	66.4	32.2	< 0.1	9.5	4.1
Building Over-excavation/Re-compaction (8/11/2011 – 9/6/2011)	7.8	66.4	32.2	< 0.1	11.5	4.5
Parking Garage Construction (8/11/2011 – 5/30/2012)	6.4	47.7	40.2	< 0.1	2.7	2.4
Miscellaneous Grading (8/30/2011 – 12/31/2012)	2.9	23.5	12.9	< 0.1	10.6	3.1
Utilities Trenching (9/1/2011 – 3/30/2013)	2.0	13.8	9.4	< 0.1	1.0	0.9
Building Construction (9/10/2011 – 2/28/2013)	9.8	70.2	52.8	< 0.1	4.6	4.2
Concrete Phase (9/15/2011 – 5/30/2013)	9.3	67.0	50.7	< 0.1	3.7	3.3
Paving (4/1/2013 – 6/1/2013)	3.8	25.3	15.7	< 0.1	1.6	1.5
Maximum Project Emissions[b]	**39.2**	**305.5**	**206.1**	**< 1**	**78.7**	**28.3**

Phase	ROG	NO_X	CO	SO_X	PM10[a]	PM2.5[a]
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes:

URBEMIS 2007 output sheets and emissions calculation worksheets are included in Appendix A.

[a] Fugitive PM10 and PM2.5 emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require no visible dust to be present beyond the site boundaries. A copy of Rule 403 is provided in Appendix A.

[b] 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 work.

Mitigation Measures

In addition to the measures found in the LRDP EIR programs and practices and mitigation measures, the mitigation measures below are prescribed to reduce construction-period emissions.

Mitigation Measure AQ-1: Construction-period engine/equipment emissions

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

Mitigation Measure AQ-2: Construction-period engine/equipment oxides catalyst

During project construction, the UCR Office of Design and Construction will ensure that all construction contracts will 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.

Residual Impacts

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce NO_X emissions from all on-site off-road construction equipment by 73 percent, on average; ROG emissions by 76 percent; and PM10 and PM2.5 emissions by 58 percent. The average reduction in NO_X emissions for all on-road heavy-duty vehicles would be 40 percent. The mitigated emissions for the proposed project are provided in Table 6. As shown therein, regional emissions of NO_X would be reduced to a level that would be less than significant. As such, impacts would be less than significant with mitigation.

Note that NO_X emissions would be reduced to less than significant, albeit by a minor amount. It is worth noting that the construction analysis contained herein and summarized in Tables 5 and 6 is conservative in that the maximum amount of construction activity overlaps with the maximum amount of soil hauling, which may not actually take place.

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

Phase	ROG	NO_X	CO	SO_X	PM10[a]	PM2.5[a]
Clear/Grub/Demo (7/1/2011 – 9/30/2011)	3.7	31.1	40.1	< 0.1	54.5	13.0
Parking Garage Over-excavation/Re-compaction (7/15/2011 – 8/10/2011)	1.9	18.0	32.2	< 0.1	7.8	2.5
Building Over-excavation/Re-compaction (8/11/2011 – 9/6/2011)	1.9	18.0	32.2	< 0.1	9.8	2.9
Parking Garage Construction (8/11/2011 – 5/30/2012)	2.3	17.4	40.2	< 0.1	1.4	1.2
Miscellaneous Grading (8/30/2011 – 12/31/2012)	0.7	6.4	12.9	< 0.1	9.9	2.4
Utilities Trenching (9/1/2011 – 3/30/2013)	0.5	3.8	9.4	< 0.1	0.4	0.4
Building Construction (9/10/2011 – 2/28/2013)	3.1	23.5	52.8	< 0.1	2.2	1.9
Concrete Phase (9/15/2011 – 5/30/2013)	3.0	22.7	50.7	< 0.1	1.8	1.6
Paving (4/1/2013 – 6/1/2013)	1.1	7.3	15.7	< 0.1	0.7	0.6
Maximum Project Emissions[b]	**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:

URBEMIS 2007 output sheets and emissions calculation worksheets are included in Appendix A.

[a] Fugitive PM10 and PM2.5 emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require no visible dust to be present beyond the site boundaries. A copy of Rule 403 is provided in Appendix A.

[b] 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 work.

Local Construction Impacts

SCAQMD has developed a set of emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction-period emissions. If the on-site emissions from proposed construction activities are below the LST emissions levels found in the LST mass rate look-up tables for the project site's SRA, then project emissions would not have the potential to cause a significant localized air quality impact.

When quantifying emissions for LST analysis, only emissions that occur on site are considered. Consistent with SCAQMD LST guidelines, emissions related to off-site delivery/haul truck activity and employee trips are not considered in the evaluation of localized impacts.

The majority of construction activities would occur at the Glen Mor 2 project site. However, excavated soils would be deposited and stockpiled at an off-site disposal location, which is located more than 1,000 meters from the Glen Mor 2 project site. As such, construction-related emissions would affect different receptors. Therefore, construction-related emissions are presented separately according to project acreage and the distance to receptors.

A conservative estimate of the project's construction-period on-site emissions at the project and disposal sites is presented in Table 7 and Table 8, respectively. As shown in Table 7, short-term localized emissions during construction at the Glen Mor 2 site would exceed SCAQMD LSTs for PM10 and PM2.5. As such, mitigation measures are necessary. Short-term localized emissions during stockpiling at the disposal site would exceed not SCAQMD LSTs for PM10 and PM2.5. Thus, mitigation is not necessary.

Table 7. Worst-Case Localized Construction Emissions (pounds per day) without Mitigation at the Glen Mor 2 Project Site

Phase	ROG	NO_X	CO	SO_X	PM10[a]	PM2.5[a]
Clear/Grub/Demo (7/1/2011 – 9/30/2011)	6.8	57.2	27.9	—	33.6	9.0
Parking Garage Over-excavation/Re-compaction (7/15/2011 – 8/10/2011)	7.7	66.3	29.8	—	9.4	4.1
Building Over-excavation/Re-compaction (8/11/2011 – 9/6/2011)	7.7	66.3	29.8	—	11.5	4.5
Parking Garage Construction (8/11/2011 – 5/30/2012)	5.4	41.4	19.6	—	2.3	2.1
Miscellaneous Grading (8/30/2011 – 12/31/2012)	2.8	23.4	12.0	—	10.6	3.1
Utilities Trenching (9/1/2011 – 3/30/2013)	1.9	13.7	8.2	—	1.0	0.9
Building Construction (9/10/2011 – 2/28/2013)	8.8	64.0	32.3	—	4.2	3.9
Concrete Phase (9/15/2011 – 5/30/2013)	8.3	60.8	30.2	—	3.3	3.0
Paving (4/1/2013 – 6/1/2013)	3.7	24.6	13.2	—	1.6	1.4
Maximum Project Emissions[b]	**34**	**261**	**130**	**—**	**55**	**22**
Localized Significance Thresholds[c]	--	270	1,577	—	13	8
Exceed Threshold?	**NA**	**No**	**No**	**NA**	**Yes**	**Yes**

Notes:

URBEMIS 2007 output sheets and emissions calculation worksheets are included in Appendix A.

[a] Fugitive PM10 and PM2.5 emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require no visible dust to be present beyond the site boundaries. A copy of Rule 403 is provided in Appendix A.

[b] 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 work.

[c] 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 project area that could be under construction on any given day (5 acres).

Table 8. Worst-Case Localized Construction Emissions (pounds per day) without Mitigation at the Disposal Site

Phase	ROG	NO_X	CO	SO_X	PM_{10}[a]	PM_{25}[a]
Clear/Grub/Demo (stockpiling)	—	—	—	—	21	13
Localized Significance Thresholds[b]	—	601	3,158	—	186	45
Exceed Threshold?	**NA**	**No**	**No**	**NA**	**No**	**No**

Notes:

Emissions calculation worksheets are included in Appendix A.

[a] Fugitive PM10 and $PM2._5$ emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require no visible dust to be present beyond the site boundaries. A copy of Rule 403 is provided in Appendix A.

[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 (200 meters), and project area that could be under construction on any given day (1 acre).

Mitigation Measures

In addition to the measures found in the LRDP EIR programs and practices and mitigation measures, implement Mitigation Measures AQ-1 and AQ-2.

Residual Impacts

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce NO_X emissions from all on-site off-road construction equipment by 73 percent, on average; ROG emissions by 76 percent; and PM10 and PM2.5 emissions by 58 percent. Mitigated emissions for the proposed project are provided in Table 9. As shown therein, localized emissions of PM10 and PM2.5 remain above the SCAQMD LSTs because of fugitive dust emissions. No feasible mitigation measures exist to reduce fugitive dust emissions to the levels required by SCAQMD Rule 403. As such, construction-period impacts associated with local emissions of fugitive dust would be significant and unavoidable.

Table 9. Worst-Case Localized Construction Emissions (pounds per day) with Mitigation

Phase	ROG	NO_X	CO	SO_X	PM10[a]	PM2.5[a]
Clear/Grub/Demo (7/1/2011 – 9/30/2011)	1.6	15.4	27.9	—	32.0	7.5
Parking Garage Over-excavation/Re-compaction (7/15/2011 – 8/10/2011)	1.8	17.9	29.8	—	7.8	2.5
Building Over-excavation/Re-compaction (8/11/2011 – 9/6/2011)	1.8	17.9	29.8	—	9.8	2.9
Parking Garage Construction (8/11/2011 – 5/30/2012)	0.7	6.3	12.0	—	0.9	0.9
Miscellaneous Grading (8/30/2011 – 12/31/2012)	0.7	6.3	12.0	—	9.9	2.4
Utilities Trenching (9/1/2011 – 3/30/2013)	0.5	3.7	8.2	—	0.4	0.4
Building Construction (9/10/2011 – 2/28/2013)	2.1	17.3	32.3	—	1.8	1.6
Concrete Phase (9/15/2011 – 5/30/2013)	2.0	16.4	30.2	—	1.4	1.3
Paving (4/1/2013 – 6/1/2013)	1.0	6.6	13.2	—	0.7	0.6
Maximum Project Emissions[b]	**8**	**70**	**130**	—	**46**	**14**
Localized Significance Thresholds[c]	—	270	1,577	—	13	8
Exceed Threshold?	**NA**	**No**	**No**	**NA**	**Yes**	**Yes**

Notes:

URBEMIS 2007 output sheets and emissions calculation worksheets are included in Appendix A.

[a] Fugitive PM10 and PM2.5 emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require no visible dust to be present beyond the site boundaries. A copy of Rule 403 is provided in Appendix A.

[b] 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 work.

[c] The project site is located in SCAQMD SRA No. 23. These LSTs are based on the site location SRA, the 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).

Toxic Air Contaminants

The greatest potential for TAC emissions would be related to DPM emissions associated with heavy equipment operations during site grading activities. SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue because health risks related to diesel emissions result from chronic exposure, and not the acute exposure typically associated with construction activities (SCAQMD 2003). Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature (no more than 3 years). The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons because of the short-term nature of construction. As such, project-related toxic emissions impacts during construction would not be significant.

Operational Impacts

Regional Operations Impacts

Regional air pollutant emissions associated with project operations would be generated by 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 SCAQMD as regional stationary-source emissions. Electricity is produced at various locations in and outside of the Basin. Because it is often difficult to isolate where electricity is produced, these emissions are conservatively considered to occur within the Basin and be regional in nature. Criteria pollutant emissions associated with the production and consumption of electricity and natural gas 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, which multiplies an estimate of daily VMT by applicable EMFAC2007 emissions factors.[7] The URBEMIS 2007 model output and worksheets for calculating regional operational daily emissions are provided in Appendix A. As shown in Table 10, the project's net regional emissions would not exceed regional SCAQMD thresholds for all criteria pollutants. Therefore, regional operations emissions would result in a less-than-significant long-term regional air quality impact. No mitigation is required. This conclusion notwithstanding, the proposed project would pursue Leadership in Energy and Environmental Design (LEED) Gold certification, which would reduce the project's energy use and water consumption by a minimum of 10 percent and 20 percent, respectively. The project would also include the potential for on-site installation of solar-powered water heaters and photovoltaic panels on the parking garage roof. However, the use of solar energy was not included in the analysis herein.

Table 10. Estimate of Operational Emissions (pounds per day)

	ROG	NOX	CO	SOX	PM10	PM2.5
Proposed Project Emissions						
Mobile Source	23.1	18.6	226.6	0.3	49.2	9.3
Area Source	13.1	0.1	4.6	< 0.1	< 0.1	< 0.1
Natural Gas	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[a]	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:
URBEMIS 2007 output and energy emissions calculation worksheets are provided in Appendix A.
[a] Totals may not add because of rounding.

[7] *Daily VMT estimate derived by applying URBEMIS 2007 default trip generation and length estimates (per land use) to the proposed project's land uses.*

Local Operational Impacts

Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found close to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For the purpose of providing a conservative worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations. If impacts are less than significant close to congested intersections, impacts will also be less than significant at more distant sensitive-receptor locations.

Project traffic during the operational phase of the project would have the potential to create local area CO impacts. To ascertain the proposed project's potential to generate localized air quality impacts, the traffic impact analysis for the Glen Mor 2 Student Apartments Project (Kunzman Associates 2010) was reviewed to determine the potential for the creation of localized CO hot spots at congested intersection locations. SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when a project's trips cause vehicle-to-capacity (V/C) ratios to increase 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 impact analysis concluded that four intersections would operate at LOS C or worse if the V/C ratio increased by 2 percent or more (see Table 11). These intersections were analyzed for localized CO hot-spot impacts, using numbers provided in the traffic impact analysis for 2015, which is the LRDP planning horizon. 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's opening year of 2013.

Local area CO concentrations were projected using the CALINE 4 traffic pollutant dispersion model. The analysis of CO impacts followed the protocol recommended by Caltrans and published as *Transportation Project-Level Carbon Monoxide Protocol* (1997). It is also consistent with procedures identified through 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 would exceed federal or state CO standards.

The project's CO concentrations for AM and PM 1- and 8-hour levels in the LRDP planning year (2015) are presented in Table 10. As shown therein, the project would not have a significant impact related to 1- or 8-hour local CO concentrations from mobile-source emissions.

Because significant impacts would not occur at intersections with the highest traffic volumes adjacent to sensitive receptors, significant impacts are not anticipated to occur at any other locations in the study area. This is because the conditions that yield CO hot spots would be no worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors included in this analysis would not be significantly affected by CO emissions generated by the net increase in traffic that would occur under the project. Because the project would not cause an exceedance or exacerbate an existing exceedance of an ambient air quality standard, the project's localized operational air quality impacts would therefore be less than significant. No mitigation measures are necessary.

Table 11. LRDP Horizon (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:

CALINE4 dispersion model output sheets and EMFAC2007 emission factors are provided in Appendix A.

ppm = parts per million

[a] Peak-hour traffic volumes are based on the traffic impact analysis prepared for the project by Kunzman Associates, 2010.

[b] SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) + 2015 base traffic CO 1-hour contribution.

[c] SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) + 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) + 2015 base traffic CO 8-hour contribution.

[f] SCAQMD 2015 8-hour ambient background concentration (3.2 ppm) + 2015 with-project traffic CO 8-hour contribution.

CO concentrations associated with the parking structure were evaluated using EPA's SCREEN3 dispersion model, combined with EMFAC2007 emissions factors. This analysis includes all emissions from cold starting, idling, and travel within the parking structure, assuming that all parking spaces (597) are occupied and the vehicles have a cold start, idle for 1 minute, and travel 1 mph across the maximum length of the three-story parking structure within the peak hour. Receptors were placed at varying distances from the edge of the parking structure to determine the distance of maximum impact. If impacts are less than significant at the distance of maximum impact, then impacts will also be less than significant at all other receptor locations.

The project's CO concentrations for 1- and 8-hour levels at the parking structure are presented in Table 12. As described in the methodology, the parking structure was modeled as a volume source, with SCREEN3 centered at the middle of the second story. The distances shown in Table 12 are the distances from the edge of the parking structure on the ground floor. As shown therein, CO emissions disperse with distance, with maximum concentrations between 62 and 200 meters and little or no concentrations at greater distances. All modeled concentrations are below the respective thresholds. Therefore, the project would not have a significant impact related to 1- or 8-hour local CO concentrations from mobile-source emissions at the parking structure.

Table 12. 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 impact)	7.2	No	4.7	No

Notes:

CALINE4 dispersion model output sheets and EMFAC2007 emission factors are provided in Appendix A.

ppm = parts per million

[a] SCAQMD 2015 1-hour ambient background concentration (5.1 ppm) + 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) + 2015 with-project traffic CO 8-hour contribution.

With respect to the project's on-site emissions (related to area-source and on-site natural gas uses), Table 13 shows that on-site operations-period emissions would be below SCAQMD's LSTs for all criteria pollutants. Impacts from localized emissions would be less than significant. No mitigation is required.

Table 13. Estimate of Operations-Period Localized (on-site) Emissions

	NO_X	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. Model output sheets are provided in Appendix A.

[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).

Toxic Air Contaminants

SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulates (e.g., truck stops and warehouse distribution facilities) and 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.

The project would include two diesel generators to provide on-site electricity in the event of an emergency. Operation of these generators would be limited to monthly 10-minute test runs and emergency operation during a power outage. Accordingly, these generators would not be regular emitters of DPM. Because the proposed project would not contain sources of substantial amounts of DPM or other TACs, the proposed project does not warrant a health risk assessment. Potential project-generated air toxic impacts on surrounding land uses would be less than significant. No mitigation measures are necessary.

Climate Change/Greenhouse Gas Emissions

AB 32 identified the acceptable level of GHG emissions in California for 2020 to be 427 $MMTCO_2e$, which is the same as the 1990 GHG emissions level but approximately 28.5 percent less than 2020 BAU conditions (596 $MMTCO_2e$). To achieve GHG reductions, there will have to be widespread reductions of GHG emissions across California. Some reductions will need to come in the form of changes in vehicle emissions and gas mileage, changes in the sources of electricity, and increases in energy efficiency by existing facilities as well as other measures. The remainder of the necessary GHG reductions will need to come from requiring new facility development to have a lower carbon intensity than BAU conditions. Therefore, this analysis uses a threshold of significance that is in conformance with the state's goals.

Motor vehicle GHG emissions result from gasoline and diesel fuel combustion. Increased energy and water consumption result in increased GHG emissions associated with the burning of fossils fuels for energy production and the conveyance of water throughout the state. 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 contribute to global warming and the adverse global environmental effects thereof. Increased GHG emissions could also conflict with the AB 32 requirement to reduce statewide GHG emissions to 1990 levels by 2020.

On December 12, 2008, CARB approved the AB 32 Scoping Plan, which contains emissions-reduction measures that target the sources of GHG emissions, as called for in AB 32. The scoping plan has a range of GHG emissions-reduction measures, 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 regulation to fund the program.

The proposed project would include design features[8] and pursue LEED Gold certification, which would reduce the project's energy use and water consumption by a minimum of 10 percent and 20 percent, respectively, when compared with BAU. GHG emissions in 2020 associated with operation of the project under BAU conditions and implementation of CARB's AB 32 Scoping Plan reductions and project design features are provided in Table 14. Note that construction emissions are shown as an amortized total, per SCAQMD guidelines and as discussed above in the methodology, and added to operational emissions. As shown therein, with the inclusion of CARB's AB 32 Scoping Plan reductions and project design features for LEED certification, the proposed project would result in a less-than-significant impact.

Table 14. Estimate of Project-Related Greenhouse Gas Emissions (metric tons of CO_2e per year)

	2020 Business as Usual	AB 32 Scoping Plan Reductions	Project Design Reductions	2020 Emissions	Percent Reduction
Emission 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%
Construction (amortized)	199	—	—	199	—
Total Project	**7,658**	**(2,054)**	**(215)**	**5,390**	**30.4%**
AB 32 Goal					**28.5%**
Significant Impact?					**No**

Source: ICF 2010. Calculations are provided in the air quality appendix.

Although the new State CEQA Guidelines are silent on whether CEQA evaluations should address the potential impacts of climate change, a discussion of this topic is included below.

[8] *Project design features that would contribute to LEED certification would involve building orientation, space layout and shading for energy efficiency through passive solar design, building envelope materials and insulation for energy efficiency, solar domestic hot water system, photovoltaic system (optional), and low-flow plumbing fixtures for water efficiency.*

Climate change impacts in California include sea level rise, extreme heat events, increases in infectious diseases and respiratory illnesses, reduced snowpack and water supplies, and potential increases in the number of wildfires.

The project site is not expected to be inundated as a result of a predicted rise in sea level of up to 1.4 meters by 2100 (California Climate Change Center 2006). The project site is not located in an area that presents a wildfire risk and thus is not subject to such risks (see Section 3.7, Hazards and Hazardous Materials, of this EIR). While regional water supplies are subject to potential future climate change effects, which could affect both local and distant water supplies, each of the project's proposed residential units would incorporate water-efficiency measures to reduce per capita water demand, thereby helping to alleviate demand for scarce statewide water resources. In addition, the project would include LEED energy-efficiency measures to reduce energy consumption. The project would also include the option to incorporate solar energy, which would reduce the demand for GHG-emitting fossil fuels. Students and residents at Glen Mor 2 and UCR may be subject to a range of other potential climate change effects, including increased temperatures and heat-stress days, for example. However, the new residential housing on campus would not exacerbate those potential effects or create a particular hazard related to those potential effects. Therefore, the project would not result in significant exposure of property or persons to the potential effects of climate change. This impact is considered to be less than significant.

Project Consistency with Regional AQMP

The project site is located within the 6,600-square-mile Basin. SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the Basin is in nonattainment status (i.e., O_3, NO_2, PM10 and PM2.5). As such, the project would be subject to SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies, which are directed at reducing emissions and achieving ambient air quality standards. These strategies were developed, in part, according to regional population, housing, and employment projections prepared by SCAG.

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.[9] With respect to air quality planning, SCAG prepared the RCPG. The Growth Management and Regional Mobility chapters of the RCPG form the basis for the land use and transportation components of the AQMP. These chapters are used in the preparation of air quality forecasts, and they were also used in the consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections originating with county and city general plans and, with respect to this project, the LRDP, which anticipates growth in student enrollment and associated campus development.

The project represents growth anticipated in the LRDP and would not increase enrollment or otherwise induce on- or off-campus growth. Accordingly, pursuant to SCAQMD guidelines, it is considered consistent with the region's AQMP. As such, proposed 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.

[9] *SCAG serves as the federally designated metropolitan planning organization for the Southern California region.*

Cumulative Impacts

Criteria Pollutants

Cumulative air quality impacts throughout the Basin are taken into account by SCAQMD when the district reviews and revises 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, 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.

The project's contribution to the significant impact noted above during construction would exceed LSTs and be considered significant. Cumulative projects within the vicinity of the project include eight projects both on and off campus, as shown in Chapter 3 of the EIR. On-campus projects include the Barn Project, Environmental Health and Safety (EH&S) expansion, Student Recreation Center expansion, the East Campus Infrastructure Phase 2 Project, and LRDP Amendment 2 (UCR School of Medicine). Off-campus projects include an eight-lot residential subdivision, a 55-unit multifamily residential project, and the Riverside County Transportation Commission's Perris Valley Line Project.

Given the preliminary construction schedules for the cumulative projects listed above, it is possible that Glen Mor 2 construction may overlap with construction of three on-campus projects (i.e., the Barn, EH&S expansion, and the Student Recreation Center expansion) 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 the projects does overlap, the 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 PM2.5 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.

The proposed project would comply with SCAQMD's Rule 403 (fugitive dust control) during construction as well as all other adopted AQMP emissions-control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, the same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions-control measures) would be imposed on all projects Basin-wide, which would include all related projects. Nevertheless, because cumulative projects could overlap with project construction activities, cumulative impacts related to the localized effects of construction criteria pollutant emissions would be significant and unavoidable and, therefore, cumulatively considerable.

As discussed above, 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, 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.

GHG Emissions

Unlike criteria pollutant impacts, which are local and regional in nature, climate change 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 the emissions resulting from a single project. Rather, it is more appropriate to conclude that project-related GHG emissions will combine with emissions across California, the U.S., and the globe to contribute cumulatively to global climate change.

Although the proposed project would generate GHGs during construction and operation, GHG generation during construction would represent a one-time contribution, and GHG generated during operations would be partially offset by project design features to reduce the ongoing contribution of GHGs on climate change. With respect to the project, the amounts of construction- and operations-period GHG emissions that would result from development of the proposed project would be negligible on the global scale. The amount of emissions from the proposed project, 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 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 be less than significant.

References

California Air Resources Board (CARB). 2010. Federal and State Ambient Air Quality Standards. September

———. 2010. Top 4 Measurements and Days above the Standard. Available: <http://www.arb.ca.gov/adam/topfour/topfourdisplay.php>. Accessed: December 7, 2010.

———. 2010. Meteorological Wind Roses. Available: < www.arb.ca.gov/toxics/harp/met/WindRoses.ppt >. Accessed: December 7, 2010.

———. 2009. 2006 Greenhouse Gas Inventory Data. Available: <http://www.arb.ca.gov/cc/inventory/data/graph/graph.htm>.

———. 2008. Climate Change Scoping Plan. Available: http://www.arb.ca.gov/cc/scopingplan/scopingplan.html>. December.

———. 2004. Greenhouse Gas Emissions from Motor Vehicles. Available: <http://www.arb.ca.gov/regact/grnhsgas/grnhsgas.htm>. Last reviewed: April 28, 2008.

———. 2000. Diesel Risk Reduction Plan – Final. Available: <http://www.arb.ca.gov/diesel/documents/rrpapp.htm>. September.

———. 1998. Scientific Review Panel Findings on the report: "Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant" as adopted at the Panel's April 22, 1998 meeting. Available: <http://www.arb.ca.gov/toxics/dieseltac/combined.pdf>.

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 Climate Change Center (CCCC). 2006. Our Changing Climate: Assessing the Risks to California. July.

California Energy Commission (CEC). 2006. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. December.

Council on Environmental Quality (CEQ). 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. Memorandum. February 18.

Garza, Vicente J., Peter Graney, Daniel Sperling (1996) Transportation Project-Level Carbon Monoxide Protocol. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-96-01

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis: Summary for Policymakers. February.

Jones & Stokes Associates. 2007. Software User's Guide: URBEMIS2007 for Windows. Prepared for SCAQMD. November.

Kunzman Associates Inc., 2010. University of California Riverside – Glen Mor 2 Student Apartments Project Traffic Impact Analysis. December.

Navigant Consulting, Inc. 2006. Refining Estimates of Water-Related Energy Use in California. California Energy Commissions, PIER Industrial/Agricultural/Water End Use Energy Efficiency Program. CEC-500-2006-118.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook. November.

———. 2002. Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions.

———. 2003. Stakeholders' Working Group for Environmental Justice Enhancement (EJH) No. I-4 – Meeting Minutes. March 5.

———. 2005. Carbon Monoxide (CO) Concentrations. Available: <http://www.aqmd.gov/ceqa/handbook/CO/CO.html>. Last updated: March 11.

———. 2006. Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology. October.

———. 2007. Air Quality Management Plans. Available: http://www.aqmd.gov/aqmp/AQMPintro.htm>.

———. 2008a. Multiple Air Toxics Exposure Study (MATES III). September.

———. 2008b. Localized Significance Threshold Methodology for CEQA Evaluations. June.

———. 2009. MATES III Carcinogenic Risk Interactive Map. Available: http://www2.aqmd.gov/webappl/matesiii/. Accessed: December 7, 2010.

U.S. Environmental Protection Agency (EPA). 2009. Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Available: < http://www.epa.gov/climatechange/endangerment.html#findings >. December 15.

Western Regional Climate Center (WRCC). 2010. California Climate Summaries. Riverside Citrus Exp St, California (047473). Available: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7473>. Accessed: December 7, 2010.

White House. 2008. Fact Sheet: Energy Independence and Security Act of 2007. Available: <http://georgewbush-whitehouse.archives.gov/news/ releases/2007/12/20071219-1.html>.

Appendix A
Urbemis 2007 Version 9.2.4
Combined Summer Emissions Reports

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Los Angeles\3_Projects_Air Quality\UCR_Student_Housing\Analysis\UCR Glen Mor 2.urb924

Project Name: UCR Glen Mor 2

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	39.88	308.65	222.83	0.16	0.67	16.70	17.37	0.24	15.34	15.58	44,063.99
2012 TOTALS (lbs/day unmitigated)	28.88	208.78	174.11	0.12	0.53	11.75	12.28	0.19	10.79	10.98	34,132.33
2013 TOTALS (lbs/day unmitigated)	18.54	131.01	113.44	0.08	0.35	7.56	7.91	0.12	6.94	7.07	23,239.60

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.41	3.74	6.52	0.00	0.03	0.03	4,648.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	23.10	18.64	226.60	0.29	49.21	9.32	27,447.37

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	36.51	22.38	233.12	0.29	49.24	9.35	32,096.26

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 7/1/2011-7/14/2011 Active Days: 10	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Time Slice 7/15/2011-8/10/2011 Active Days: 19	16.68	149.67	72.27	0.04	0.16	6.74	6.90	0.05	6.20	6.25	17,225.20
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Mass Grading 07/15/2011-08/10/2011	7.75	66.41	32.21	0.00	0.01	2.93	2.94	0.01	2.69	2.70	7,294.92
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	7.67	66.27	29.78	0.00	0.00	2.92	2.92	0.00	2.69	2.69	6,984.00
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.14	2.44	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.92

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Time Slice 8/11/2011-8/29/2011 Active Days: 13	23.27	198.39	118.01	0.08	0.33	9.31	9.64	0.11	8.56	8.68	25,746.13
Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Mass Grading 08/11/2011-09/06/2011	7.75	66.41	32.21	0.00	0.01	2.93	2.94	0.01	2.69	2.70	7,294.92
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	7.67	66.27	29.78	0.00	0.00	2.92	2.92	0.00	2.69	2.69	6,984.00
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.14	2.44	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.92

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Time Slice 8/30/2011-8/31/2011 Active Days: 2	26.12	221.88	130.94	0.08	0.34	10.49	10.83	0.12	9.64	9.76	28,117.82
Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Mass Grading 08/11/2011-09/06/2011	7.75	66.41	32.21	0.00	0.01	2.93	2.94	0.01	2.69	2.70	7,294.92
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	7.67	66.27	29.78	0.00	0.00	2.92	2.92	0.00	2.69	2.69	6,984.00
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.14	2.44	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.92
Time Slice 9/1/2011-9/6/2011 Active Days: 4	28.09	235.67	140.38	0.09	0.34	11.49	11.83	0.12	10.56	10.68	29,690.32

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Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Mass Grading 08/11/2011-09/06/2011	7.75	66.41	32.21	0.00	0.01	2.93	2.94	0.01	2.69	2.70	7,294.92
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	7.67	66.27	29.78	0.00	0.00	2.92	2.92	0.00	2.69	2.69	6,984.00
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.14	2.44	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.92
Trenching 09/01/2011-03/30/2013	1.97	13.79	9.44	0.00	0.01	1.00	1.01	0.00	0.92	0.92	1,572.50
Trenching Off Road Diesel	1.93	13.72	8.22	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,417.04
Trenching Worker Trips	0.04	0.07	1.22	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46

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Time Slice 9/7/2011-9/9/2011 Active Days: 3	20.35	169.25	108.17	0.08	0.33	8.56	8.89	0.11	7.87	7.98	22,395.41
Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Trenching 09/01/2011-03/30/2013	1.97	13.79	9.44	0.00	0.01	1.00	1.01	0.00	0.92	0.92	1,572.50
Trenching Off Road Diesel	1.93	13.72	8.22	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,417.04
Trenching Worker Trips	0.04	0.07	1.22	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46

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Time Slice 9/12/2011-9/14/2011 Active Days: 3	30.36	240.55	166.55	0.12	0.50	13.08	13.59	0.17	12.02	12.20	32,861.02
Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Building 09/10/2011-02/28/2013	10.01	71.30	58.38	0.04	0.17	4.52	4.70	0.06	4.16	4.22	10,465.61
Building Off Road Diesel	8.82	63.98	32.27	0.00	0.00	4.20	4.20	0.00	3.86	3.86	6,505.52
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Trenching 09/01/2011-03/30/2013	1.97	13.79	9.44	0.00	0.01	1.00	1.01	0.00	0.92	0.92	1,572.50
Trenching Off Road Diesel	1.93	13.72	8.22	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,417.04
Trenching Worker Trips	0.04	0.07	1.22	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46
Time Slice 9/15/2011-9/30/2011 Active Days: 12	**39.88**	**308.65**	**222.83**	**0.16**	**0.67**	**16.70**	**17.37**	**0.24**	**15.34**	**15.58**	**44,063.99**

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Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Building 09/10/2011-02/28/2013	10.01	71.30	58.38	0.04	0.17	4.52	4.70	0.06	4.16	4.22	10,465.61
Building Off Road Diesel	8.82	63.98	32.27	0.00	0.00	4.20	4.20	0.00	3.86	3.86	6,505.52
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Building 09/15/2011-05/30/2013	9.52	68.10	56.28	0.04	0.17	3.61	3.79	0.06	3.32	3.38	11,202.98
Building Off Road Diesel	8.32	60.78	30.17	0.00	0.00	3.29	3.29	0.00	3.03	3.03	7,242.89
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 07/01/2011-09/30/2011	8.93	83.26	40.05	0.04	0.14	3.81	3.96	0.05	3.51	3.56	9,930.28
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	6.83	57.19	27.88	0.00	0.00	2.76	2.76	0.00	2.54	2.54	5,727.35
Mass Grading On Road Diesel	2.04	25.94	9.98	0.04	0.13	1.04	1.17	0.04	0.96	1.00	3,923.11
Mass Grading Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83

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Trenching 09/01/2011-03/30/2013	1.97	13.79	9.44	0.00	0.01	1.00	1.01	0.00	0.92	0.92	1,572.50
Trenching Off Road Diesel	1.93	13.72	8.22	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,417.04
Trenching Worker Trips	0.04	0.07	1.22	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46

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Time Slice 10/3/2011-12/30/2011 Active Days: 65	30.95	225.40	182.78	0.12	0.53	12.89	13.41	0.19	11.83	12.02	34,133.72
Building 08/11/2011-05/30/2012	6.59	48.71	45.74	0.04	0.17	2.57	2.74	0.06	2.36	2.42	8,520.94
Building Off Road Diesel	5.39	41.39	19.63	0.00	0.00	2.25	2.25	0.00	2.07	2.07	4,560.85
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Building 09/10/2011-02/28/2013	10.01	71.30	58.38	0.04	0.17	4.52	4.70	0.06	4.16	4.22	10,465.61
Building Off Road Diesel	8.82	63.98	32.27	0.00	0.00	4.20	4.20	0.00	3.86	3.86	6,505.52
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Building 09/15/2011-05/30/2013	9.52	68.10	56.28	0.04	0.17	3.61	3.79	0.06	3.32	3.38	11,202.98
Building Off Road Diesel	8.32	60.78	30.17	0.00	0.00	3.29	3.29	0.00	3.03	3.03	7,242.89
Building Vendor Trips	0.54	6.09	4.88	0.01	0.04	0.25	0.30	0.01	0.23	0.25	1,252.89
Building Worker Trips	0.65	1.23	21.24	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,707.20
Fine Grading 08/30/2011-12/31/2012	2.86	23.49	12.93	0.00	0.01	1.18	1.18	0.00	1.08	1.08	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 09/01/2011-03/30/2013	1.97	13.79	9.44	0.00	0.01	1.00	1.01	0.00	0.92	0.92	1,572.50
Trenching Off Road Diesel	1.93	13.72	8.22	0.00	0.00	0.99	0.99	0.00	0.91	0.91	1,417.04
Trenching Worker Trips	0.04	0.07	1.22	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46

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Time Slice 1/2/2012-5/30/2012 Active Days: 108	28.88	208.78	174.11	0.12	0.53	11.75	12.28	0.19	10.79	10.98	34,132.33
Building 08/11/2011-05/30/2012	6.14	44.96	43.21	0.04	0.17	2.34	2.51	0.06	2.15	2.21	8,520.49
Building Off Road Diesel	5.05	38.40	18.95	0.00	0.00	2.04	2.04	0.00	1.88	1.88	4,560.85
Building Vendor Trips	0.49	5.44	4.51	0.01	0.04	0.22	0.27	0.01	0.20	0.22	1,252.92
Building Worker Trips	0.60	1.13	19.76	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.73
Building 09/10/2011-02/28/2013	9.35	66.01	55.78	0.04	0.17	4.17	4.34	0.06	3.83	3.89	10,465.16
Building Off Road Diesel	8.25	59.45	31.52	0.00	0.00	3.87	3.87	0.00	3.56	3.56	6,505.52
Building Vendor Trips	0.49	5.44	4.51	0.01	0.04	0.22	0.27	0.01	0.20	0.22	1,252.92
Building Worker Trips	0.60	1.13	19.76	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.73
Building 09/15/2011-05/30/2013	8.85	63.04	53.42	0.04	0.17	3.27	3.44	0.06	3.00	3.07	11,202.53
Building Off Road Diesel	7.76	56.48	29.16	0.00	0.00	2.98	2.98	0.00	2.74	2.74	7,242.89
Building Vendor Trips	0.49	5.44	4.51	0.01	0.04	0.22	0.27	0.01	0.20	0.22	1,252.92
Building Worker Trips	0.60	1.13	19.76	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.73
Fine Grading 08/30/2011-12/31/2012	2.72	22.00	12.42	0.00	0.01	1.08	1.08	0.00	0.99	0.99	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/01/2011-03/30/2013	1.83	12.77	9.28	0.00	0.01	0.89	0.90	0.00	0.82	0.82	1,572.48
Trenching Off Road Diesel	1.79	12.70	8.15	0.00	0.00	0.89	0.89	0.00	0.82	0.82	1,417.04
Trenching Worker Trips	0.03	0.06	1.13	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43

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Time Slice 5/31/2012-12/31/2012 Active Days: 153	22.74	163.82	130.90	0.08	0.36	9.41	9.76	0.13	8.64	8.77	25,611.83
Building 09/10/2011-02/28/2013	9.35	66.01	55.78	0.04	0.17	4.17	4.34	0.06	3.83	3.89	10,465.16
Building Off Road Diesel	8.25	59.45	31.52	0.00	0.00	3.87	3.87	0.00	3.56	3.56	6,505.52
Building Vendor Trips	0.49	5.44	4.51	0.01	0.04	0.22	0.27	0.01	0.20	0.22	1,252.92
Building Worker Trips	0.60	1.13	19.76	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.73
Building 09/15/2011-05/30/2013	8.85	63.04	53.42	0.04	0.17	3.27	3.44	0.06	3.00	3.07	11,202.53
Building Off Road Diesel	7.76	56.48	29.16	0.00	0.00	2.98	2.98	0.00	2.74	2.74	7,242.89
Building Vendor Trips	0.49	5.44	4.51	0.01	0.04	0.22	0.27	0.01	0.20	0.22	1,252.92
Building Worker Trips	0.60	1.13	19.76	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.73
Fine Grading 08/30/2011-12/31/2012	2.72	22.00	12.42	0.00	0.01	1.08	1.08	0.00	0.99	0.99	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/01/2011-03/30/2013	1.83	12.77	9.28	0.00	0.01	0.89	0.90	0.00	0.82	0.82	1,572.48
Trenching Off Road Diesel	1.79	12.70	8.15	0.00	0.00	0.89	0.89	0.00	0.82	0.82	1,417.04
Trenching Worker Trips	0.03	0.06	1.13	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.43

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Time Slice 1/1/2013-2/28/2013 Active Days: 43	18.54	131.01	113.44	0.08	0.35	7.56	7.91	0.12	6.94	7.07	23,239.60
Building 09/10/2011-02/28/2013	8.67	60.99	53.46	0.04	0.17	3.82	3.99	0.06	3.51	3.57	10,464.89
Building Off Road Diesel	7.68	55.15	30.95	0.00	0.00	3.55	3.55	0.00	3.26	3.26	6,505.52
Building Vendor Trips	0.45	4.81	4.15	0.01	0.04	0.20	0.24	0.01	0.18	0.19	1,252.96
Building Worker Trips	0.54	1.03	18.36	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.40
Building 09/15/2011-05/30/2013	8.18	58.19	50.85	0.04	0.17	2.94	3.11	0.06	2.70	2.76	11,202.26
Building Off Road Diesel	7.18	52.36	28.34	0.00	0.00	2.67	2.67	0.00	2.46	2.46	7,242.89
Building Vendor Trips	0.45	4.81	4.15	0.01	0.04	0.20	0.24	0.01	0.18	0.19	1,252.96
Building Worker Trips	0.54	1.03	18.36	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.40
Trenching 09/01/2011-03/30/2013	1.69	11.83	9.14	0.00	0.01	0.80	0.81	0.00	0.74	0.74	1,572.46
Trenching Off Road Diesel	1.66	11.77	8.08	0.00	0.00	0.80	0.80	0.00	0.73	0.73	1,417.04
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.41
Time Slice 3/1/2013-3/29/2013 Active Days: 21	9.87	70.02	59.99	0.04	0.18	3.74	3.92	0.06	3.44	3.50	12,774.71
Building 09/15/2011-05/30/2013	8.18	58.19	50.85	0.04	0.17	2.94	3.11	0.06	2.70	2.76	11,202.26
Building Off Road Diesel	7.18	52.36	28.34	0.00	0.00	2.67	2.67	0.00	2.46	2.46	7,242.89
Building Vendor Trips	0.45	4.81	4.15	0.01	0.04	0.20	0.24	0.01	0.18	0.19	1,252.96
Building Worker Trips	0.54	1.03	18.36	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.40
Trenching 09/01/2011-03/30/2013	1.69	11.83	9.14	0.00	0.01	0.80	0.81	0.00	0.74	0.74	1,572.46
Trenching Off Road Diesel	1.66	11.77	8.08	0.00	0.00	0.80	0.80	0.00	0.73	0.73	1,417.04
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.41

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Time Slice 4/1/2013-5/30/2013 Active Days: 44	11.96	83.44	66.59	0.04	0.19	4.53	4.73	0.07	4.16	4.23	14,621.02
Asphalt 04/01/2013-06/01/2013	3.78	25.25	15.75	0.00	0.02	1.59	1.61	0.01	1.46	1.47	3,418.77
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.49	24.59	13.22	0.00	0.00	1.56	1.56	0.00	1.44	1.44	2,975.43
Paving On Road Diesel	0.04	0.53	0.20	0.00	0.00	0.02	0.02	0.00	0.02	0.02	101.43
Paving Worker Trips	0.07	0.13	2.32	0.00	0.02	0.01	0.03	0.01	0.01	0.01	341.91
Building 09/15/2011-05/30/2013	8.18	58.19	50.85	0.04	0.17	2.94	3.11	0.06	2.70	2.76	11,202.26
Building Off Road Diesel	7.18	52.36	28.34	0.00	0.00	2.67	2.67	0.00	2.46	2.46	7,242.89
Building Vendor Trips	0.45	4.81	4.15	0.01	0.04	0.20	0.24	0.01	0.18	0.19	1,252.96
Building Worker Trips	0.54	1.03	18.36	0.03	0.13	0.07	0.20	0.05	0.06	0.11	2,706.40
Time Slice 5/31/2013-5/31/2013 Active Days: 1	3.78	25.25	15.75	0.00	0.02	1.59	1.61	0.01	1.46	1.47	3,418.77
Asphalt 04/01/2013-06/01/2013	3.78	25.25	15.75	0.00	0.02	1.59	1.61	0.01	1.46	1.47	3,418.77
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.49	24.59	13.22	0.00	0.00	1.56	1.56	0.00	1.44	1.44	2,975.43
Paving On Road Diesel	0.04	0.53	0.20	0.00	0.00	0.02	0.02	0.00	0.02	0.02	101.43
Paving Worker Trips	0.07	0.13	2.32	0.00	0.02	0.01	0.03	0.01	0.01	0.01	341.91

Phase Assumptions

Phase: Fine Grading 8/30/2011 - 12/31/2012 - misc. grading

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 7/1/2011 - 9/30/2011 - clear/grub/demo

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 925.61

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 7 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Mass Grading 7/15/2011 - 8/10/2011 - Overex/recompaction parking garage

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Mass Grading 8/11/2011 - 9/6/2011 - Overex/recompaction building

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Trenching 9/1/2011 - 3/30/2013 - Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Paving 4/1/2013 - 6/1/2013 - Paving

Acres to be Paved: 3

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/11/2011 - 5/30/2012 - Construction Garage

Off-Road Equipment:

5 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

2 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Building Construction 9/10/2011 - 2/28/2013 - Construction Building

Off-Road Equipment:

8 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

6 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

6 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Building Construction 9/15/2011 - 5/30/2013 - Concrete

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 6 hours per day

5 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

3 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Pumps (53 hp) operating at a 0.74 load factor for 6 hours per day

7 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

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3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.28	3.68	1.88	0.00	0.01	0.01	4,640.46
Hearth - No Summer Emissions							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	11.90						
Architectural Coatings	0.86						
TOTALS (lbs/day, unmitigated)	13.41	3.74	6.52	0.00	0.03	0.03	4,648.89

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	17.85	18.60	226.09	0.29	49.09	9.30	27,382.84
University/college (4 yrs)	5.22	0.04	0.51	0.00	0.12	0.02	64.38
Fast food rest. w/o drive thru	0.03	0.00	0.00	0.00	0.00	0.00	0.15
TOTALS (lbs/day, unmitigated)	23.10	18.64	226.60	0.29	49.21	9.32	27,447.37

Operational Settings:

these were included just so we could account for the area source emissions associated with the square footage. The trips rates are the lowest allowable by URBEMIS.

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	21.00	13.95	dwelling units	232.00	3,236.40	28,625.96
University/college (4 yrs)		0.01	students	810.00	8.10	68.05
Fast food rest. w/o drive thru		0.01	1000 sq ft	4.60	0.05	0.16
					3,244.55	28,694.17

VMT takes into account pass-by trips. URBEMIS assumes 5% of residential trips are pass-by. Pass-by trips assume 0.01 miles per trip

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	60.5	0.4	99.4	0.2
Light Truck < 3750 lbs	17.0	1.4	95.9	2.7

Vehicle fleet is not URBEMIS default, but is taken from the LRDP EIR

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	18.3	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.3	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.1	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.2	0.0	0.0	100.0
Motorcycle	1.8	53.6	46.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.9	11.1

Vehicle fleet is not URBEMIS default, but is taken from the LRDP EIR

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
University/college (4 yrs)				5.0	2.5	92.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Fast food rest. w/o drive thru				5.0	2.5	92.5

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Los Angeles\3_Projects_Air Quality\UCR_Student_Housing\Analysis\UCR Glen Mor 2.urb924

Project Name: UCR Glen Mor 2

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	1.76	13.61	9.76	0.01	0.03	0.73	0.76	0.01	0.67	0.68	1,924.75
2012 TOTALS (tons/year unmitigated)	3.30	23.81	19.42	0.01	0.06	1.35	1.41	0.02	1.24	1.26	3,802.45
2013 TOTALS (tons/year unmitigated)	0.77	5.40	4.54	0.00	0.01	0.30	0.32	0.00	0.28	0.28	957.16

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.45	0.68	1.19	0.00	0.00	0.00	848.42

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	4.14	3.66	40.61	0.05	8.98	1.70	4,842.24

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	6.59	4.34	41.80	0.05	8.98	1.70	5,690.66

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	1.76	13.61	9.76	0.01	0.03	0.73	0.76	0.01	0.67	0.68	1,924.75

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Mass Grading 07/01/2011-09/30/2011	0.29	2.75	1.32	0.00	0.00	0.13	0.13	0.00	0.12	0.12	327.70
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.23	1.89	0.92	0.00	0.00	0.09	0.09	0.00	0.08	0.08	189.00
Mass Grading On Road Diesel	0.07	0.86	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	129.46
Mass Grading Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.23
Mass Grading 07/15/2011-08/10/2011	0.07	0.63	0.31	0.00	0.00	0.03	0.03	0.00	0.03	0.03	69.30
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.07	0.63	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	66.35
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Building 08/11/2011-05/30/2012	0.34	2.48	2.33	0.00	0.01	0.13	0.14	0.00	0.12	0.12	434.57
Building Off Road Diesel	0.28	2.11	1.00	0.00	0.00	0.11	0.11	0.00	0.11	0.11	232.60
Building Vendor Trips	0.03	0.31	0.25	0.00	0.00	0.01	0.02	0.00	0.01	0.01	63.90
Building Worker Trips	0.03	0.06	1.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	138.07
Mass Grading 08/11/2011-09/06/2011	0.07	0.63	0.31	0.00	0.00	0.03	0.03	0.00	0.03	0.03	69.30
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.07	0.63	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	66.35
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95

Fine Grading 08/30/2011-12/31/2012	0.13	1.05	0.58	0.00	0.00	0.05	0.05	0.00	0.05	0.05	105.54
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.13	1.04	0.53	0.00	0.00	0.05	0.05	0.00	0.05	0.05	100.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53
Trenching 09/01/2011-03/30/2013	0.09	0.60	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	68.40
Trenching Off Road Diesel	0.08	0.60	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	61.64
Trenching Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.76
Building 09/10/2011-02/28/2013	0.40	2.85	2.34	0.00	0.01	0.18	0.19	0.00	0.17	0.17	418.62
Building Off Road Diesel	0.35	2.56	1.29	0.00	0.00	0.17	0.17	0.00	0.15	0.15	260.22
Building Vendor Trips	0.02	0.24	0.20	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.12
Building Worker Trips	0.03	0.05	0.85	0.00	0.01	0.00	0.01	0.00	0.00	0.00	108.29
Building 09/15/2011-05/30/2013	0.37	2.62	2.17	0.00	0.01	0.14	0.15	0.00	0.13	0.13	431.31
Building Off Road Diesel	0.32	2.34	1.16	0.00	0.00	0.13	0.13	0.00	0.12	0.12	278.85
Building Vendor Trips	0.02	0.23	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01	48.24
Building Worker Trips	0.03	0.05	0.82	0.00	0.00	0.00	0.01	0.00	0.00	0.00	104.23

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2012	3.30	23.81	19.42	0.01	0.06	1.35	1.41	0.02	1.24	1.26	3,802.45
Building 08/11/2011-05/30/2012	0.33	2.43	2.33	0.00	0.01	0.13	0.14	0.00	0.12	0.12	460.11
Building Off Road Diesel	0.27	2.07	1.02	0.00	0.00	0.11	0.11	0.00	0.10	0.10	246.29
Building Vendor Trips	0.03	0.29	0.24	0.00	0.00	0.01	0.01	0.00	0.01	0.01	67.66
Building Worker Trips	0.03	0.06	1.07	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.16
Building 09/10/2011-02/28/2013	1.22	8.61	7.28	0.01	0.02	0.54	0.57	0.01	0.50	0.51	1,365.70
Building Off Road Diesel	1.08	7.76	4.11	0.00	0.00	0.50	0.50	0.00	0.46	0.46	848.97
Building Vendor Trips	0.06	0.71	0.59	0.00	0.01	0.03	0.03	0.00	0.03	0.03	163.51
Building Worker Trips	0.08	0.15	2.58	0.00	0.02	0.01	0.03	0.01	0.01	0.01	353.23
Building 09/15/2011-05/30/2013	1.15	8.23	6.97	0.01	0.02	0.43	0.45	0.01	0.39	0.40	1,461.93
Building Off Road Diesel	1.01	7.37	3.80	0.00	0.00	0.39	0.39	0.00	0.36	0.36	945.20
Building Vendor Trips	0.06	0.71	0.59	0.00	0.01	0.03	0.03	0.00	0.03	0.03	163.51
Building Worker Trips	0.08	0.15	2.58	0.00	0.02	0.01	0.03	0.01	0.01	0.01	353.23
Fine Grading 08/30/2011-12/31/2012	0.35	2.87	1.62	0.00	0.00	0.14	0.14	0.00	0.13	0.13	309.50
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.35	2.86	1.50	0.00	0.00	0.14	0.14	0.00	0.13	0.13	293.27
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.23
Trenching 09/01/2011-03/30/2013	0.24	1.67	1.21	0.00	0.00	0.12	0.12	0.00	0.11	0.11	205.21
Trenching Off Road Diesel	0.23	1.66	1.06	0.00	0.00	0.12	0.12	0.00	0.11	0.11	184.92
Trenching Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.28

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2013	0.77	5.40	4.54	0.00	0.01	0.30	0.32	0.00	0.28	0.28	957.16
Building 09/10/2011-02/28/2013	0.19	1.31	1.15	0.00	0.00	0.08	0.09	0.00	0.08	0.08	225.00
Building Off Road Diesel	0.17	1.19	0.67	0.00	0.00	0.08	0.08	0.00	0.07	0.07	139.87
Building Vendor Trips	0.01	0.10	0.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	26.94
Building Worker Trips	0.01	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.19
Building 09/15/2011-05/30/2013	0.44	3.14	2.75	0.00	0.01	0.16	0.17	0.00	0.15	0.15	604.92
Building Off Road Diesel	0.39	2.83	1.53	0.00	0.00	0.14	0.14	0.00	0.13	0.13	391.12
Building Vendor Trips	0.02	0.26	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01	67.66
Building Worker Trips	0.03	0.06	0.99	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.15
Trenching 09/01/2011-03/30/2013	0.05	0.38	0.29	0.00	0.00	0.03	0.03	0.00	0.02	0.02	50.32
Trenching Off Road Diesel	0.05	0.38	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	45.35
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.97
Asphalt 04/01/2013-06/01/2013	0.09	0.57	0.35	0.00	0.00	0.04	0.04	0.00	0.03	0.03	76.92
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.55	0.30	0.00	0.00	0.04	0.04	0.00	0.03	0.03	66.95
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28
Paving Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.69

Phase Assumptions

Phase: Fine Grading 8/30/2011 - 12/31/2012 - misc. grading

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

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Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 7/1/2011 - 9/30/2011 - clear/grub/demo

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 925.61

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 7 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Mass Grading 7/15/2011 - 8/10/2011 - Overex/recompaction parking garage

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Mass Grading 8/11/2011 - 9/6/2011 - Overex/recompaction building

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

0 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 6 hours per day

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 6 hours per day

Phase: Trenching 9/1/2011 - 3/30/2013 - Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Paving 4/1/2013 - 6/1/2013 - Paving

Acres to be Paved: 3

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Pumps (53 hp) operating at a 0.74 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/11/2011 - 5/30/2012 - Construction Garage

Off-Road Equipment:

5 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

2 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Building Construction 9/10/2011 - 2/28/2013 - Construction Building

Off-Road Equipment:

8 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

6 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

6 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Building Construction 9/15/2011 - 5/30/2013 - Concrete

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 6 hours per day

5 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

3 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 4 hours per day

3 Pumps (53 hp) operating at a 0.74 load factor for 6 hours per day

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7 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.05	0.67	0.34	0.00	0.00	0.00	846.88
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.07	0.01	0.85	0.00	0.00	0.00	1.54
Consumer Products	2.17						
Architectural Coatings	0.16						
TOTALS (tons/year, unmitigated)	2.45	0.68	1.19	0.00	0.00	0.00	848.42

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 0%

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	3.36	3.65	40.52	0.05	8.96	1.70	4,830.86
University/college (4 yrs)	0.78	0.01	0.09	0.00	0.02	0.00	11.35
Fast food rest. w/o drive thru	0.00	0.00	0.00	0.00	0.00	0.00	0.03
TOTALS (tons/year, unmitigated)	4.14	3.66	40.61	0.05	8.98	1.70	4,842.24

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	21.00	13.95	dwelling units	232.00	3,236.40	28,625.96
University/college (4 yrs)		0.01	students	810.00	8.10	68.05
Fast food rest. w/o drive thru		0.01	1000 sq ft	4.60	0.05	0.16
					3,244.55	28,694.17

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	60.5	0.4	99.4	0.2
Light Truck < 3750 lbs	17.0	1.4	95.9	2.7

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	18.3	0.4	99.6	0.0
Med Truck 5751-8500 lbs	0.3	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.1	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.2	0.0	0.0	100.0
Motorcycle	1.8	53.6	46.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
University/college (4 yrs)				5.0	2.5	92.5

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Fast food rest. w/o drive thru				5.0	2.5	92.5

CONSERVATIVE ESTIMATE OF UNMITIGATED CONSTRUCTION EMISSIONS (pounds per day)
page 1 of 2

	ROC	NO_X	CO	SO_X	PM_{10}[a]	$PM_{2.5}$[a]	CO_2
Clear/Grub/Demo							
On-site Total	6.83	57.19	27.88	-	54.94	13.50	5,727.35
Fugitive Dust (at GM2 site only)	-	-	-	-	30.80	6.47	-
Fugitive Dust (at disposal site only)	-	-	-	-	21.38	4.49	-
Off-Road Diesel	6.83	57.19	27.88	-	2.76	2.54	5,727.35
Off-site Total	2.11	26.07	12.18	0.04	1.19	1.01	4,202.94
On-Road Diesel	2.04	25.94	9.98	0.04	1.17	1.00	3,923.11
Worker Trips	0.07	0.13	2.20	-	0.02	0.01	279.83
Grand Total	**8.94**	**83.26**	**40.06**	**0.04**	**56.13**	**14.51**	**9,930.29**
Parking Garage Overexcavation							
On-site Total	7.67	66.27	29.78	-	9.45	4.06	6,984.00
Fugitive Dust	-	-	-	-	6.53	1.37	-
Off-Road Diesel	7.67	66.27	29.78	-	2.92	2.69	6,984.00
Off-site Total	0.08	0.14	2.44	-	0.02	0.01	310.92
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.08	0.14	2.44	-	0.02	0.01	310.92
Grand Total	**7.75**	**66.41**	**32.22**	**-**	**9.47**	**4.07**	**7,294.92**
Building Overexcavation							
On-site Total	7.67	66.27	29.78	-	11.46	4.48	6,984.00
Fugitive Dust	-	-	-	-	8.54	1.79	-
Off-Road Diesel	7.67	66.27	29.78	-	2.92	2.69	6,984.00
Off-site Total	0.08	0.14	2.44	-	0.02	0.01	310.92
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.08	0.14	2.44	-	0.02	0.01	310.92
Grand Total	**7.75**	**66.41**	**32.22**	**-**	**11.48**	**4.49**	**7,294.92**
Parking Garage Construction							
On-site Total	5.39	41.39	19.63	-	2.25	2.07	4,560.85
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	5.39	41.39	19.63	-	2.25	2.07	4,560.85
Off-site Total	0.97	6.26	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	5.32	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**6.36**	**47.65**	**40.16**	**0.03**	**2.66**	**2.36**	**7,729.08**
Miscellaneous Grading							
On-site Total	2.83	23.44	11.96	-	10.59	3.06	2,247.32
Fugitive Dust	-	-	-	-	9.42	1.98	-
Off-Road Diesel	2.83	23.44	11.96	-	1.17	1.08	2,247.32
Off-site Total	0.03	0.06	0.98	-	0.01	-	124.37
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.03	0.06	0.98	-	0.01	-	124.37
Grand Total	**2.86**	**23.50**	**12.94**	**-**	**10.60**	**3.06**	**2,371.69**
Trenching							
On-site Total	1.93	13.72	8.22	-	0.99	0.91	1,417.04
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	1.93	13.72	8.22	-	0.99	0.91	1,417.04
Off-site Total	0.04	0.07	1.22	-	0.01	0.01	155.46
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.04	0.07	1.22	-	0.01	0.01	155.46
Grand Total	**1.97**	**13.79**	**9.44**	**-**	**1.00**	**0.92**	**1,572.50**
Building Construction							
On-site Total	8.82	63.98	32.27	-	4.20	3.86	6,505.52
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	8.82	63.98	32.27	-	4.20	3.86	6,505.52
Off-site Total	0.97	6.26	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	5.32	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**9.79**	**70.24**	**52.80**	**0.03**	**4.61**	**4.15**	**9,673.75**

CONSERVATIVE ESTIMATE OF UNMITIGATED CONSTRUCTION EMISSIONS (pounds per day)

Concrete Phase							
On-site Total	8.32	60.78	30.17	-	3.29	3.03	7,242.89
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	8.32	60.78	30.17	-	3.29	3.03	7,242.89
Off-site Total	0.97	6.26	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	5.32	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**9.29**	**67.04**	**50.70**	**0.03**	**3.70**	**3.32**	**10,411.12**
Paving Phase							
On-site Total	3.66	24.59	13.22	-	1.56	1.44	2,975.43
Asphalt Off-Gas	0.17	-	-	-	-	-	-
Off-Road Diesel, Asphalt	3.49	24.59	13.22	-	1.56	1.44	2,975.43
Off-site Total	0.11	0.66	2.52	-	0.05	0.03	443.34
On-Road Diesel, Asphalt	0.04	0.53	0.20	-	0.02	0.02	101.43
Worker Trips, Asphalt	0.07	0.13	2.32	-	0.03	0.01	341.91
Grand Total	**3.77**	**25.25**	**15.74**	**-**	**1.61**	**1.47**	**3,418.77**
On-site Emissions Totals (at Glen Mor 2 site only)							
Clear/Grub/Demo	6.8	57.2	27.9	-	33.6	9.0	5,727.4
Parking Garage Overexcavation	7.7	66.3	29.8	-	9.4	4.1	6,984.0
Building Overexcavation	7.7	66.3	29.8	-	11.5	4.5	6,984.0
Parking Garage Construction	5.4	41.4	19.6	-	2.3	2.1	4,560.9
Miscellaneous Grading	2.8	23.4	12.0	-	10.6	3.1	2,247.3
Trenching	1.9	13.7	8.2	-	1.0	0.9	1,417.0
Building Construction	8.8	64.0	32.3	-	4.2	3.9	6,505.5
Concrete Phase	8.3	60.8	30.2	-	3.3	3.0	7,242.9
Paving Phase	3.7	24.6	13.2	-	1.6	1.4	2,975.4
Maximum On-site Emissions	**34**	**261**	**130**	**-**	**55**	**22**	**27,701**
Localized Significance Threshold[b]	--	270	1,577	--	13	8	--
Exceed Threshold?	**No**	**No**	**No**	**No**	**Yes**	**Yes**	**No**
On-site Emissions Totals (at disposal site)							
Clear/Grub/Demo	-	-	-	-	21.38	4.49	-
Localized Significance Threshold[b]	--	601	3,158	--	186	45	--
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Regional Emissions Totals							
Clear/Grub/Demo	8.9	83.3	40.1	0.0	56.1	14.5	9,930.3
Parking Garage Overexcavation	7.8	66.4	32.2	-	9.5	4.1	7,294.9
Building Overexcavation	7.8	66.4	32.2	-	11.5	4.5	7,294.9
Parking Garage Construction	6.4	47.7	40.2	0.0	2.7	2.4	7,729.1
Miscellaneous Grading	2.9	23.5	12.9	-	10.6	3.1	2,371.7
Trenching	2.0	13.8	9.4	-	1.0	0.9	1,572.5
Building Construction	9.8	70.2	52.8	0.0	4.6	4.2	9,673.8
Concrete Phase	9.3	67.0	50.7	0.0	3.7	3.3	10,411.1
Paving Phase	3.8	25.3	15.7	-	1.6	1.5	3,418.8
Maximum Regional Emissions	**39.2**	**305.5**	**206.1**	**0.1**	**78.7**	**28.3**	**41,688**
Regional Significance Threshold	75	100	550	150	150	55	--
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**

Notes:

URBEMIS print-out sheets and fugitive PM calculation worksheet are included in Appendix A.

[a] Fugitive PM_{10} and $PM_{2.5}$ emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[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 (five acres).

CONSERVATIVE ESTIMATE OF MITIGATED CONSTRUCTION EMISSIONS (pounds per day)

	ROC	NO_X	CO	SO_X	PM_{10} [a]	$PM_{2.5}$ [a]	CO_2
Clear/Grub/Demo							
On-site Total	1.64	15.44	27.88	-	53.34	12.02	5,727.35
Fugitive Dust (at GM2)	-	-	-	-	30.80	6.47	-
Fugitive Dust (at disposal site)					21.38	4.49	
Off-Road Diesel	1.64	15.44	27.88	-	1.16	1.07	5,727.35
Off-site Total	2.11	15.69	12.18	0.04	1.19	1.01	4,202.94
On-Road Diesel	2.04	15.56	9.98	0.04	1.17	1.00	3,923.11
Worker Trips	0.07	0.13	2.20	-	0.02	0.01	279.83
Grand Total	**3.75**	**31.14**	**40.06**	**0.04**	**54.53**	**13.03**	**9,930.29**
Parking Garage Overexcavation							
On-site Total	1.84	17.89	29.78	-	7.75	2.50	6,984.00
Fugitive Dust	-	-	-	-	6.53	1.37	-
Off-Road Diesel	1.84	17.89	29.78	-	1.23	1.13	6,984.00
Off-site Total	0.08	0.14	2.44	-	0.02	0.01	310.92
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.08	0.14	2.44	-	0.02	0.01	310.92
Grand Total	**1.92**	**18.03**	**32.22**	**-**	**7.77**	**2.51**	**7,294.92**
Building Overexcavation							
On-site Total	1.84	17.89	29.78	-	9.77	2.92	6,984.00
Fugitive Dust	-	-	-	-	8.54	1.79	-
Off-Road Diesel	1.84	17.89	29.78	-	1.23	1.13	6,984.00
Off-site Total	0.08	0.14	2.44	-	0.02	0.01	310.92
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.08	0.14	2.44	-	0.02	0.01	310.92
Grand Total	**1.92**	**18.03**	**32.22**	**-**	**9.79**	**2.93**	**7,294.92**
Parking Garage Construction							
On-site Total	1.29	11.18	19.63	-	0.95	0.87	4,560.85
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	1.29	11.18	19.63	-	0.95	0.87	4,560.85
Off-site Total	0.97	4.13	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	3.19	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**2.26**	**15.31**	**40.16**	**0.03**	**1.36**	**1.16**	**7,729.08**
Miscellaneous Grading							
On-site Total	0.68	6.33	11.96	-	9.91	2.43	2,247.32
Fugitive Dust	-	-	-	-	9.42	1.98	-
Off-Road Diesel	0.68	6.33	11.96	-	0.49	0.45	2,247.32
Off-site Total	0.03	0.06	0.98	-	0.01	-	124.37
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.03	0.06	0.98	-	0.01	-	124.37
Grand Total	**0.71**	**6.39**	**12.94**	**-**	**9.92**	**2.43**	**2,371.69**
Trenching							
On-site Total	0.46	3.70	8.22	-	0.42	0.38	1,417.04
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	0.46	3.70	8.22	-	0.42	0.38	1,417.04
Off-site Total	0.04	0.07	1.22	-	0.01	0.01	155.46
On-Road Diesel	-	-	-	-	-	-	-
Worker Trip	0.04	0.07	1.22	-	0.01	0.01	155.46
Grand Total	**0.50**	**3.77**	**9.44**	**-**	**0.43**	**0.39**	**1,572.50**
Building Construction							
On-site Total	2.12	17.27	32.27	-	1.76	1.62	6,505.52
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	2.12	17.27	32.27	-	1.76	1.62	6,505.52
Off-site Total	0.97	4.13	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	3.19	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**3.09**	**21.41**	**52.80**	**0.03**	**2.17**	**1.91**	**9,673.75**

CONSERVATIVE ESTIMATE OF MITIGATED CONSTRUCTION EMISSIONS (pounds per day)

Concrete Phase							
On-site Total	2.00	16.41	30.17	-	1.38	1.27	7,242.89
Fugitive Dust	-	-	-	-	-	-	-
Off-Road Diesel	2.00	16.41	30.17	-	1.38	1.27	7,242.89
Off-site Total	0.97	4.13	20.53	0.03	0.41	0.29	3,168.23
On-Road Diesel	0.47	3.19	4.23	0.01	0.26	0.21	1,090.79
Worker Trip	0.50	0.94	16.30	0.02	0.15	0.08	2,077.44
Grand Total	**2.97**	**20.54**	**50.70**	**0.03**	**1.79**	**1.56**	**10,411.12**
Paving Phase							
On-site Total	1.01	6.64	13.22	-	0.66	0.60	2,975.43
Asphalt Off-Gas	0.17	-	-	-	-	-	-
Off-Road Diesel, Asphalt	0.84	6.64	13.22	-	0.66	0.60	2,975.43
Off-site Total	0.11	0.45	2.52	-	0.05	0.03	443.34
On-Road Diesel, Asphalt	0.04	0.32	0.20	-	0.02	0.02	101.43
Worker Trips, Asphalt	0.07	0.13	2.32	-	0.03	0.01	341.91
Grand Total	**1.12**	**7.09**	**15.74**	**-**	**0.71**	**0.63**	**3,418.77**
On-site Emissions Totals (at Glen Mor 2 site only)							
Clear/Grub/Demo	1.6	15.4	27.9	-	32.0	7.5	5,727.4
Parking Garage Overexcavation	1.8	17.9	29.8	-	7.8	2.5	6,984.0
Building Overexcavation	1.8	17.9	29.8	-	9.8	2.9	6,984.0
Parking Garage Construction	1.3	11.2	19.6	-	0.9	0.9	4,560.9
Miscellaneous Grading	0.7	6.3	12.0	-	9.9	2.4	2,247.3
Trenching	0.5	3.7	8.2	-	0.4	0.4	1,417.0
Building Construction	2.1	17.3	32.3	-	1.8	1.6	6,505.5
Concrete Phase	2.0	16.4	30.2	-	1.4	1.3	7,242.9
Paving Phase	1.0	6.6	13.2	-	0.7	0.6	2,975.4
Maximum On-site Emissions	**8**	**70**	**130**	**-**	**46**	**14**	**27,701**
Localized Significance Threshold[b]	--	270	1,577	--	13	8	--
Exceed Threshold?	**No**	**No**	**No**	**No**	**Yes**	**Yes**	**No**
On-site Emissions Totals (at disposal site only)							
Clear/Grub/Demo	-	-	-	-	21.38	4.49	-
Localized Significance Threshold[b]	--	601	3,158	--	186	45	--
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Regional Emissions Totals							
Clear/Grub/Demo	3.7	31.1	40.1	0.0	54.5	13.0	9,930.3
Parking Garage Overexcavation	1.9	18.0	32.2	-	7.8	2.5	7,294.9
Building Overexcavation	1.9	18.0	32.2	-	9.8	2.9	7,294.9
Parking Garage Construction	2.3	15.3	40.2	0.0	1.4	1.2	7,729.1
Miscellaneous Grading	0.7	6.4	12.9	-	9.9	2.4	2,371.7
Trenching	0.5	3.8	9.4	-	0.4	0.4	1,572.5
Building Construction	3.1	21.4	52.8	0.0	2.2	1.9	9,673.8
Concrete Phase	3.0	20.5	50.7	0.0	1.8	1.6	10,411.1
Paving Phase	1.1	7.1	15.7	-	0.7	0.6	3,418.8
Maximum Regional Emissions	**13.3**	**98.6**	**206.1**	**0.1**	**70.2**	**20.5**	**41,688.4**
Regional Significance Threshold	75	100	550	150	150	55	--
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

URBEMIS print-out sheets and fugitive PM calculation worksheet are included in Appendix A.

[a] Fugitive PM_{10} and $PM_{2.5}$ emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[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 (five acres).

Summary of On-Site Fugitive PM_{10} Emissions

3.8	Dirt pushing emissions
21.4	Dirt/materials handling emissions
5.6	Unpaved surface travel emissions
30.8	**On-site Emissions Total**

Estimating Emissions from Dirt Pushing or Bulldozing Operations [a]

E = ([0.45 x ({[G]$^{1.5}$}/{[H]$^{1.4}$})] x I) x J

Where,

E = PM_{10} emissions from dirt pushing
G = Silt content of aggregate in percent
H = Moisture content of the surface material
I = 2.2046; a conversion factor to convert kilograms per hour to pounds per hour
J = Hours of dirt pushing

G =	7.5	I =	2.2046
H =	12.0	J =	6.0
E =	**3.77**		

[a] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-F

Estimating Emissions from Dirt Piling or Material Handling [b]

E = [0.00112 x ({[G/5]$^{1.3}$}/{[H/2]$^{1.4}$})] x [I/J]

Where,

E = PM_{10} emissions from dirt piling or materials handling
G = Mean wind speed in miles per hour
H = Moisture content of the surface material
I = Pounds of dirt handled per day
J = 2,000; a conversion factor to convert pounds to tons

CYD to pounds per day conversion:

30,000	cyd of excavation
66	working days, assuming 22 working days per month for 3 months
455	cyd/day
27	ft3 per cyd
12,272.73	ft3 of dirt handled
1,227,273	daily pounds of dirt handled, assuming excavated dirt is 100 lbs per cubic foot

G =	3.4	I =	1,227,273
H =	12%	J =	2,000
E =	**21.38**		

[b] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-G

Estimating Emissions from Vehicle Travel on Unpaved Roads [c]

E = V x F

Where,

E = Emissions for vehicles on unpaved roads
V = Vehicle miles traveled
F = Emissions factor for vehicle travel on unpaved roads.
2.1 x [G/12] x H/30] x {[J/3]0.7} x {[I/4]0.5} x {[365 - K]/365} in pounds per miles traveled

Where,

G = Surface silt loading in percent
H = Mean vehicle speed in miles per hour
I = Mean number of wheels on vehicles
J = Mean vehicle weight in tons
K = Mean number of days per year with at least 0.01 inch of precipitation

On-site VMT calculation

21.00	acres
914,760	sqft (43560 ft2 per acre)
956	side length in feet (square root of total size)
20	passes per hour
6.5	hours
130	passes
124,336	feet
23.55	miles

G =	7.5	J =	15
H =	5.0	K =	34
I =	6		
F =	0.75	Uncontroled emissions factor	
	(0.51)	Rule 403 control efficency (68 percent)	
	0.24	Controlled emissions factor	
	23.55	On-site VMT	
E =	**5.65**		

[c] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-D

Summary of On-Site Fugitive PM_{10} Emissions

-	Dirt pushing emissions
21.4	Dirt/materials handling emissions
-	Unpaved surface travel emissions
21.4	**On-site Emissions Total**

Estimating Emissions from Dirt Pushing or Bulldozing Operations [a]

E = ([0.45 x ({[G]$^{1.5}$}/{[H]$^{1.4}$})] x I) x J

Where,

E = PM_{10} emissions from dirt pushing
G = Silt content of aggregate in percent
H = Moisture content of the surface material
I = 2.2046; a conversion factor to convert kilograms per hour to pounds per hour
J = Hours of dirt pushing

G =	7.5	I =	2.2046
H =	12.0	J =	-
E =	**-**		

[a] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-F

Estimating Emissions from Dirt Piling or Material Handling [b]

E = [0.00112 x ({[G/5]$^{1.3}$}/{[H/2]$^{1.4}$})] x [I/J]

Where,

E = PM_{10} emissions from dirt piling or materials handling
G = Mean wind speed in miles per hour
H = Moisture content of the surface material
I = Pounds of dirt handled per day
J = 2,000; a conversion factor to convert pounds to tons

CYD to pounds per day conversion:

30,000	cyd of stockpiling
66	working days, assuming 22 working days per month for 3 months
455	cyd/day
27	ft3 per cyd
12,272.73	ft3 of dirt handled
1,227,273	daily pounds of dirt handled, assuming excavated dirt is 100 lbs per cubic foot

G =	3.4	I =	1,227,273
H =	12%	J =	2,000
E =	**21.38**		

[b] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-G

Estimating Emissions from Vehicle Travel on Unpaved Roads [c]

E = V x F

Where,

E = Emissions for vehicles on unpaved roads
V = Vehicle miles traveled
F = Emissions factor for vehicle travel on unpaved roads.
2.1 x [G/12] x H/30] x {[J/3]0.7} x {[I/4]0.5} x {[365 - K]/365} in pounds per miles traveled

Where,

G = Surface silt loading in percent
H = Mean vehicle speed in miles per hour
I = Mean number of wheels on vehicles
J = Mean vehicle weight in tons
K = Mean number of days per year with at least 0.01 inch of precipitation

On-site VMT calculation

-	acres
-	sqft (43560 ft2 per acre)
-	side length in feet (square root of total size)
20	passes per hour
6.5	hours
130	passes
-	feet
0.00	miles

G =	7.5	J =	15
H =	5.0	K =	34
I =	6		
F =	0.75	Uncontroled emissions factor	
	(0.51)	Rule 403 control efficency (68 percent)	
	0.24	Controlled emissions factor	
	-	On-site VMT	
E =	**-**		

[c] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-D

Summary of On-Site Fugitive PM_{10} Emissions

3.8	Dirt pushing emissions
-	Dirt/materials handling emissions
2.8	Unpaved surface travel emissions
6.5	**On-site Emissions Total**

Estimating Emissions from Dirt Pushing or Bulldozing Operations [a]

E = ([0.45 x ({[G]$^{1.5}$}/{[H]$^{1.4}$})] x I) x J

Where,

E = PM_{10} emissions from dirt pushing
G = Silt content of aggregate in percent
H = Moisture content of the surface material
I = 2.2046; a conversion factor to convert kilograms per hour to pounds per hour
J = Hours of dirt pushing

G =	7.5	I =	2.2046
H =	12.0	J =	6.0
E =	**3.77**		

[a] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-F

Estimating Emissions from Dirt Piling or Material Handling [b]

E = [0.00112 x ({[G/5]$^{1.3}$}/{[H/2]$^{1.4}$})] x [I/J]

Where,

E = PM_{10} emissions from dirt piling or materials handling
G = Mean wind speed in miles per hour
H = Moisture content of the surface material
I = Pounds of dirt handled per day
J = 2,000; a conversion factor to convert pounds to tons

G =	3.4	I =	-
H =	12%	J =	2,000
E =	**-**		

[b] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-G

Estimating Emissions from Vehicle Travel on Unpaved Roads [c]

E = V x F

Where,

E = Emissions for vehicles on unpaved roads
V = Vehicle miles traveled
F = Emissions factor for vehicle travel on unpaved roads.
2.1 x [G/12] x H/30] x {[J/3]0.7} x {[I/4]0.5} x {[365 - K]/365} in pounds per miles traveled
Where,
G = Surface silt loading in percent
H = Mean vehicle speed in miles per hour
I = Mean number of wheels on vehicles
J = Mean vehicle weight in tons
K = Mean number of days per year with at least 0.01 inch of precipitation

On-site VMT calculation

5.00	acres
217,800	sqft (43560 ft2 per acre)
467	side length in feet (square root of total size)
20	passes per hour
6.5	hours
130	passes
60,670	feet
11.49	miles

G =	7.5	J =	15
H =	5.0	K =	34
I =	6		
F =	0.75	Uncontroled emissions factor	
	(0.51)	Rule 403 control efficency (68 percent)	
	0.24	Controlled emissions factor	
	11.49	On-site VMT	
E =	**2.76**		

[c] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-D

Summary of On-Site Fugitive PM_{10} Emissions

3.8	Dirt pushing emissions
-	Dirt/materials handling emissions
5.6	Unpaved surface travel emissions
9.4	**On-site Emissions Total**

Estimating Emissions from Dirt Pushing or Bulldozing Operations [a]

$E = ([0.45 \times (\{[G]^{1.5}\}/\{[H]^{1.4}\})] \times I) \times J$

Where,

E = PM_{10} emissions from dirt pushing
G = Silt content of aggregate in percent
H = Moisture content of the surface material
I = 2.2046; a conversion factor to convert kilograms per hour to pounds per hour
J = Hours of dirt pushing

G =	7.5	I =	2.2046
H =	12.0	J =	6.0
E =	**3.77**		

[a] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-F

Estimating Emissions from Dirt Piling or Material Handling [b]

$E = [0.00112 \times (\{[G/5]^{1.3}\}/\{[H/2]^{1.4}\})] \times [I/J]$

Where,

E = PM_{10} emissions from dirt piling or materials handling
G = Mean wind speed in miles per hour
H = Moisture content of the surface material
I = Pounds of dirt handled per day
J = 2,000; a conversion factor to convert pounds to tons

G =	3.4	I =	-
H =	12%	J =	2,000
E =	**-**		

[b] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-G

Estimating Emissions from Vehicle Travel on Unpaved Roads [c]

E = V x F

Where,

E = Emissions for vehicles on unpaved roads
V = Vehicle miles traveled
F = Emissions factor for vehicle travel on unpaved roads.

2.1 x [G/12] x H/30] x {[J/3]0.7} x {[I/4]0.5} x {[365 - K]/365} in pounds per miles tra

Where,

G = Surface silt loading in percent
H = Mean vehicle speed in miles per hour
I = Mean number of wheels on vehicles
J = Mean vehicle weight in tons
K = Mean number of days per year with at least 0.01 inch of precipitation

On-site VMT calculation

21.00	acres
914,760	sqft (43560 ft2 per acre)
956	side length in feet (square root of total size)
20	passes per hour
6.5	hours
130	passes
124,336	feet
23.55	miles

G =	7.5	J =	15
H =	5.0	K =	34
I =	6		
F =	0.75	Uncontroled emissions factor	
	(0.51)	Rule 403 control efficency (68 percent)	
	0.24	Controlled emissions factor	
	23.55	On-site VMT	
E =	**5.65**		

[c] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-D

Summary of On-Site Fugitive PM_{10} Emissions

3.8	Dirt pushing emissions
-	Dirt/materials handling emissions
4.8	Unpaved surface travel emissions
8.5	**On-site Emissions Total**

Estimating Emissions from Dirt Pushing or Bulldozing Operations [a]

E = ([0.45 x ({[G]$^{1.5}$}/{[H]$^{1.4}$})] x I) x J

Where,

E = PM_{10} emissions from dirt pushing

G = Silt content of aggregate in percent

H = Moisture content of the surface material

I = 2.2046; a conversion factor to convert kilograms per hour to pounds per hour

J = Hours of dirt pushing

G =	7.5	I =	2.2046
H =	12.0	J =	6.0
E =	**3.77**		

[a] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-F

Estimating Emissions from Dirt Piling or Material Handling [b]

E = [0.00112 x ({[G/5]$^{1.3}$}/{[H/2]$^{1.4}$})] x [I/J]

Where,

E = PM_{10} emissions from dirt piling or materials handling

G = Mean wind speed in miles per hour

H = Moisture content of the surface material

I = Pounds of dirt handled per day

J = 2,000; a conversion factor to convert pounds to tons

G =	3.4	I =	-
H =	12%	J =	2,000
E =	**-**		

[b] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-G

Estimating Emissions from Vehicle Travel on Unpaved Roads [c]

E = V x F

Where,

E = Emissions for vehicles on unpaved roads

V = Vehicle miles traveled

F = Emissions factor for vehicle travel on unpaved roads.

2.1 x [G/12] x H/30] x {[J/3]0.7} x {[I/4]0.5} x {[365 - K]/365} in pounds per miles tra

Where,

G = Surface silt loading in percent

H = Mean vehicle speed in miles per hour

I = Mean number of wheels on vehicles

J = Mean vehicle weight in tons

K = Mean number of days per year with at least 0.01 inch of precipitation

<u>On-site VMT calculation</u>

15.00	acres
653,400	sqft (43560 ft2 per acre)
808	side length in feet (square root of total size)
20	passes per hour
6.5	hours
130	passes
105,083	feet
19.90	miles

G =	7.5	J =	15
H =	5.0	K =	34
I =	6		
F =	0.75	Uncontroled emissions factor	
	(0.51)	Rule 403 control efficency (68 percent)	
	0.24	Controlled emissions factor	
	19.90	On-site VMT	
E =	**4.77**		

[c] SCAQMD 1993; CEQA Air Quality Handbook, Table A9-9-D

Stationary Sources - Criteria Pollutants

Electricity Usage

Land Use	1,000 Sqft	Electricity Usage Rate [a] (kWh\sq.ft\yr)	Total Electricity Usage (KWh\year)	Total Electricity Usage (MWh\Day)	CO 0.2	ROC 0.01	NOx 1.15	PM10 0.04	SOx 0.12
					Emission Factors (lbs/MWh) [b]				
Existing					Emissions from Electricity Consumption (lbs/day)				
Office	0.0	12.95	0	0.000	0.000	0.000	0.000	0.000	0.000
Retail	0.0	13.55	0	0.000	0.000	0.000	0.000	0.000	0.000
Hotel/Motel	0.0	9.95	0	0.000	0.000	0.000	0.000	0.000	0.000
Restaurant	0.0	47.45	0	0.000	0.000	0.000	0.000	0.000	0.000
Food Store	0.0	53.30	0	0.000	0.000	0.000	0.000	0.000	0.000
Warehouse	0.0	4.35	0	0.000	0.000	0.000	0.000	0.000	0.000
College/University	0.0	11.55	0	0.000	0.000	0.000	0.000	0.000	0.000
High School	0.0	10.50	0	0.000	0.000	0.000	0.000	0.000	0.000
Elementary School	0.0	5.90	0	0.000	0.000	0.000	0.000	0.000	0.000
Hospital	0.0	21.70	0	0.000	0.000	0.000	0.000	0.000	0.000
Miscellaneous	0.0	10.50	0	0.000	0.000	0.000	0.000	0.000	0.000
Residential (DU)	0.0	5,627	0	0.000	0.000	0.000	0.000	0.000	0.000
Total Existing			**0**	**0.000**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Project									
Office	0.0	12.95	0	0.000	0.000	0.000	0.000	0.000	0.000
Retail	0.0	13.55	0	0.000	0.000	0.000	0.000	0.000	0.000
Hotel/Motel	0.0	9.95	0	0.000	0.000	0.000	0.000	0.000	0.000
Restaurant	4.6	47.45	218,270	0.598	0.120	0.006	0.688	0.024	0.072
Food Store	0.0	53.3	0	0.000	0.000	0.000	0.000	0.000	0.000
Warehouse	0.0	4.35	0	0.000	0.000	0.000	0.000	0.000	0.000
College/University	11.7	11.55	134,731	0.369	0.074	0.004	0.424	0.015	0.044
High School	0.0	10.5	0	0.000	0.000	0.000	0.000	0.000	0.000
Elementary School	0.0	5.9	0	0.000	0.000	0.000	0.000	0.000	0.000
Hospital	0.0	21.7	0	0.000	0.000	0.000	0.000	0.000	0.000
Miscellaneous	0.0	10.5	0	0.000	0.000	0.000	0.000	0.000	0.000
Residential (DU)	232.0	5,627	1,305,348	3.576	0.715	0.036	4.113	0.143	0.429
Total Project			**1,658,349**	**4.543**	**0.91**	**0.05**	**5.23**	**0.18**	**0.55**
Net Emissions From Electricity Usage					**0.91**	**0.05**	**5.23**	**0.18**	**0.55**

Natural Gas Usage

Land Use	1,000 Sqft	Natural Gas Usage Rate [c] (cu.ft\sq.ft\mo)	Total Natural Gas Usage (cu.ft\mo)	Total Natural Gas Usage (cu.ft\DAY)	CO 20	ROC 5.3	NOx 120/80 [e]	PM10 0.2	SOx 0
					Emission Factors (lbs/MCuft) [d]				
Existing					Emissions from Natural Gas Consumption (lbs/day)				
Office	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
Retail	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Hotel/Motel	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Restaurant	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Food Store	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Warehouse	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
College/University	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
High School	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Elementary School	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
Hospital	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Miscellaneous	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Residential (Single Family DU)	0.0	6,665	**0**	**0**	0.000	0.000	0.000	0.000	
Residential (Multi-Family DU)	0.0	4,012	**0**	**0**	0.000	0.000	0.000	0.000	--
Total Existing			**0**	**0**	**0.00**	**0.00**	**0.00**	**0.00**	--
Project									
Office	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
Retail	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Hotel/Motel	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Restaurant	4.6	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Food Store	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Warehouse	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
College/University	11.7	4.8	**55,992**	**1,866**	0.037	0.010	0.224	0.000	--
High School	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Elementary School	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000	--
Hospital	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000	--
Miscellaneous	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000	--
Residential (Single Family DU)	232.0	6,665	**1,546,280**	**51,543**	1.031	0.273	4.123	0.010	
Residential (Multi-Family DU)	0.0	4,012	**0**	**0**	0.000	0.000	0.000	0.000	--
Total Project			**1,602,272**	**53,409**	**1.07**	**0.28**	**4.35**	**0.01**	--
Net Emissions From Natural Gas Usage					**1.07**	**0.28**	**4.35**	**0.01**	**--**

Summary of Stationary Emissions

	CO	ROC	NOx	PM10	SOx
Total Existing Emissions (lbs/day)	0.00	0.00	0.00	0.00	0.00
Total Project Emissions (lbs/day)	1.98	0.33	9.57	0.19	0.55
Total Net Emissions (lbs/day)	**1.98**	**0.33**	**9.57**	**0.19**	**0.55**

[a] Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook SCAQMD, 1993.

[b] Emission Factors from Table A9-11-B, CEQA Air Quality Handbook SCAQMD, 1993.

[c] Natural Gas Usage Rates from Table A9-12-A CEQA Air Quality Handbook SCAQMD, 1993.

[d] Emission Factors from Table A9-12-B, CEQA Air Quality Handbook SCAQMD, 1993.

[e] The emission factors for NOx in lbs per million cuft of natural gas are 120 for nonresidential uses and 80 for residential uses.

UCR Glen Mor 2 Greenhouse Gas Emissions

(Metric Tons Per Year)

	Year 2020 Business as Usual	AB32 Scoping Plan Reductions	Non-mitigated Year 2020 Emissions	Project Design and Mitigation Reductions	Mitigated Year 2020 Emissions
Mobile	4,708	(1,402)	3,307	-	3,307
Natural Gas	1,064	(96)	968	(97)	872
Electricity	1,612	(532)	1,080	(108)	972
Water Consumption Related	75	(25)	51	(10)	40
Total Project	**7,460**	**(2,054)**	**5,405**	**(215)**	**5,191**

Mitigated 2020 GHG Emissions Percent Below Business as Usual	30.4%
AB 32 Percentage Below Business as Usual Target Percentage	28.5%
Meet/Exceed AB 32 GHG Reduction Target?	**Yes**

Summary of AB32 Scoping Plan Reductions

Mobile-source: Pavley Emissions Standards	19.8%
Mobile-source: Low Carbon Fuel Standard	7.2%
Mobile-source: Vehicle Efficiency Measures	2.8%
Natural Gas: Transmission and Distribution Emissions Reductions	7.4%
Natural Gas: Extraction Emissions Reductions	1.6%
Electricity/Water Pumping: Renewables Portfolio Standard	33.0%

Summary of Project Design and Mitigation Reductions

Natural Gas: Conservative estimate of LEED efficiency and mitigation measures	10.0%
Electricity: Conservative estimate of LEED efficiency and mitigation measures	10.0%
Water: Conservative estimate of LEED efficiency measures	20.0%

AB 32 Reduction Target Calculation

Year 2020 California CO_2e Emissions Inventory BAU Forecast (MMT)	596.40
Year 1990 California CO_2e Emissions Inventory (MMT)	426.60
AB 32 Reduction Target (MMT)	169.8

Required Percent Reduction from Year 2020 Business as Usual (BAU) Emissions	28.5%

Electricity Usage

Land Use	1,000 Sqft	Electricity Usage Rate [a] (kWh\sq.ft\yr)	Total Electricity Usage (KWh\year)	Total Electricity Usage (MWh\day)	CO_2 724.12	CH_4 0.0302	N_2O 0.0081	CO_2e 21/310[c]
					Emission Factors (lbs/MWh) [b]			
Existing					Emissions from Electricity (lbs/day)			
Office	0.0	12.95	-	-	-	-	-	-
Retail	0.0	13.55	-	-	-	-	-	-
Hotel/Motel	0.0	9.95	-	-	-	-	-	-
Restaurant	0.0	47.45	-	-	-	-	-	-
Food Store	0.0	53.30	-	-	-	-	-	-
Warehouse	0.0	4.35	-	-	-	-	-	-
College/University	0.0	11.55	-	-	-	-	-	-
High School	0.0	10.50	-	-	-	-	-	-
Elementary School	0.0	5.90	-	-	-	-	-	-
Hospital	0.0	21.70	-	-	-	-	-	-
Miscellaneous	0.0	10.50	-	-	-	-	-	-
Residential (DU)	0.0	5,627	-	-	-	-	-	-
	Total Existing		**-**	**-**	**-**	**-**	**-**	**-**
Project								
Office	0.0	12.95	-	-	-	-	-	-
Retail	0.0	13.55	-	-	-	-	-	-
Hotel/Motel	0.0	9.95	-	-	-	-	-	-
Restaurant	4.6	47.45	218,270.00	0.60	433.02	0.02	0.01	434.95
Food Store	0.0	53.3	-	-	-	-	-	-
Warehouse	0.0	4.35	-	-	-	-	-	-
College/University	11.7	11.55	134,730.75	0.37	267.29	0.01	0.00	268.45
High School	0.0	10.5	-	-	-	-	-	-
Elementary School	0.0	5.9	-	-	-	-	-	-
Hospital	0.0	21.7	-	-	-	-	-	-
Miscellaneous	0.0	10.5	-	-	-	-	-	-
Residential (DU)	232.0	5,627	1,305,348.00	3.58	2,589.67	0.11	0.03	2,600.93
	Total Project		**1,658,348.75**	**4.54**	**3,289.98**	**0.14**	**0.04**	**3,304.33**
	Net Emissions From Electricity Usage				**3,289.98**	**0.14**	**0.04**	**3,304.33**

Natural Gas Usage

Land Use	1,000 Sqft	Natural Gas Usage Rate [d] (cu.ft\sq.ft\mo)	Total Natural Gas Usage (cu.ft\mo)	Total Natural Gas Usage (Btu/day)[f]	CO_2 53.06	CH_4 0.005	N_2O 0.0001	CO_2e 21/310[c]
					Emission Factors (kg/MMBtu) [e]			
Existing					Emissions from Natural Gas (lbs/day)			
Office	0.0	2.0	-	-	-	-	-	-
Retail	0.0	2.9	-	-	-	-	-	-
Hotel/Motel	0.0	4.8	-	-	-	-	-	-
Restaurant	0.0	4.8	-	-	-	-	-	-
Food Store	0.0	2.9	-	-	-	-	-	-
Warehouse	0.0	2.0	-	-	-	-	-	-
College/University	0.0	4.8	-	-	-	-	-	-
High School	0.0	2.9	-	-	-	-	-	-
Elementary School	0.0	2.0	-	-	-	-	-	-
Hospital	0.0	4.8	-	-	-	-	-	-
Miscellaneous	0.0	2.9	-	-	-	-	-	-
Residential (Single Family DU)	0.0	6,665	-	-	-	-	-	-
Residential (Multi-Family DU)	0.0	4,012	-	-	-	-	-	-
	Total Existing		**-**	**-**	**-**	**-**	**-**	**-**
Project								
Office	0.0	2.0	-	-	-	-	-	-
Retail	0.0	2.9	-	-	-	-	-	-
Hotel/Motel	0.0	4.8	-	-	-	-	-	-
Restaurant	4.6	4.8	-	-	-	-	-	-
Food Store	0.0	2.9	-	-	-	-	-	-
Warehouse	0.0	2.0	-	-	-	-	-	-
College/University	11.7	4.8	**55,992.00**	**1,914,926.40**	224.00	0.02	0.00	224.58
High School	0.0	2.9	-	-	-	-	-	-
Elementary School	0.0	2.0	-	-	-	-	-	-
Hospital	0.0	4.8	-	-	-	-	-	-
Miscellaneous	0.0	2.9	-	-	-	-	-	-
Residential (Single Family DU)	232.0	6,665	**1,546,280.00**	**52,882,776.00**	6,186.08	0.58	0.01	6,201.93
Residential (Multi-Family DU)	0.0	4,012	-	-	-	-	-	-
	Total Project		**1,602,272.00**	**54,797,702.40**	**6,410.08**	**0.60**	**0.01**	**6,426.51**
	Net Emissions From Natural Gas Usage				**6,410.08**	**0.60**	**0.01**	**6,426.51**

Summary of Stationary Emissions

	CO_2	CH_4	N_2O	CO_2e
Total Existing Emissions (lbs/day)	-	-	-	-
Total Project Emissions (lbs/day)	9,700.06	0.74	0.05	9,730.84
Total Net Emissions (lbs/day)	**9,700.06**	**0.74**	**0.05**	**9,730.84**

[a] Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

[b] Emission Factors from Table C.2, General Reporting Protocol v3.1, California Climate Action Registry, Jan 2009

[c] Global Warming Potential is 1 for CO2, 21 for CH_4 and 310 for N_2O, General Reporting Protocol v3.1, California Climate Action Registry, Jan 2009.

[d] Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

[e] Emission Factors from Table C.7 and Table C.8, General Reporting Protocol v3.1, California Climate Action Registry, Jan 2009.

[f] 1 Cubic Foot of natural gas = 1,026 Btu. Energy Information Administration. Available http://www.eia.doe.gov/basics/conversion_basics.html

Existing

Vehicle Type	Percent Type	VMT	0
Light Auto			
Light Truck < 3750 lbs			
Light Truck 3751-5750 lbs			
Med Truck 5751-8500 lbs			
Lite-Heavy Truck 8501-10,000 lbs			
Lite-Heavy Truck 10,001-14,000 lbs			
Med-Heavy Truck 14,001-33,000 lbs			
Heavy-Heavy Truck 33,001-60,000 lbs			
Other Bus			
Urban Bus			
Motorcycle			
School Bus			
Motor Home			

Proposed **VMT** 28694.17

Vehicle Type	Percent Type	
Light Auto	60.5	
Light Truck < 3750 lbs	17	
Light Truck 3751-5750 lbs	18.3	
Med Truck 5751-8500 lbs	0.3	
Lite-Heavy Truck 8501-10,000 lbs	0.1	
Lite-Heavy Truck 10,001-14,000 lbs	0	
Med-Heavy Truck 14,001-33,000 lbs	0	
Heavy-Heavy Truck 33,001-60,000 lbs	0	
Other Bus	0	note: fleet matches URBEMIS and LRDP EIR fleet mix
Urban Bus	0.2	
Motorcycle	1.8	
School Bus	0.1	
Motor Home	1.7	

Mobile Sources

Vehicle Type	Percent Type	VMT by Type	Emission Factors [a] CH$_4$	Emission Factors [a] N$_2$O	CH$_4$	N$_2$O	CO$_2$e 21/310[b]
	0	0					
Existing					**Emissions from Mobile Sources (lbs/day)**		
Light Auto	0.0	-	0.04	0.04	-	-	-
Light Truck < 3750 lbs	0.0	-	0.05	0.06	-	-	-
Light Truck 3751-5750 lbs	0.0	-	0.05	0.06	-	-	-
Med Truck 5751-8500 lbs	0.0	-	0.12	0.20	-	-	-
Lite-Heavy Truck 8501-10,000 lbs	0.0	-	0.12	0.20	-	-	-
Lite-Heavy Truck 10,001-14,000 lbs	0.0	-	0.12	0.20	-	-	-
Med-Heavy Truck 14,001-33,000 lbs	0.0	-	0.06	0.05	-	-	-
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	-	0.06	0.05	-	-	-
Other Bus	0.0	-	0.06	0.05	-	-	-
Urban Bus	0.0	-	0.06	0.05	-	-	-
Motorcycle	0.0	-	0.09	0.01	-	-	-
School Bus	0.0	-	0.06	0.05	-	-	-
Motor Home	0.0	-	0.05	0.06	-	-	-
Total Existing			**0.94**	**1.08**	**-**	**-**	**-**

Vehicle Type	Percent Type	VMT by Type	Emission Factors [a] CH$_4$	Emission Factors [a] N$_2$O	CH$_4$	N$_2$O	CO$_2$e 21/310[b]
	100	28694.17					
Project							
Light Auto	60.5	17,359.97	0.04	0.04	1.53	1.53	506.72
Light Truck < 3750 lbs	17.0	4,878.01	0.05	0.06	0.54	0.65	211.32
Light Truck 3751-5750 lbs	18.3	5,251.03	0.05	0.06	0.58	0.69	227.48
Med Truck 5751-8500 lbs	0.3	86.08	0.12	0.20	0.02	0.04	12.24
Lite-Heavy Truck 8501-10,000 lbs	0.1	28.69	0.12	0.20	0.01	0.01	4.08
Lite-Heavy Truck 10,001-14,000 lbs	0.0	-	0.12	0.20	-	-	-
Med-Heavy Truck 14,001-33,000 lbs	0.0	-	0.06	0.05	-	-	-
Heavy-Heavy Truck 33,001-60,000 lbs	0.0	-	0.06	0.05	-	-	-
Other Bus	0.0	-	0.06	0.05	-	-	-
Urban Bus	0.2	57.39	0.06	0.05	0.01	0.01	2.12
Motorcycle	1.8	516.50	0.09	0.01	0.10	0.01	5.68
School Bus	0.1	28.69	0.06	0.05	0.00	0.00	1.06
Motor Home	1.7	487.80	0.05	0.06	0.05	0.06	21.13
Total Project			**0.94**	**1.08**	**2.85**	**3.01**	**991.84**
Net Emissions From Mobile Sources					**2.85**	**3.01**	**991.84**

[a] Emission factors from Table C.4, General Reporting Protocol, California Climate Action Registry, March 2007.

[b] Global Warming Potential is 1 for CO2, 21 for CH_4, and 310 for N_2O, General Reporting Protocol v3.1, California Climate Action Registry, Jan 2009.

GHGs associated with Water Use

Water Importation using CAMX emission factors

SWP Energy Intensity:	SWP west branch	9,232	kWh/MG (includes losses)
MWD Energy Intensity:	MWD west branch	1,013	kWh/MG (includes losses)
Southern California Average	N/A	9,727	kWh/MG (includes losses)

Category	Water acre/ft	Energy Use (kWh) Importation	CH4	N2O	CO2 (kg/year)	CO2e (metric tons/year)
Imported from SWP		0	0.00	0.00	0	0
Imported from MWD		0	0.00	0.00	0	0
OR						
Southern California Average	64	201,443	2.76	0.74	65,148	65

For all other Sources:

Emission Factor: CO2	0.323405	kg/kWh	CAMX (eGRID)
Emission Factor: CH4	0.000014	kg/kWh	CAMX (eGRID)
Emission Factor: N2O	0.000004	kg/kWh	CAMX (eGRID)

Water Distribution (pumping)

Energy Intensity: 1,272 kWh/MG (includes losses)

	Water acre/ft	Energy Use (kWh) Distribution	CH4	N2O	CO2 (kg/year)	CO2e (metric tons/year)
	64	26,343	0.36	0.10	8,519	9

Water Treatment

Energy Intensity: 111 kWh/MG (includes losses)

Year	Water acre/ft	Energy Use (kWh) treatment	CH4	N2O	CO2 (kg/year)	CO2e (metric tons/year)
	6	230	0.00	0.00	74	0

Wastewater Treatment

Energy Intensity: 1,911 kWh/MG (includes losses)

	Water acre/ft	Energy Use (kWh) wastewater treatment	CH4	N2O	CO2 (kg/year)	CO2e (metric tons/year)
	6	3,958	0.05	0.01	1,280	1

Summary

Category	**Energy Use** (kWh)	**CO2e** (metric tons/year)
Water Supply and Conveyance	201,443	65
Water Treatment	230	0
Water Distribution	26,343	9
Wastewater Treatment	3,958	1
Total	**231,973**	**75.4**

Water Use Calculation

70	gallons/day/student
810	students
56700	gallons/day
0.0567	MG/day
20.709675	MG/yr
63.5556589	AF/yr

Total estimated GHG emissions from construction

	Input Emissions					
	Off Road Emissions			On road Emissions		
Year of Construction	**CO2 (metric tons/yr)**	**CH4 (metric tons/yr)**	**N2O (metric tons/yr)**	**CO2 (metric tons/yr)**	**Other (metric tons/yr)**	**CO2e (metric tons/yr)**
2011	1,138.5	0.1	0.0	514.5	27.1	1,690.6
2012	2,284.9	0.1	0.1	1,091.4	57.4	3,454.6
2013	564.0	0.0	0.0	230.5	12.1	811.8
Total Construction Emissions	**3,987.4**	**0.2**	**0.1**	**1,836.5**	**96.7**	**5,957.0**
Sources: URBEMIS 2007; CCAR 2009.					30-yr amortize =	*198.6*

Diesel Fuel	**CO2**	**CH4**	**N2O**
kg CO2/gal diesel	10.15	0.00058	0.00026
g/gal diesel construction equip		0.58	0.26
ratio	1	5.71429E-05	2.56158E-05

Source: CH4 and N2O from Construction, CCAR General Reporting Protocol, V3.1

tons/metric ton	Percent other	GAS	CH4	N2O
0.90718474	5.00%	GWP	21	310

Title   : Riverside County Avg Annual CYr 2015 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2010/12/07 16:57:21
Scen Year: 2015 -- All model years in the range 1971 to 2015 selected
Season   : Annual
Area   : Riverside
****

Year: 2015 -- Model Years 1971 to 2015 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Riverside   County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide   Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
3	2.599	4.308	6.695	14.452	26.271	27.934	4.354
4	2.527	4.175	6.531	14.452	26.271	27.934	4.256
5	2.458	4.050	6.378	14.452	26.271	27.934	4.164
6	2.393	3.931	6.055	13.360	23.978	26.884	3.993
7	2.331	3.819	5.760	12.354	21.936	25.920	3.833
8	2.272	3.713	5.491	11.430	20.115	25.034	3.685
9	2.216	3.612	5.244	10.579	18.488	24.220	3.547
10	2.163	3.517	5.017	9.798	17.032	23.472	3.418
11	2.112	3.426	4.809	9.080	15.727	22.786	3.298
12	2.063	3.340	4.616	8.423	14.555	22.156	3.186
13	2.016	3.258	4.439	7.822	13.503	21.580	3.081
14	1.971	3.180	4.275	7.274	12.555	21.053	2.983
15	1.928	3.105	4.122	6.777	11.701	20.572	2.892
16	1.887	3.034	3.981	6.327	10.930	20.134	2.806
17	1.848	2.966	3.850	5.922	10.234	19.738	2.726
18	1.810	2.901	3.728	5.561	9.604	19.381	2.652
19	1.773	2.839	3.614	5.232	9.034	19.060	2.581
20	1.738	2.779	3.508	5.015	8.517	18.775	2.519
21	1.704	2.722	3.409	4.814	8.049	18.523	2.460
22	1.672	2.668	3.316	4.627	7.623	18.305	2.405
23	1.640	2.615	3.230	4.452	7.237	18.118	2.352
24	1.610	2.565	3.148	4.290	6.886	17.962	2.302
25	1.581	2.517	3.072	4.139	6.567	17.836	2.254
26	1.553	2.470	3.001	3.998	6.278	17.741	2.209
27	1.525	2.426	2.934	3.867	6.015	17.675	2.166
28	1.499	2.383	2.871	3.745	5.776	17.638	2.125
29	1.474	2.342	2.812	3.632	5.560	17.631	2.087
30	1.450	2.302	2.757	3.527	5.364	17.655	2.050
31	1.426	2.265	2.705	3.429	5.186	17.708	2.015
32	1.403	2.228	2.657	3.338	5.027	17.793	1.982
33	1.381	2.193	2.611	3.255	4.883	17.910	1.951
34	1.360	2.160	2.569	3.178	4.754	18.060	1.921
35	1.340	2.128	2.529	3.107	4.639	18.245	1.893
36	1.320	2.097	2.492	3.042	4.538	18.465	1.867
37	1.301	2.068	2.457	2.984	4.448	18.723	1.842
38	1.283	2.039	2.426	2.930	4.371	19.020	1.819
39	1.265	2.012	2.396	2.883	4.305	19.359	1.798
40	1.249	1.987	2.369	2.840	4.249	19.743	1.778

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   1

                JOB: ABERDEEN DR AND LINDEN ST AM NP
                RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     2  -450     2  -150 *  AG   291   2.1     .0  10.5
B. NA           *     2  -150     2     0 *  AG    34   3.7     .0   9.9
C. ND           *     2     0     2   150 *  AG     0   2.4     .0   9.9
D. NE           *     2   150     2   450 *  AG     0   2.1     .0  10.5
E. SF           *    -2   450    -2   150 *  AG     0   2.1     .0  10.5
F. SA           *    -2   150    -2     0 *  AG     0   3.7     .0   9.9
G. SD           *    -2     0    -2  -150 *  AG   422   2.5     .0   9.9
H. SE           *    -2  -150    -2  -450 *  AG   422   2.1     .0  10.5
I. WF           *   450     2   150     2 *  AG   100   2.1     .0  10.5
J. WA           *   150     2     0     2 *  AG    45   2.9     .0   9.9
K. WD           *     0     2  -150     2 *  AG   302   2.2     .0   9.9
L. WE           *  -150     2  -450     2 *  AG   302   2.1     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG   418   2.1     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG   418   3.0     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    85   2.2     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    85   2.1     .0  10.5
Q. NL           *     0     0     2  -150 *  AG   257   3.7     .0   9.9
R. SL           *     0     0    -2   150 *  AG     0   3.7     .0   9.9
S. WL           *     0     0   150     2 *  AG    55   2.9     .0   9.9
T. EL           *     0     0  -150    -2 *  AG     0   2.9     .0   9.9
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: ABERDEEN DR AND LINDEN ST AM NP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.4	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	274.	.5	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	175.	.5	.0	.0	.0	.0	.0	.0	.3	.0
4. NW3	176.	.6	.0	.0	.0	.0	.0	.0	.2	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
4. NW3	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: ABERDEEN DR  AND LINDENST PM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *  X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NF           *     2  -450     2  -150 *  AG    544   2.1     .0  10.5
 B. NA           *     2  -150     2     0 *  AG     22   3.3     .0   9.9
 C. ND           *     2     0     2   150 *  AG      0   2.3     .0   9.9
 D. NE           *     2   150     2   450 *  AG      0   2.1     .0  10.5
 E. SF           *    -2   450    -2   150 *  AG      0   2.1     .0  10.5
 F. SA           *    -2   150    -2     0 *  AG      0   3.3     .0   9.9
 G. SD           *    -2     0    -2  -150 *  AG    408   2.3     .0   9.9
 H. SE           *    -2  -150    -2  -450 *  AG    408   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG     81   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG     61   3.3     .0   9.9
 K. WD           *     0     2  -150     2 *  AG    583   2.5     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG    583   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG    441   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG    441   3.4     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG     75   2.3     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG     75   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG    522   3.6     .0   9.9
 R. SL           *     0     0    -2   150 *  AG      0   3.3     .0   9.9
 S. WL           *     0     0   150     2 *  AG     20   3.3     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG      0   3.3     .0   9.9
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: ABERDEEN DR AND LINDENST PM NP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	266.	.5	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	274.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	175.	.6	.0	.0	.0	.0	.0	.0	.2	.0
4. NW3	175.	.7	.0	.0	.0	.0	.0	.0	.2	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.1	.0	.0	.3	.0	.0	.1	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
4. NW3	.0	.0	.1	.0	.0	.0	.0	.0	.3	.0	.0	.0

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   1

                JOB: ABERDEEN DR AND CAMPUS DR AM NP
                RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)  *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*------------------------*----------------------------
 A. NF           *     2  -450     2  -150 *  AG      0   2.1     .0  10.5
 B. NA           *     2  -150     2     0 *  AG      0   3.0     .0   9.9
 C. ND           *     2     0     2   150 *  AG    231   2.2     .0   9.9
 D. NE           *     2   150     2   450 *  AG    231   2.1     .0  10.5
 E. SF           *    -2   450    -2   150 *  AG    434   2.1     .0  10.5
 F. SA           *    -2   150    -2     0 *  AG     64   3.0     .0   9.9
 G. SD           *    -2     0    -2  -150 *  AG      0   2.2     .0   9.9
 H. SE           *    -2  -150    -2  -450 *  AG      0   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG    234   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG    234   3.6     .0   9.9
 K. WD           *     0     2  -150     2 *  AG     84   2.4     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG     84   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG     39   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG     22   3.6     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG    392   2.5     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG    392   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG      0   3.0     .0   9.9
 R. SL           *     0     0    -2   150 *  AG    370   3.1     .0   9.9
 S. WL           *     0     0   150     2 *  AG      0   3.6     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG     17   3.6     .0   9.9
```

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           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: ABERDEEN DR AND CAMPUS DR AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	355.	.4	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	355.	.5	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	4.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	94.	.5	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. NW3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: ABERDEEN DR AND CAMPUS DR PM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
       U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	*	2	-450	2	-150	*	AG	0	2.1	.0	10.5
B. NA	*	2	-150	2	0	*	AG	0	3.6	.0	9.9
C. ND	*	2	0	2	150	*	AG	555	3.1	.0	9.9
D. NE	*	2	150	2	450	*	AG	555	2.1	.0	10.5
E. SF	*	-2	450	-2	150	*	AG	391	2.1	.0	10.5
F. SA	*	-2	150	-2	0	*	AG	68	3.6	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	0	2.4	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	0	2.1	.0	10.5
I. WF	*	450	2	150	2	*	AG	521	2.1	.0	10.5
J. WA	*	150	2	0	2	*	AG	521	3.2	.0	9.9
K. WD	*	0	2	-150	2	*	AG	98	2.2	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	98	2.1	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	104	2.1	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	40	3.0	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	363	2.2	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	363	2.1	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	0	3.6	.0	9.9
R. SL	*	0	0	-2	150	*	AG	323	3.7	.0	9.9
S. WL	*	0	0	150	2	*	AG	0	3.0	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	64	3.0	.0	9.9

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: ABERDEEN DR AND CAMPUS DR PM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	355.	.7	.0	.0	.4	.0	.0	.0	.0	.0
2. SE3	356.	.8	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	5.	.5	.0	.0	.2	.0	.0	.0	.0	.0
4. NW3	94.	.7	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. NW3	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CAMPUS DR AND BIG SPRINGS RD AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*-----------------------------
A. NF          *     2  -450     2  -150 *  AG    204   2.1     .0  10.5
B. NA          *     2  -150     2     0 *  AG    204   2.7     .0   9.9
C. ND          *     2     0     2   150 *  AG    236   2.2     .0   9.9
D. NE          *     2   150     2   450 *  AG    236   2.1     .0  10.5
E. SF          *    -2   450    -2   150 *  AG    285   2.1     .0  10.5
F. SA          *    -2   150    -2     0 *  AG    193   2.7     .0   9.9
G. SD          *    -2     0    -2  -150 *  AG    289   2.2     .0   9.9
H. SE          *    -2  -150    -2  -450 *  AG    289   2.1     .0  10.5
I. WF          *   450     2   150     2 *  AG    185   2.1     .0  10.5
J. WA          *   150     2     0     2 *  AG     89   3.8     .0   9.9
K. WD          *     0     2  -150     2 *  AG      0   2.5     .0   9.9
L. WE          *  -150     2  -450     2 *  AG      0   2.1     .0  10.5
M. EF          *  -450    -2  -150    -2 *  AG      0   2.1     .0  10.5
N. EA          *  -150    -2     0    -2 *  AG      0   3.8     .0   9.9
O. ED          *     0    -2   150    -2 *  AG    149   2.5     .0   9.9
P. EE          *   150    -2   450    -2 *  AG    149   2.1     .0  10.5
Q. NL          *     0     0     2  -150 *  AG      0   2.7     .0   9.9
R. SL          *     0     0    -2   150 *  AG     92   2.7     .0   9.9
S. WL          *     0     0   150     2 *  AG     96   3.8     .0   9.9
T. EL          *     0     0  -150    -2 *  AG      0   3.8     .0   9.9
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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: CAMPUS DR AND BIG SPRINGS RD AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. SE3	356.	.4	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	86.	.3	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	94.	.3	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CAMPUS DR AND BIG SPRINGS RD PM NP
              RUN: Hour 1            (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)    *              EF     H     W
  DESCRIPTION   *   X1     Y1     X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *      2   -450      2  -150 *  AG   476   2.1     .0  10.5
B. NA           *      2   -150      2     0 *  AG   476   2.9     .0   9.9
C. ND           *      2      0      2   150 *  AG   488   2.2     .0   9.9
D. NE           *      2    150      2   450 *  AG   488   2.1     .0  10.5
E. SF           *     -2    450     -2   150 *  AG   365   2.1     .0  10.5
F. SA           *     -2    150     -2     0 *  AG   247   2.7     .0   9.9
G. SD           *     -2      0     -2  -150 *  AG   357   2.2     .0   9.9
H. SE           *     -2   -150     -2  -450 *  AG   357   2.1     .0  10.5
I. WF           *    450      2    150     2 *  AG   281   2.1     .0  10.5
J. WA           *    150      2      0     2 *  AG   171   4.0     .0   9.9
K. WD           *      0      2   -150     2 *  AG     0   2.5     .0   9.9
L. WE           *   -150      2   -450     2 *  AG     0   2.1     .0  10.5
M. EF           *   -450     -2   -150    -2 *  AG     0   2.1     .0  10.5
N. EA           *   -150     -2      0    -2 *  AG     0   4.0     .0   9.9
O. ED           *      0     -2    150    -2 *  AG   277   2.9     .0   9.9
P. EE           *    150     -2    450    -2 *  AG   277   2.1     .0  10.5
Q. NL           *      0      0      2  -150 *  AG     0   2.7     .0   9.9
R. SL           *      0      0     -2   150 *  AG   118   2.7     .0   9.9
S. WL           *      0      0    150     2 *  AG   110   4.0     .0   9.9
T. EL           *      0      0   -150    -2 *  AG     0   4.0     .0   9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: CAMPUS DR AND BIG SPRINGS RD PM NP
              RUN: Hour 1            (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *      8      8   1.8
2. SE3      *      8     -8   1.8
3. SW3      *     -8     -8   1.8
4. NW3      *     -8      8   1.8


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
1. NE3      *  184. *    .6 *   .0   .3   .0   .0   .0   .0   .0   .0
2. SE3      *  356. *    .6 *   .0   .0   .2   .0   .0   .0   .0   .0
3. SW3      *   85. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
4. NW3      *   94. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0


            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
4. NW3      *   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: AWATKINS DR AND BIG SPRINGS RD AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *  X1     Y1     X2     Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*------------------------------
A. NF          *     2  -450      2  -150 *  AG    852   2.1     .0  10.5
B. NA          *     2  -150      2     0 *  AG    647   3.0     .0   9.9
C. ND          *     2     0      2   150 *  AG    767   2.3     .0   9.9
D. NE          *     2   150      2   450 *  AG    767   2.1     .0  10.5
E. SF          *    -2   450     -2   150 *  AG    409   2.1     .0  10.5
F. SA          *    -2   150     -2     0 *  AG    357   2.8     .0   9.9
G. SD          *    -2     0     -2  -150 *  AG    325   2.2     .0   9.9
H. SE          *    -2  -150     -2  -450 *  AG    325   2.1     .0  10.5
I. WF          *   450     2    150     2 *  AG    214   2.1     .0  10.5
J. WA          *   150     2      0     2 *  AG    170   4.2     .0   9.9
K. WD          *     0     2   -150     2 *  AG    358   4.4     .0   9.9
L. WE          *  -150     2   -450     2 *  AG    358   2.1     .0  10.5
M. EF          *  -450    -2   -150    -2 *  AG     79   2.1     .0  10.5
N. EA          *  -150    -2      0    -2 *  AG     47   4.2     .0   9.9
O. ED          *     0    -2    150    -2 *  AG    104   2.7     .0   9.9
P. EE          *   150    -2    450    -2 *  AG    104   2.1     .0  10.5
Q. NL          *     0     0      2  -150 *  AG    205   2.7     .0   9.9
R. SL          *     0     0     -2   150 *  AG     52   2.7     .0   9.9
S. WL          *     0     0    150     2 *  AG     44   4.2     .0   9.9
T. EL          *     0     0   -150    -2 *  AG     32   4.2     .0   9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: AWATKINS DR AND BIG SPRINGS RD AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.8	.0	.4	.0	.0	.0	.0	.0	.0
2. SE3	356.	.7	.0	.0	.3	.0	.0	.0	.0	.0
3. SW3	4.	.6	.0	.0	.1	.0	.0	.2	.0	.0
4. NW3	175.	.7	.0	.2	.0	.0	.0	.0	.2	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
             CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                      JUNE 1989 VERSION
                      PAGE   1

                 JOB: AWATKINS DR AND BIG SPRINGS RD PM NP
                 RUN: Hour 1           (WORST CASE ANGLE)
           POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NF           *     2  -450     2  -150 *  AG    457   2.1     .0  10.5
 B. NA           *     2  -150     2     0 *  AG    387   3.0     .0   9.9
 C. ND           *     2     0     2   150 *  AG    586   2.3     .0   9.9
 D. NE           *     2   150     2   450 *  AG    586   2.1     .0  10.5
 E. SF           *    -2   450    -2   150 *  AG    900   2.1     .0  10.5
 F. SA           *    -2   150    -2     0 *  AG    784   3.6     .0   9.9
 G. SD           *    -2     0    -2  -150 *  AG   1178   2.8     .0   9.9
 H. SE           *    -2  -150    -2  -450 *  AG   1178   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG    281   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG    101   3.7     .0   9.9
 K. WD           *     0     2  -150     2 *  AG    166   2.4     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG    166   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG    474   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG    329   3.7     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG    182   2.4     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG    182   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG     70   2.9     .0   9.9
 R. SL           *     0     0    -2   150 *  AG    116   2.9     .0   9.9
 S. WL           *     0     0   150     2 *  AG    180   3.7     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG    145   3.7     .0   9.9
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: AWATKINS DR AND BIG SPRINGS RD PM NP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	.8	.0	.2	.0	.0	.0	.0	.3	.0
2. SE3	355.	.8	.0	.0	.3	.0	.0	.3	.0	.0
3. SW3	4.	1.1	.0	.0	.1	.0	.0	.6	.0	.0
4. NW3	176.	1.1	.0	.1	.0	.0	.0	.0	.6	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: ABERDEEN DR  AND LINDENST AM WP
             RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
       U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	301	2.1	.0	10.5
B. NA	2	-150	2	0	AG	34	3.7	.0	9.9
C. ND	2	0	2	150	AG	0	2.4	.0	9.9
D. NE	2	150	2	450	AG	0	2.1	.0	10.5
E. SF	-2	450	-2	150	AG	0	2.1	.0	10.5
F. SA	-2	150	-2	0	AG	0	3.7	.0	9.9
G. SD	-2	0	-2	-150	AG	430	2.5	.0	9.9
H. SE	-2	-150	-2	-450	AG	430	2.1	.0	10.5
I. WF	450	2	150	2	AG	100	2.1	.0	10.5
J. WA	150	2	0	2	AG	45	2.9	.0	9.9
K. WD	0	2	-150	2	AG	312	2.2	.0	9.9
L. WE	-150	2	-450	2	AG	312	2.1	.0	10.5
M. EF	-450	-2	-150	-2	AG	426	2.1	.0	10.5
N. EA	-150	-2	0	-2	AG	426	3.0	.0	9.9
O. ED	0	-2	150	-2	AG	85	2.2	.0	9.9
P. EE	150	-2	450	-2	AG	85	2.1	.0	10.5
Q. NL	0	0	2	-150	AG	267	3.7	.0	9.9
R. SL	0	0	-2	150	AG	0	3.7	.0	9.9
S. WL	0	0	150	2	AG	55	2.9	.0	9.9
T. EL	0	0	-150	-2	AG	0	2.9	.0	9.9

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: ABERDEEN DR  AND LINDENST AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

              *    COORDINATES (M)
   RECEPTOR   *    X      Y      Z
 -------------*---------------------
 1. NE3       *      8      8   1.8
 2. SE3       *      8     -8   1.8
 3. SW3       *     -8     -8   1.8
 4. NW3       *     -8      8   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                 CONC/LINK
              *  BRG  * CONC  *                   (PPM)
  RECEPTOR    * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3       *  184. *    .4 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3       *  274. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3       *  175. *    .5 *   .0   .0   .0   .0   .0   .0   .3   .0
 4. NW3       *  176. *    .6 *   .0   .0   .0   .0   .0   .0   .2   .0


              *                          CONC/LINK
              *                            (PPM)
  RECEPTOR    *   I    J    K    L    M    N    O    P    Q    R    S    T
 -------------*------------------------------------------------------------
 1. NE3       *   .0   .0   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0
 2. SE3       *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3       *   .0   .0   .0   .0   .0   .0   .0   .0   .1   .0   .0   .0
 4. NW3       *   .0   .0   .0   .0   .0   .0   .0   .0   .1   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: ABERDEEN DR  AND LINDENST PM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S            Z0= 100. CM           ALT=     0. (M)
       BRG= WORST CASE           VD=   .0 CM/S
      CLAS=     7 (G)            VS=   .0 CM/S
      MIXH= 1000. M             AMB=   .0 PPM
     SIGTH=    5. DEGREES      TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *  X1     Y1     X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
 A. NF          *     2  -450     2  -150 *  AG    569   2.1     .0  10.5
 B. NA          *     2  -150     2     0 *  AG     22   3.3     .0   9.9
 C. ND          *     2     0     2   150 *  AG      0   2.3     .0   9.9
 D. NE          *     2   150     2   450 *  AG      0   2.1     .0  10.5
 E. SF          *    -2   450    -2   150 *  AG      0   2.1     .0  10.5
 F. SA          *    -2   150    -2     0 *  AG      0   3.3     .0   9.9
 G. SD          *    -2     0    -2  -150 *  AG    428   2.3     .0   9.9
 H. SE          *    -2  -150    -2  -450 *  AG    428   2.1     .0  10.5
 I. WF          *   450     2   150     2 *  AG     81   2.1     .0  10.5
 J. WA          *   150     2     0     2 *  AG     61   3.3     .0   9.9
 K. WD          *     0     2  -150     2 *  AG    608   2.5     .0   9.9
 L. WE          *  -150     2  -450     2 *  AG    608   2.1     .0  10.5
 M. EF          *  -450    -2  -150    -2 *  AG    461   2.1     .0  10.5
 N. EA          *  -150    -2     0    -2 *  AG    461   3.6     .0   9.9
 O. ED          *     0    -2   150    -2 *  AG     75   2.3     .0   9.9
 P. EE          *   150    -2   450    -2 *  AG     75   2.1     .0  10.5
 Q. NL          *     0     0     2  -150 *  AG    547   3.6     .0   9.9
 R. SL          *     0     0    -2   150 *  AG      0   3.3     .0   9.9
 S. WL          *     0     0   150     2 *  AG     20   3.3     .0   9.9
 T. EL          *     0     0  -150    -2 *  AG      0   3.3     .0   9.9
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: ABERDEEN DR AND LINDENST PM WP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	266.	.6	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	274.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	274.	.6	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	175.	.8	.0	.0	.0	.0	.0	.0	.2	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.1	.0	.0	.3	.0	.0	.1	.0	.0	.0
3. SW3	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.1	.0	.0	.0	.0	.0	.3	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: ABERDEEN DR AND CAMPUS DR AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
 A. NF           *     2  -450     2  -150 *  AG      0   2.1     .0  10.5
 B. NA           *     2  -150     2     0 *  AG      0   3.0     .0   9.9
 C. ND           *     2     0     2   150 *  AG    241   2.2     .0   9.9
 D. NE           *     2   150     2   450 *  AG    241   2.1     .0  10.5
 E. SF           *    -2   450    -2   150 *  AG    442   2.1     .0  10.5
 F. SA           *    -2   150    -2     0 *  AG     64   3.0     .0   9.9
 G. SD           *    -2     0    -2  -150 *  AG      0   2.2     .0   9.9
 H. SE           *    -2  -150    -2  -450 *  AG      0   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG    244   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG    244   3.6     .0   9.9
 K. WD           *     0     2  -150     2 *  AG     84   2.4     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG     84   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG     39   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG     22   3.6     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG    400   2.5     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG    400   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG      0   3.0     .0   9.9
 R. SL           *     0     0    -2   150 *  AG    378   3.1     .0   9.9
 S. WL           *     0     0   150     2 *  AG      0   3.6     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG     17   3.6     .0   9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: ABERDEEN DR AND CAMPUS DR AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	355.	.4	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	355.	.5	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	4.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	94.	.5	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. NW3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: ABERDEEN DR AND CAMPUS DR PM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

       U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

    LINK       *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*----------------------------
A. NF          *     2  -450     2  -150 *  AG     0   2.1     .0  10.5
B. NA          *     2  -150     2     0 *  AG     0   3.6     .0   9.9
C. ND          *     2     0     2   150 *  AG   580   3.0     .0   9.9
D. NE          *     2   150     2   450 *  AG   580   2.1     .0  10.5
E. SF          *    -2   450    -2   150 *  AG   411   2.1     .0  10.5
F. SA          *    -2   150    -2     0 *  AG    68   3.6     .0   9.9
G. SD          *    -2     0    -2  -150 *  AG     0   2.4     .0   9.9
H. SE          *    -2  -150    -2  -450 *  AG     0   2.1     .0  10.5
I. WF          *   450     2   150     2 *  AG   546   2.1     .0  10.5
J. WA          *   150     2     0     2 *  AG   546   3.2     .0   9.9
K. WD          *     0     2  -150     2 *  AG    98   2.2     .0   9.9
L. WE          *  -150     2  -450     2 *  AG    98   2.1     .0  10.5
M. EF          *  -450    -2  -150    -2 *  AG   104   2.1     .0  10.5
N. EA          *  -150    -2     0    -2 *  AG    40   3.0     .0   9.9
O. ED          *     0    -2   150    -2 *  AG   383   2.3     .0   9.9
P. EE          *   150    -2   450    -2 *  AG   383   2.1     .0  10.5
Q. NL          *     0     0     2  -150 *  AG     0   3.6     .0   9.9
R. SL          *     0     0    -2   150 *  AG   343   3.7     .0   9.9
S. WL          *     0     0   150     2 *  AG     0   3.0     .0   9.9
T. EL          *     0     0  -150    -2 *  AG    64   3.0     .0   9.9
```

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           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: ABERDEEN DR AND CAMPUS DR PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	355.	.7	.0	.0	.4	.0	.0	.0	.0	.0
2. SE3	356.	.8	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	5.	.6	.0	.0	.2	.0	.0	.0	.0	.0
4. NW3	94.	.7	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
4. NW3	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CAMPUS DR AND BIG SPRINGS RD AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S            Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE           VD=   .0 CM/S
     CLAS=     7 (G)            VS=   .0 CM/S
     MIXH= 1000. M             AMB=   .0 PPM
    SIGTH=    5. DEGREES      TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-----------------------------
A. NF           *     2  -450     2  -150 *  AG    212   2.1     .0  10.5
B. NA           *     2  -150     2     0 *  AG    212   2.7     .0   9.9
C. ND           *     2     0     2   150 *  AG    246   2.2     .0   9.9
D. NE           *     2   150     2   450 *  AG    246   2.1     .0  10.5
E. SF           *    -2   450    -2   150 *  AG    293   2.1     .0  10.5
F. SA           *    -2   150    -2     0 *  AG    193   2.7     .0   9.9
G. SD           *    -2     0    -2  -150 *  AG    299   2.2     .0   9.9
H. SE           *    -2  -150    -2  -450 *  AG    299   2.1     .0  10.5
I. WF           *   450     2   150     2 *  AG    205   2.1     .0  10.5
J. WA           *   150     2     0     2 *  AG     99   3.8     .0   9.9
K. WD           *     0     2  -150     2 *  AG      0   2.5     .0   9.9
L. WE           *  -150     2  -450     2 *  AG      0   2.1     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG      0   2.1     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG      0   3.8     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    165   2.5     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    165   2.1     .0  10.5
Q. NL           *     0     0     2  -150 *  AG      0   2.7     .0   9.9
R. SL           *     0     0    -2   150 *  AG    100   2.7     .0   9.9
S. WL           *     0     0   150     2 *  AG    106   3.8     .0   9.9
T. EL           *     0     0  -150    -2 *  AG      0   3.8     .0   9.9
```

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: CAMPUS DR AND BIG SPRINGS RD AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. SE3	356.	.4	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	94.	.3	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CAMPUS DR AND BIG SPRINGS RD PM WP
              RUN: Hour 1            (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *                EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NF           *      2  -450     2  -150 *  AG    496   2.1     .0  10.5
 B. NA           *      2  -150     2     0 *  AG    496   2.9     .0   9.9
 C. ND           *      2     0     2   150 *  AG    513   2.2     .0   9.9
 D. NE           *      2   150     2   450 *  AG    513   2.1     .0  10.5
 E. SF           *     -2   450    -2   150 *  AG    385   2.1     .0  10.5
 F. SA           *     -2   150    -2     0 *  AG    247   2.7     .0   9.9
 G. SD           *     -2     0    -2  -150 *  AG    382   2.2     .0   9.9
 H. SE           *     -2  -150    -2  -450 *  AG    382   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG    331   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG    196   3.8     .0   9.9
 K. WD           *     0     2  -150     2 *  AG      0   2.5     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG      0   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG      0   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG      0   3.8     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG    317   2.7     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG    317   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG      0   2.7     .0   9.9
 R. SL           *     0     0    -2   150 *  AG    138   2.7     .0   9.9
 S. WL           *     0     0   150     2 *  AG    135   3.8     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG      0   3.8     .0   9.9
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: CAMPUS DR AND BIG SPRINGS RD PM WP
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.6	.0	.3	.0	.0	.0	.0	.0	.0
2. SE3	356.	.6	.0	.0	.2	.0	.0	.0	.0	.0
3. SW3	85.	.6	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	94.	.6	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
4. NW3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: WATKINS DR AND BIG SPRINGS AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

       U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *  X1     Y1     X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF            *     2  -450     2  -150 *  AG    860   2.1     .0  10.5
B. NA            *     2  -150     2     0 *  AG    647   3.0     .0   9.9
C. ND            *     2     0     2   150 *  AG    775   2.3     .0   9.9
D. NE            *     2   150     2   450 *  AG    775   2.1     .0  10.5
E. SF            *    -2   450    -2   150 *  AG    415   2.1     .0  10.5
F. SA            *    -2   150    -2     0 *  AG    363   2.8     .0   9.9
G. SD            *    -2     0    -2  -150 *  AG    335   2.2     .0   9.9
H. SE            *    -2  -150    -2  -450 *  AG    335   2.1     .0  10.5
I. WF            *   450     2   150     2 *  AG    216   2.1     .0  10.5
J. WA            *   150     2     0     2 *  AG    172   4.2     .0   9.9
K. WD            *     0     2  -150     2 *  AG    374   4.3     .0   9.9
L. WE            *  -150     2  -450     2 *  AG    374   2.1     .0  10.5
M. EF            *  -450    -2  -150    -2 *  AG     99   2.1     .0  10.5
N. EA            *  -150    -2     0    -2 *  AG     59   4.2     .0   9.9
O. ED            *     0    -2   150    -2 *  AG    106   2.7     .0   9.9
P. EE            *   150    -2   450    -2 *  AG    106   2.1     .0  10.5
Q. NL            *     0     0     2  -150 *  AG    213   2.7     .0   9.9
R. SL            *     0     0    -2   150 *  AG     52   2.7     .0   9.9
S. WL            *     0     0   150     2 *  AG     44   4.2     .0   9.9
T. EL            *     0     0  -150    -2 *  AG     40   4.2     .0   9.9
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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: WATKINS DR AND BIG SPRINGS AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	184.	.8	.0	.4	.0	.0	.0	.0	.0	.0
2. SE3	356.	.7	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	4.	.7	.0	.0	.1	.0	.0	.2	.0	.0
4. NW3	175.	.7	.0	.2	.0	.0	.0	.0	.2	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: AWATKINS DR AND BIG SPRINGS PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
 A. NF           *     2  -450     2  -150 *  AG    477   2.1     .0  10.5
 B. NA           *     2  -150     2     0 *  AG    387   3.1     .0   9.9
 C. ND           *     2     0     2   150 *  AG    606   2.3     .0   9.9
 D. NE           *     2   150     2   450 *  AG    606   2.1     .0  10.5
 E. SF           *    -2   450    -2   150 *  AG    916   2.1     .0  10.5
 F. SA           *    -2   150    -2     0 *  AG    800   3.7     .0   9.9
 G. SD           *    -2     0    -2  -150 *  AG   1203   2.9     .0   9.9
 H. SE           *    -2  -150    -2  -450 *  AG   1203   2.1     .0  10.5
 I. WF           *   450     2   150     2 *  AG    285   2.1     .0  10.5
 J. WA           *   150     2     0     2 *  AG    105   3.6     .0   9.9
 K. WD           *     0     2  -150     2 *  AG    206   2.4     .0   9.9
 L. WE           *  -150     2  -450     2 *  AG    206   2.1     .0  10.5
 M. EF           *  -450    -2  -150    -2 *  AG    524   2.1     .0  10.5
 N. EA           *  -150    -2     0    -2 *  AG    359   3.8     .0   9.9
 O. ED           *     0    -2   150    -2 *  AG    187   2.4     .0   9.9
 P. EE           *   150    -2   450    -2 *  AG    187   2.1     .0  10.5
 Q. NL           *     0     0     2  -150 *  AG     90   2.9     .0   9.9
 R. SL           *     0     0    -2   150 *  AG    116   2.9     .0   9.9
 S. WL           *     0     0   150     2 *  AG    180   3.6     .0   9.9
 T. EL           *     0     0  -150    -2 *  AG    165   3.6     .0   9.9
```

```
            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   2

                JOB: AWATKINS DR AND BIG SPRINGS PM WP
                RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. NE3	185.	.9	.0	.3	.0	.0	.0	.0	.3	.0
2. SE3	355.	.9	.0	.0	.3	.0	.0	.3	.0	.0
3. SW3	4.	1.1	.0	.0	.1	.0	.0	.6	.0	.0
4. NW3	176.	1.2	.0	.1	.0	.0	.0	.0	.7	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

UCR Glen Mor

CO Hotspot at the Parking Structure - 2013

conversions			
ft per meter	0.304878049		source:
ft per mile	5280		
minutes per hour	60		
cubic feet per cubic meter	35.3146667		
divider for dimensions:	4.3	lateral	SJVAPCD ISC3 Guidance
	2.15	vertical	SJVAPCD ISC3 Guidance
CO Conversion Factor	0.0245		EPA
Background CO Concentrations:	5.1	1 hour	SCAMQD CO Concentrations
	3.2	8 hour	SCAMQD CO Concentrations
1 hour to 8 hour persistence factor	0.7		Caltrans CO Protocol

Project Conditions

Number of spaces		597		
Number of levels		3		
Area of Lot:		(ft)	(m)	
	length	400	121.9512195	
	width	170	51.82926829	
	height	21	6.402439024	
			3.201219512	release height of volume source

Initial Lateral Dimension (in SCREEN)	28.361	m	= length of side divided by 4.3
Initial Vertical Dimension (in SCREEN)	2.978	m	= building height divided by 2.15
Max Travel Distance	1710	ft	(length + width x 3 levels)
	0.32	mi	
Assumed Idle Time	1	minute each car	
	0.017	hour	

Emission Factors from EMFAC2007 for Opening Year 2013

Movement	5.166	grams/mile	(1 mph)
Idle	6.121	grams/hour	
Cold Start	11.344	grams/start	(720 minutes)

Emissions

	EF (in g)	activity	emissions (grams/hr)	unit
Starts	11.344	597	6772.368	# of starts
Idle	6.121	9.95	60.90395	idling hrs (cars x 1 minute each)
Movement	5.166	193.3465909	998.8284886	VMT (cars x distance each)
		total	7832.100439	grams/hr
			3600	seconds per hour
			2.175583455	grams per second

Results

	receptor distance (m)									max receptor
	3	7	15	25	50	75	100	200	500	62
SCREEN3 Output (micrograms/m3)	0	0	0	0	0	975.4	780.6	399.6	133.1	1109
factor	2.175583455	2.175583455	2.175583455	2.175583455	2.175583	2.175583455	2.175583455	2.175583	2.175583	2.175583455
new concentration	0	0	0	0	0	2122.064102	1698.260445	869.3631	289.5702	2412.722052
Conversion Factor	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245
Molecular Weight of CO	28.01	28.01	28.01	28.01	28.01	28.01	28.01	28.01	28.01	28.01
max 1 hr concentration from SCREEN	0.0	0.0	0.0	0.0	0.0	1.9	1.5	0.8	0.3	2.1
background 1-hour concentration	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
predicted 1-hour with background	**5.1**	**5.1**	**5.1**	**5.1**	**5.1**	**7.0**	**6.6**	**5.9**	**5.4**	**7.2**
max 1 hr concentration from SCREEN	0.0	0.0	0.0	0.0	0.0	1.9	1.5	0.8	0.3	2.1
1- to 8-hour persistence factor	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
max 8-hr concetration from SCREEN	0.0	0.0	0.0	0.0	0.0	1.3	1.0	0.5	0.2	1.5
background 8-hour concentration	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
predicted 8-hour with background	**3.2**	**3.2**	**3.2**	**3.2**	**3.2**	**4.5**	**4.2**	**3.7**	**3.4**	**4.7**

12/08/10
14:10:55

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

UCR Parking Structure

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =       VOLUME
   EMISSION RATE (G/S)      =      1.00000
   SOURCE HEIGHT (M)        =       3.2000
   INIT. LATERAL DIMEN (M)  =      28.3610
   INIT. VERTICAL DIMEN (M) =       2.9780
   RECEPTOR HEIGHT (M)      =       1.5000
   URBAN/RURAL OPTION       =        URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
     1.   .0000        0      .0     .0      .0     .00     .00     .00
   100.   780.6        5     1.0    1.0 10000.0    3.20   38.13   10.07    NO
   200.   399.6        5     1.0    1.0 10000.0    3.20   47.57   16.36    NO
   300.   251.4        5     1.0    1.0 10000.0    3.20   56.71   22.04    NO
   400.   176.7        5     1.0    1.0 10000.0    3.20   65.58   27.23    NO
   500.   133.1        5     1.0    1.0 10000.0    3.20   74.18   32.03    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
    62.   1109.        5     1.0    1.0 10000.0    3.20   34.55    7.55    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*********************************
*** SCREEN DISCRETE DISTANCES ***
*********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
     3.   .0000        0      .0     .0      .0     .00     .00     .00
     7.   .0000        0      .0     .0      .0     .00     .00     .00
```

```
     15.   .0000        0      .0     .0      .0     .00     .00     .00
     25.   .0000        0      .0     .0      .0     .00     .00     .00
     50.   .0000        0      .0     .0      .0     .00     .00     .00
     75.   975.4        5     1.0    1.0 10000.0    3.20   35.72    8.38    NO
    100.   780.6        5     1.0    1.0 10000.0    3.20   38.13   10.07    NO
    200.   399.6        5     1.0    1.0 10000.0    3.20   47.57   16.36    NO
    500.   133.1        5     1.0    1.0 10000.0    3.20   74.18   32.03    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       1109.           62.        0.


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

Title   : Riverside County Avg Annual CYr 2013 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2010/12/13 11:01:09
Scen Year: 2013 -- All model years in the range 1969 to 2013 selected
Season   : Annual
Area   : Riverside
****

Year: 2013 -- Model Years 1969 to 2013 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average   Riverside   County Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Carbon Monoxide   Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	19.513	43.096	0.000	0.000	6.121
1	3.048	4.828	5.308	14.780	47.969	29.833	5.166
2	3.048	4.828	5.308	14.780	47.969	29.833	5.166
3	3.003	4.749	5.230	14.780	47.969	29.833	5.110
4	2.918	4.598	5.081	14.780	47.969	29.833	5.002
5	2.838	4.457	4.942	14.780	47.969	29.833	4.901

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Carbon Monoxide   Temperature: 60F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.565	0.779	1.312	4.400	7.743	4.380	1.032
10	1.044	1.433	2.454	7.117	14.121	4.882	1.817
20	1.958	2.679	4.624	12.224	26.080	5.865	3.309
30	2.812	3.842	6.645	16.893	36.975	6.820	4.697
40	3.607	4.923	8.515	21.126	46.805	7.747	5.980
50	4.342	5.921	10.234	24.921	55.571	8.647	7.158
60	5.017	6.837	11.804	28.280	63.273	9.518	8.232
120	7.205	9.517	14.570	23.503	52.927	12.304	10.328
180	5.200	7.040	11.591	24.771	54.880	10.907	8.162
240	5.566	7.528	12.352	25.997	56.838	12.454	8.706
300	5.897	7.970	13.045	27.179	58.801	13.848	9.202
360	6.192	8.365	13.668	28.317	60.769	15.088	9.651
420	6.451	8.714	14.223	29.413	62.742	16.175	10.052
480	6.675	9.016	14.708	30.465	64.721	17.108	10.406
540	6.864	9.272	15.124	31.474	66.704	17.889	10.711
600	7.017	9.481	15.472	32.440	68.692	18.515	10.970
660	7.134	9.644	15.750	33.362	70.685	18.989	11.181
720	7.216	9.761	15.959	34.241	72.683	19.309	11.344

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	**Control Measure**	**Guidance**
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		**CONTROL ACTIONS**
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL MEASURES
Earth-moving	(1A)	Cease all active operations; OR
	(2A)	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B)	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	(1B)	Apply chemical stabilizers prior to wind event; OR
	(2B)	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	(3B)	Take the actions specified in Table 2, Item (3c); OR
	(4B)	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C)	Apply chemical stabilizers prior to wind event; OR
	(2C)	Apply water twice per hour during active operation; OR
	(3C)	Stop all vehicular traffic.
Open storage piles	(1D)	Apply water twice per hour; OR
	(2D)	Install temporary coverings.
Paved road track-out	(1E)	Cover all haul vehicles; OR
	(2E)	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

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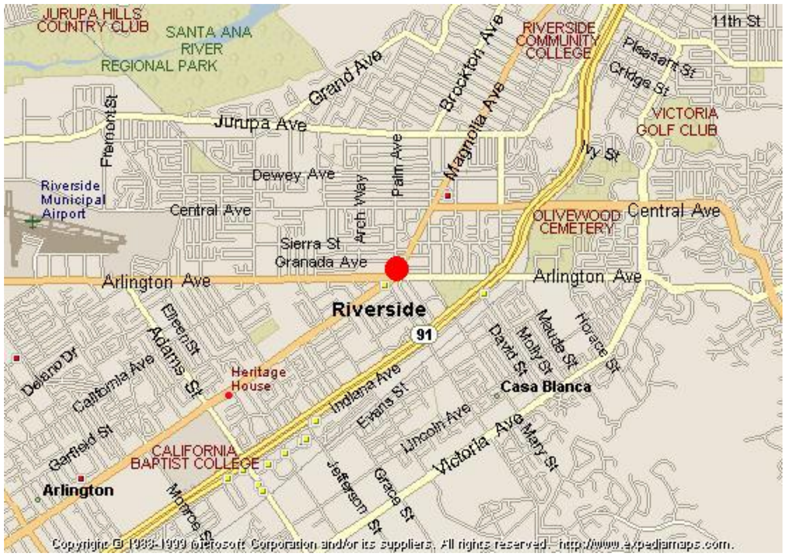
Quality Assurance
Site Information for Riverside-Magnolia

This page last reviewed on June 17, 2010



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060651003	33146	6/1/76	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation
7002 Magnolia Av, Riverside CA 92506	Riverside	South Coast	33° 56' 47"	117° 24' 4"	258

Pollutants Monitored (click on parameter link for real-time data)
CO, NO_2, $PM_{2.5}$, TSP

Site Photos	Photo Sequences	Site Surveys
--Select Photos--	--Select Position And Direction--	--Select Survey--

Other ARB Database Information	Aerial Photos and Topo Maps Of Site
--Select Database--	--Select External Map--

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For real-time air quality data visit: Air Quality and Meteorological Information System (AQMIS)

For further information contact:

Mrs. Merrin Wright, *Manager*
Quality Assurance Section

A department of the California Environmental Protection Agency

Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

Riverside-Magnolia

Year:	2007		2008		2009	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jan 24	2.16	Jan 10	1.93	Feb 22	1.75
Second High:	Dec 15	2.01	Jan 11	1.90	Jan 1	1.60
Third High:	Nov 20	1.86	Feb 8	1.77	Dec 27	1.48
Fourth High:	Dec 30	1.84	Jan 12	1.75	Jan 7	1.47
California:						
First High:	Jan 24	2.16	Jan 9	1.93	Jan 1	1.96
Second High:	Dec 15	2.01	Jan 11	1.90	Feb 22	1.75
Third High:	Nov 19	1.86	Dec 31	1.87	Dec 26	1.48
Fourth High:	Dec 29	1.84	Feb 8	1.77	Jan 7	1.47
# Days Above Nat'l Standard:		0		0		0
# Days Above State Standard:		0		0		0
Year Coverage:		97		96		97

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM2.5 | PM10 | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Welcome to California

Air Resources Board

iADAM

Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

Riverside-Magnolia

FAQs

Year:	2007		2008		2009	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:		*	Oct 27	0.086	Nov 2	0.080
Second High:		*	Oct 29	0.067	Sep 25	0.064
Third High:		*	Oct 26	0.066	Oct 16	0.064
Fourth High:		*	Oct 28	0.066	Aug 28	0.063
# Days Above State Standard:		0		0		0
Annual Average:		*		*		0.020
Year Coverage:		*		23		98

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM2.5 | PM10 | Carbon Monoxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Highest 4 Daily 24-Hour PM2.5 Averages

Riverside-Magnolia

Year:	2007		2008		2009	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 8	68.5	Feb 18	42.9	Jan 1	42.1
Second High:	Nov 17	58.0	Jan 10	40.3	Mar 20	39.7
Third High:	Nov 5	56.6	Dec 2	39.0	Feb 27	33.9
Fourth High:	Nov 2	50.4	Nov 29	36.3	Nov 21	33.7
California:						
First High:	Nov 8	68.5	Feb 18	42.9	Jan 1	42.1
Second High:	Nov 17	58.0	Jan 10	40.3	Mar 20	39.7
Third High:	Nov 5	56.6	Dec 2	39.0	Feb 27	33.9
Fourth High:	Nov 2	50.4	Nov 29	36.3	Nov 21	33.7
Estimated Days > Nat'l 24-Hr Std:		*		12.4		6.0
Measured Days > Nat'l 24-Hr Std:		8		4		2
Nat'l 24-Hr Std Design Value:		49		48		44
Nat'l 24-Hr Std 98th Percentile:		58.0		39.0		33.9
National Annual Std Design Value:		17.7		16.2		15.0
National Annual Average:		18.3		13.2		13.3
State Ann'l Std Designation Value:		*		13		13
State Annual Average:		*		13.3		*
Year Coverage:		84		97		94

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in micrograms per cubic meter.
National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
State and national statistics may therefore be based on different samplers.
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM10 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

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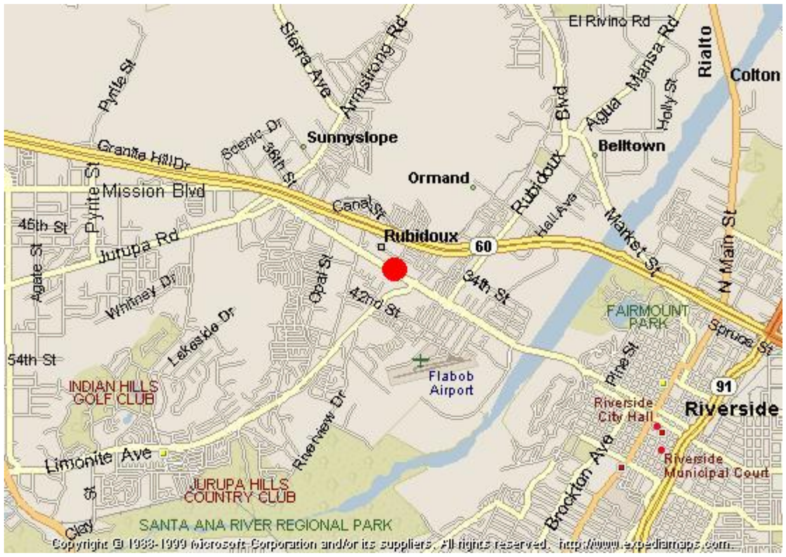
Quality Assurance
Site Information for Rubidoux - Mission Blvd

This page last reviewed on June 17, 2010



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060658001	33144	9/1/79	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude (N)	Longitude (W)	Elevation
5888 Mission Bl, Riverside CA 92509	Riverside	South Coast	34° 0' 2"	117° 24' 55"	250

Pollutants Monitored (click on parameter link for real-time data)
CO, SO_2, NO_2, O_3, PM_{10}, $TEOM_{PM10}$, $BAM_{PM2.5}$, $PM_{2.5}$, TSP, Toxics, Cr^{6+}, Dioxin, Outdoor Temperature, Relative Humidity, Wind Direction, Horizontal Wind Speed, Barometric Pressure, Solar Radiation

Site Photos	Photo Sequences	Site Surveys
--Select Photos--	--Select Position And Direction--	--Select Survey--

Other ARB Database Information	Real-Time Met Data	Aerial Photos and Topo Maps Of Site
--Select Database--	--Select Data Server--	--Select External Map--

Site Information Menu Top Page **Quality Assurance Programs** **Search QA Site Information Database**

For real-time air quality data visit: Air Quality and Meteorological Information System (AQMIS)

For further information contact:

Mrs. Merrin Wright, *Manager*
Quality Assurance Section

A department of the California Environmental Protection Agency

Welcome to California

Air Resources Board

iADAM

Highest 4 Daily Maximum Hourly Ozone Measurements

Riverside-Rubidoux

FAQs

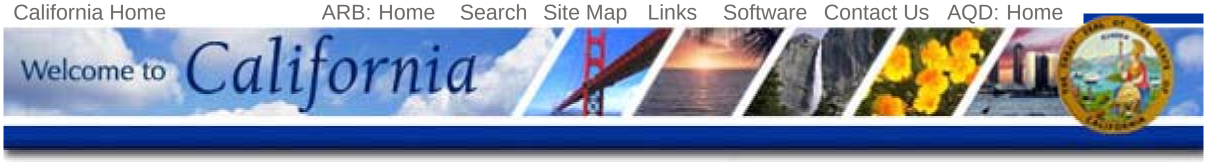
Year:	2007		2008		2009	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 1	0.131	Jun 20	0.146	Jul 18	0.116
Second High:	Aug 31	0.126	Jun 19	0.140	Aug 28	0.113
Third High:	Aug 12	0.123	Jun 18	0.138	Jun 28	0.112
Fourth High:	Jul 2	0.120	Aug 14	0.135	Aug 29	0.111
# Days Above State Standard:		31		54		25
California Designation Value:		0.14		0.14		0.13
Expected Peak Day Conc.:		0.137		0.141		0.132
# Days Above Nat'l Standard:		*2*		*8*		*0*
National Design Value:		*0.134*		*0.140*		*0.135*
Year Coverage:		98		99		86

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .
State exceedances are shown in **yellow** . Exceedances of the revoked national 1-hour standard are shown in *orange* .
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: 8-Hour Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page



Air Resources Board

iADAM

Highest 4 Daily Maximum 8-Hour Ozone Averages

Riverside-Rubidoux

FAQs

Year:	2007		2008		2009	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jul 2	0.111	Jul 4	0.116	Jun 28	0.100
Second High:	Sep 1	0.108	Jun 18	0.112	Jul 18	0.100
Third High:	Jul 4	0.099	Jun 19	0.111	Aug 18	0.094
Fourth High:	Jul 5	0.099	Jun 20	0.111	May 17	0.089
California:						
First High:	Jul 2	0.111	Jul 4	0.116	Jul 18	0.101
Second High:	Sep 1	0.108	Jun 18	0.113	Jun 28	0.100
Third High:	Jul 4	0.100	Jun 20	0.112	Aug 18	0.094
Fourth High:	Jul 5	0.100	Aug 14	0.112	May 17	0.089

	2007	2008	2009
National:			
# Days Above '08 Nat'l Std.:	46	64	36
'08 Nat'l Std. Design Value:	0.105	0.107	0.099
National Year Coverage:	99	99	84
California:			
# Days Above State Standard:	69	89	57
California Designation Value:	0.117	0.117	0.116
Expected Peak Day Conc.:	0.123	0.124	0.119
California Year Coverage:	98	99	81

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Highest 4 Daily 24-Hour PM10 Averages

Riverside-Rubidoux

FAQs

Year:	2007		2008		2009	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Oct 21	559.0	Oct 27	115.0	Sep 1	77.0
Second High:	Mar 16	118.0	Nov 20	102.0	Nov 3	77.0
Third High:	Jul 5	117.0	Oct 21	92.0	Jan 1	75.0
Fourth High:	Oct 27	111.0	Oct 24	84.0	May 16	75.0
California:						
First High:	Oct 21	540.0	Oct 27	108.0	Sep 1	75.0
Second High:	Mar 16	114.0	Nov 20	96.0	Nov 3	75.0
Third High:	Jul 5	114.0	Oct 21	87.0	May 16	72.0
Fourth High:	Oct 27	108.0	Sep 24	80.0	Jan 1	71.0
Measured:						
# Days Above Nat'l Standard:		1		0		0
# Days Above State Standard:		65		46		30
Estimated:						
3-Yr Avg # Days Above Nat'l Std:		1.0		1.0		1.0
# Days Above Nat'l Standard:		3.1		0.0		0.0
# Days Above State Standard:		201.9		140.4		92.7
State 3-Yr Maximum Average:		57		57		57
State Annual Average:		57.0		44.8		41.1
National 3-Year Average:		*55*		*54*		*
National Annual Average:		*59.5*		*46.5*		*
Year Coverage:		100		100		100

Notes: All concentrations are expressed in micrograms per cubic meter.
The national annual average PM10 standard was revoked in December 2006 and is no longer in effect.
Statistics related to the revoked standard are shown in *italics* or *italics* .
National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
Statistics may include data that are related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
State and national statistics may therefore be based on different samplers.
State statistics for 1998 and later are based on *local* conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on *local* conditions).
National statistics are based on *standard* conditions.
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.
3-Year statistics represent the listed year and the 2 years before the listed year.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Highest 4 Daily Maximum State 24-Hour Sulfur Dioxide Averages

Riverside-Rubidoux

FAQs

Year:	2007		2008		2009	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
First High:	Feb 5	0.004	Jan 3	0.003	Jan 30	0.003
Second High:	Mar 6	0.004	Jun 18	0.003	Feb 22	0.003
Third High:	Mar 12	0.004	Jul 4	0.003	Apr 18	0.003
Fourth High:	Jan 24	0.003	Jun 17	0.003	May 1	0.003
Annual Average:		*		0.000		0.001
Year Coverage:		91		97		95

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
State exceedances are shown in **yellow** .
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

RIVERSIDE CITRUS EXP ST, CALIFORNIA (047473)

Period of Record Monthly Climate Summary

Period of Record : 7/ 1/1948 to 9/30/2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	66.6	67.9	70.2	75.1	79.6	86.5	94.0	94.4	90.7	82.5	73.5	67.5	79.0
Average Min. Temperature (F)	41.7	43.3	45.0	47.9	52.7	56.3	60.8	61.3	58.5	52.5	45.5	41.3	50.5
Average Total Precipitation (in.)	2.12	2.16	1.64	0.78	0.23	0.06	0.04	0.11	0.24	0.32	0.92	1.22	9.86
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

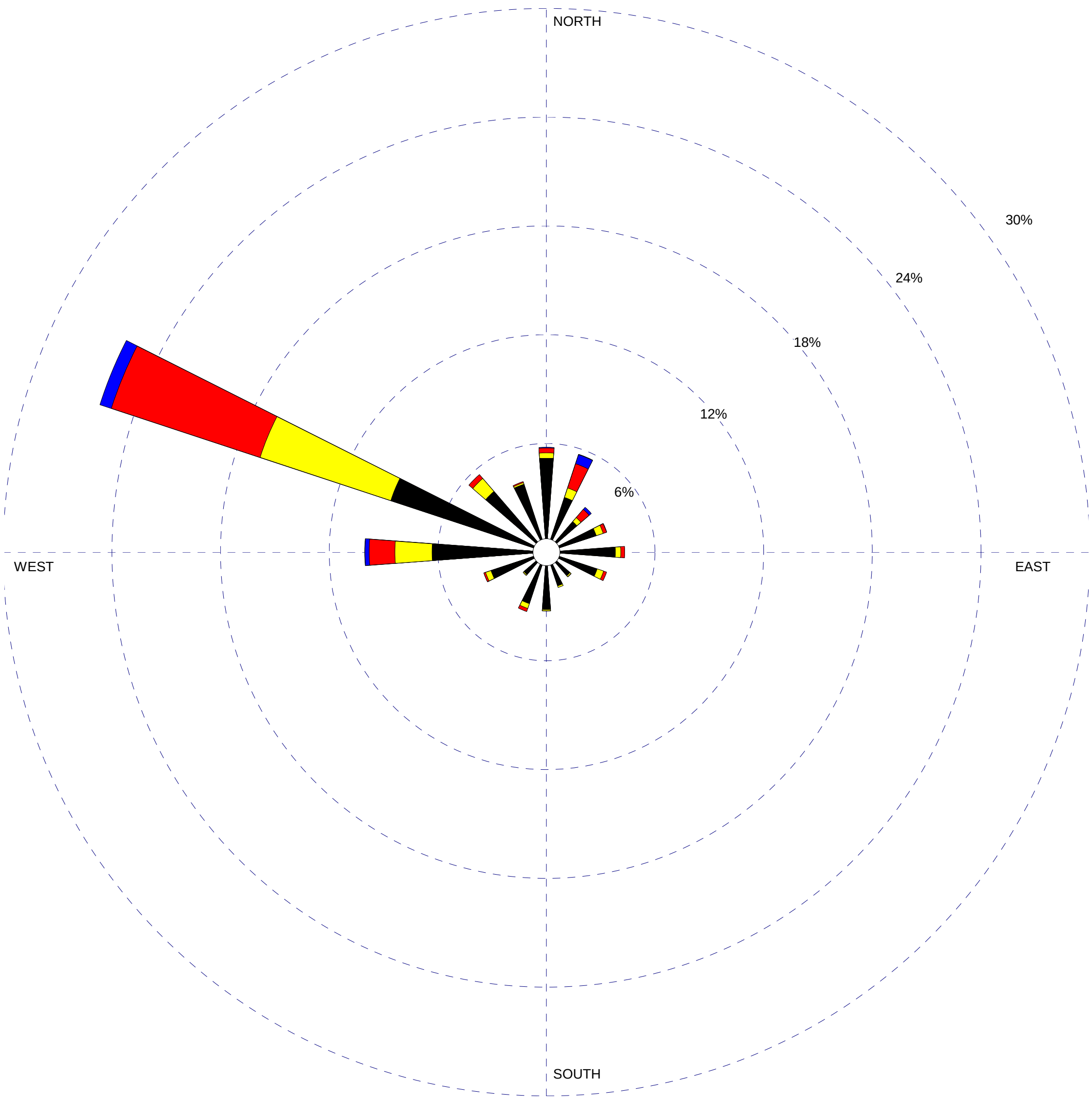
Percent of possible observations for period of record.
Max. Temp.: 85.3% Min. Temp.: 85.3% Precipitation: 91.5% Snowfall: 85.8% Snow Depth: 85.8%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

WIND ROSE PLOT

Station #54139 - , 1981

Riverside, SCAQMD



Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80		**5/29/2003**	
	DISPLAY **Wind Speed**	UNIT **m/s**	COMMENTS
	AVG. WIND SPEED **1.97 m/s**	CALM WINDS **12.12%**	
	ORIENTATION **Direction (blowing from)**	PLOT YEAR-DATE-TIME **1981** **Jan 1 - Dec 31** **Midnight - 11 PM**	PROJECT/PLOT NO. **1981**

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

Appendix I

Biological Resources Assessment

Biological Resources Assessment for the University of California, Riverside Glen Mor 2 Student Apartments

City of Riverside
Riverside County, California

Prepared for:

University of California, Riverside
Design and Construction
3615A Canyon Crest Drive
Riverside, CA 92507
Contact: Tricia D. Thrasher, ASLA, LEED AP
Principal Environmental Project Manager
951/827/1484

Prepared by:

ICF International
1776 Park Ave, Suite 146
Redlands, CA 92373
Contact: Kathy Dale, Project Manager
909/255/7167

January 2011

ICF International. 2011. *Biological Resources Assessment for the University of California, Riverside Glen Mor 2 Student Apartments*. City of Riverside, Riverside County, CA. January. (ICF 00374.10.) Redlands, CA.

Contents

Tables

Figures

Acronyms and Abbreviations

°F	degrees Fahrenheit
AOU	American Ornithologists' Union
Arid West Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) Supplement
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
EIR	environmental impact report
FAC	facultative
FACW	facultative wetland
FCE	Flood Control and Enhancement
GIS	Geographic Information Systems
GPS	Global Positioning System
ICF	ICF International
IS	initial study
LRDP	Long-Range Development Plan
NRCS	Natural Resources Conservation Service
OBL	obligate
ODC	Office of Design and Construction
OHWM	Ordinary High-Water Mark
RCTLMA	Riverside County Transportation and Land Management Authority
RPW	Relatively Permanent Water
RWQCB	Regional Water Quality Control Board
SKR	Stephens' Kangaroo Rat
TNW	Traditional Navigable Waters
UCR	University of California, Riverside
USACE	U.S. Army Corps of Engineers

USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
Wetland Delineation Manual	Corps of Engineers Wetland Delineation Manual
WRC MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
WRCC	Western Regional Climate Center

Chapter 1
Introduction

The University of California, Riverside (UCR) is proposing construction of a student housing community (proposed project) on approximately 21 acres of university-owned property on the eastern edge of the UCR campus.

The project site is designated for Family, Apartment Housing and Related Support, Open Space, and Athletics and Recreation uses under the 2005 Long-Range Development Plan's (LRDP's) Land Use Plan. UCR prepared a program environmental impact report (EIR) to analyze the environmental effects of the 2005 LRDP. The LRDP EIR analyzed the impacts of implementation of the LRDP on a programmatic basis, with recognition that long-term implementation of the campus-wide program would be subject to subsequent reviews.

The following information is intended to provide information about existing biological resources within the proposed project footprint and surrounding areas and analysis of temporary and permanent impacts in the context of federal, state, and local regulatory compliance. The analysis conducted for this report reviewed the biological resources assessment in the LRDP EIR and associated measures to determine site-specific impacts and additional measures required for compliance with the California Environmental Quality Act (CEQA). This report includes evaluation of CEQA significance criteria, proposed avoidance and minimization, and mitigation measures to offset potential and probable impacts.

Regional Location

The proposed project is located on the UCR campus within the City of Riverside in Riverside County, California, approximately 2.5 miles southeast of the State Route 91/Interstate 215/State Route 60 interchange (Figure 1). The proposed project consists of a 21-acre site within the East Campus portion of UCR. The proposed project site is located northwest of the Valencia Hill Drive/Big Springs Road intersection and bordered by existing campus housing and recreational fields to the north and west, Big Springs Road and surface parking lots to the south, and Valencia Hill Drive and off-campus residential development to the east. The proposed project is found within Section 20, Township 2 South, Range 4 West of the Public Land Survey System of the Riverside East 7.5-minute quadrangle. It can also be found in the current Thomas Guide on page 686, cell E5. Figure 2 shows the project vicinity.

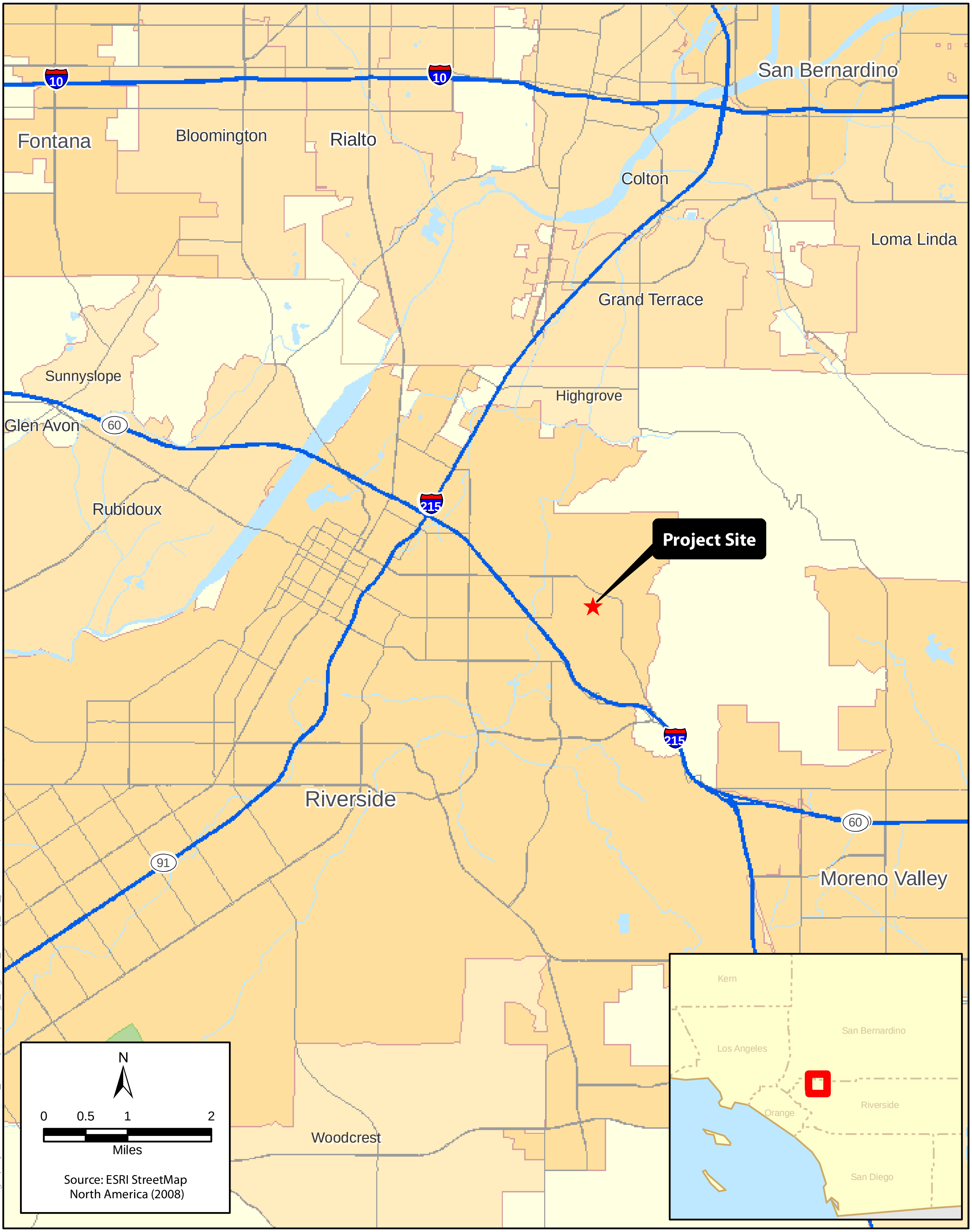
Project Description

The proposed project would contribute to implementation of UCR's LRDP goals of increasing available campus housing and conserving on-campus natural resources. The UCR LRDP, developed in 2005, 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 to 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, 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, thereby implementing UCR's goals and planning strategies for resource conservation, as stated in the LRDP. 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. Two bridges would provide a pedestrian connection between the project site and existing campus housing to the north.

Site landscaping would be completed along the streetscapes and within the housing site. The streetscape along the Valencia Hill Drive frontage would include a landscape buffer (minimum of 100 feet) with mixed-species tree plantings, retaining the turf ground cover at the campus entrance and transitioning to shrubs and native grasses at the arroyo interface. The existing formal double row of ash trees and 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.

Figure 3 illustrates the site plan and design of the proposed project.



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ICF INTERNATIONAL

Figure 1
Regional Vicinity Map
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

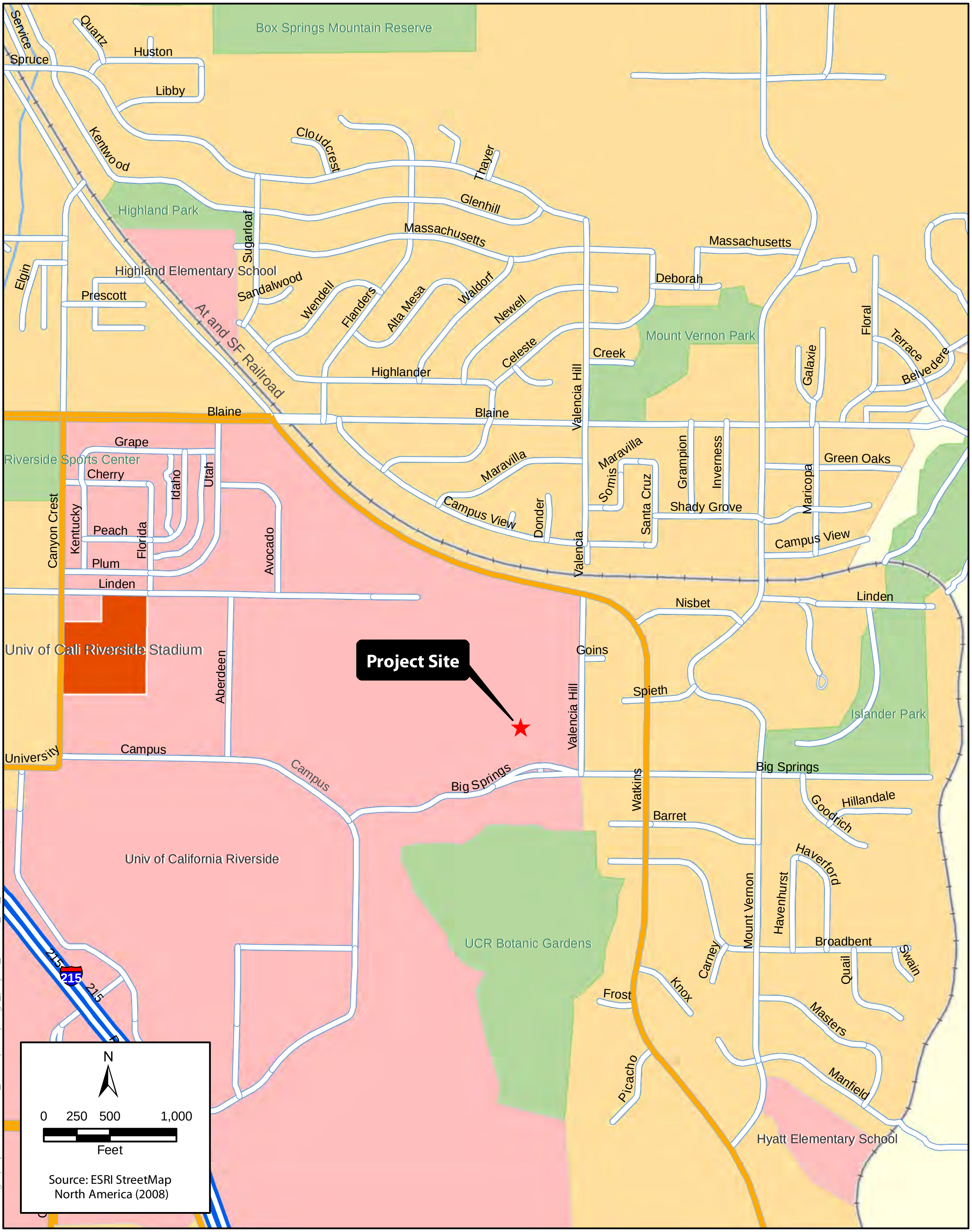

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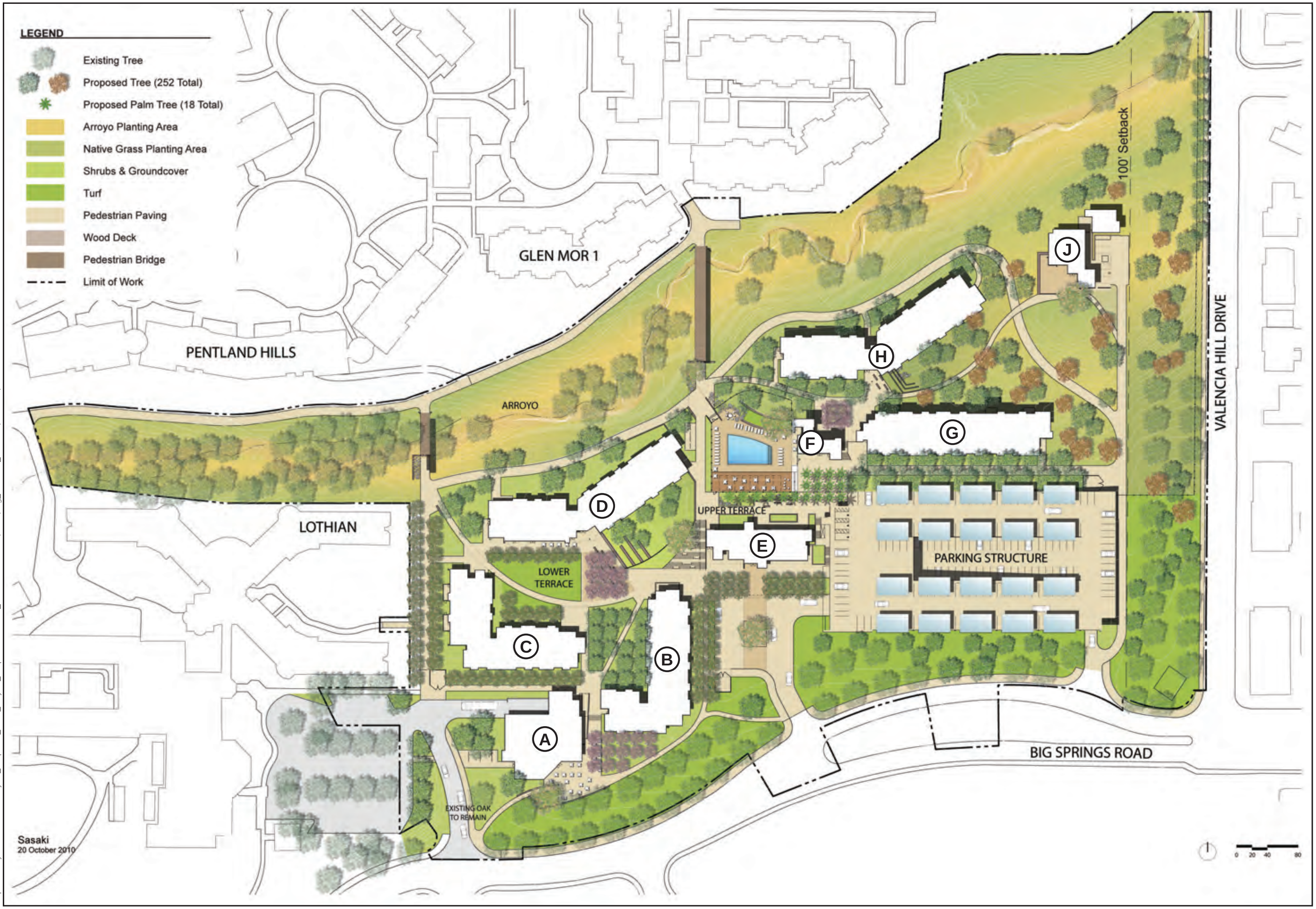
Figure 2
Project Location Map
Glen Mor 2 Student Apartments Project
University of California, Riverside, California



Graphics/Projects/GRAPHICS:Project_Graphics:_2010_Project_Graphics:00374.10_UCRGlenMor2:EIR (12-10):Fig_2-1thru8_PD.indd (12/23/10) SS

ICF INTERNATIONAL

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

Chapter 2
Methods

Terminology

- ***Limits of disturbance*** is defined as the proposed project footprint.
- ***Biological study area*** is defined as the limits of disturbance and an additional 300-foot buffer area.
- ***Burrowing owl study area*** is defined as the limits of disturbance and a 500-foot buffer.
- ***Jurisdictional delineation study area*** is the area within the proposed project footprint and the area within the arroyo slightly downstream of the proposed project footprint.
- ***Region*** is defined as the U.S. Geological Survey (USGS) 7.5-minute Riverside East quadrangle and the eight surrounding quadrangles (Fontana, San Bernardino South, Sunnymead, Perris, Redlands, Riverside West, Lake Mathews, and Steele Peak).
- ***Listed species*** are those that are federal or state listed as threatened or endangered.
- ***Sensitive species*** are plant species with a ranking of 1B or 4 by the California Native Plant Society (CNPS); California Species of Special Concern, as defined by the California Department of Fish and Game (CDFG); Fully Protected, as defined by CDFG, or those identified by the LRDP as locally important.
- ***Special-status species*** are all species that are either listed or sensitive, as defined above.

Regulatory Considerations

All potentially applicable local, state, and federal laws, regulations, and court precedent designed to protect and/or manage biological resources were evaluated for their relevance and potential to constrain the project as planned. The analysis provided in this report is based on a combination of information and judgments developed through direct evaluation of the site, current regulatory information, and professional judgment.

The listings of state and federal laws, below, are partial lists of those laws initially considered under all analyses by ICF International (ICF). Note that many of the laws listed below may not be applicable to the project at hand, but the applicability of each was considered to determine potential constraints to the project under consideration. For each law, applicable amendments to the original, resulting regulations empowered therein, and relevant judicial precedent were included.

Federal Laws

The following federal laws were considered during the evaluation of the biological resources for the proposed project (this is not an exhaustive list of all potential federal laws that may be considered):

- Bald and Golden Eagle Protection Act;
- The Endangered Species Act of 1973 (including Designated Critical Habitat for listed species);

- Environmental Quality Improvement Act of 1970;
- Federal Noxious Weed Act of 1974;
- Federal Water Pollution Control Act ("Clean Water Act");
- Clean Water Act following the U.S. Supreme Court's decision in *Rapanos v. United States* and *Carabell v. United States*, June 5, 2007 (Rapanos Guidance);
- Fish and Wildlife Act of 1956;
- Migratory Bird Treaty Act; and
- National Environmental Policy Act of 1969.

State Laws and Regulations

The following state laws and regulations were considered during the evaluation of the biological resources for the proposed project. Note that this is not an exhaustive list of all of the potential state laws and regulations that may be considered.

- California Environmental Quality Act (Public Resources Code Sections 21000–21177, Guideline Sections15000–15387), and
- California Fish and Game Code (including codes for the state Endangered Species Act, those similar to the federal Migratory Bird Treaty Act, and those for Lake or Streambed Alteration Agreements).

Local Regulations

Western Riverside County Multiple Species Habitat Conservation Plan

The purpose of the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP) is to ensure that biological functions and values are maintained throughout the WRC MSHCP area. The proposed project would occur within the WRC MSHCP area. 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 assessments, and proposed mitigation measures have been conducted and developed in accordance with the WRC MSHCP and associated implementation guidance.

Stephens' Kangaroo Rat Habitat Conservation Plan

The project site is within the plan area for the Long-term Habitat Conservation Plan for the Stephens' Kangaroo Rat (SKR). Implementation of this plan is at a stage in which all conservation lands have been acquired. For projects located outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands.

The campus is not located within an SKR reserve and the university is exempt from payment of SKR mitigation fees.

University of California, Riverside Long-Range Development Plan

The project site is designated for *Family, Apartment Housing and Related Support*, *Open Space*, and *Athletics and Recreation* uses under the 2005 LRDP's Land Use Plan. California law requires all University of California campuses to prepare an EIR for LRDPs. 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 University of California Board of Regents on November 17, 2005, the same day the regents adopted the 2005 LRDP. The LRDP EIR analyzed the impacts of implementation of the 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 program-level mitigation measures adopted for the LRDP EIR, and (3) evaluate any changes in project definition, location, or setting from that assumed in the LRDP EIR. The analysis conducted for this report considered the biological resources assessment in the LRDP EIR and associated measures to determine site-specific impacts and additional measures required for compliance with CEQA.

Biological Survey Methodology

Literature Review

A literature review was conducted to assist in the evaluation of the environmental setting of the project site prior to fieldwork. Literature reviewed included the LRDP; the LRDP EIR, including Appendix B, General Biological Evaluation (2005); the California Natural Diversity Database (CNDDB) (CDFG 2010); the CNPS Inventory of Rare and Endangered Plants (2010); the Web Soil Survey (U.S. Department of Agriculture [USDA], Natural Resources Conservation Service [NRCS] 2010a), and the Riverside County Integrated Project Conservation Summary Report Generator (Riverside County Transportation and Land Management Authority [RCTLMA] 2010a). The CNDDB and CNPS queries were conducted on a nine-quad search, consisting of the USGS 7.5-minute Riverside East quadrangle map (USGS 1980) and surrounding quadrangles (Riverside West, Steele Peak, Lake Mathews, Perris, Sunnymead, Redlands, Fontana, and San Bernardino South). Additional species were added based on professional knowledge and experience within the region.

Biological Field Survey

A single biological field survey of the biological study area was performed on June 2, 2010, by ICF biologist Marisa Flores. The survey was performed between 1230 and 1600 hours, the temperature was 75 to 85 degrees Fahrenheit (°F), wind speed was 1 to 3 mph, cloud cover was between 90 and 95 percent, and humidity was moderate. The project site was concurrently evaluated for suitable habitat for burrowing owl. Site conditions and biological resources were documented in field notes and a photographic record.

Plant communities and other relevant information were mapped during the site visit using aerial images. Plant communities were classified according to the descriptions in the LRDP EIR. The plants and animals observed and/or detected during the field visit were recorded (see Appendix B). The taxonomy and nomenclature used in this report follow Hickman (1993) for plants, Collins and Taggart (2009) for herpetiles (amphibians, turtles, and reptiles), the American Ornithologists' Union (AOU) (1998) and supplements (AOU 2000 et seq.) for birds, and Baker et al. (2003) for mammals.

Burrowing Owl Survey

The WRC MSHCP Burrowing Owl Survey Instructions (RCTLMA 2010b) were followed for the burrowing owl survey. The WRC MSHCP survey instructions are based on the Burrowing Owl Consortium Guidelines; therefore, following the WRC MSHCP instructions ensures consistency with both CDFG guidelines and the WRC MSHCP.

Habitat Evaluation

A habitat evaluation for burrowing owl was performed on June 2, 2010. A pedestrian survey was conducted over the entire project footprint to determine whether potential burrowing owl habitat was present. Because of the presence of suitable habitat, a 500-foot buffer was also surveyed, as required by the WRC MSHCP. Based on the presence of suitable habitat for burrowing owl, a focused survey was conducted.

Burrowing Owl Focused Survey

The burrowing owl survey to determine the presence or absence of resident burrowing owls was conducted by Marisa Flores, an ICF biologist who is experienced with the identification of burrowing owls and indicators of presence (e.g., feathers and scat). As required by the protocol, surveys were conducted during the breeding season (March 1 to August 31) and during weather that is conducive to observing owls outside their burrows and detecting burrowing owl presence indicators. Surveys were not performed within 5 days following rain or during rain, high winds (> 20 mph), dense fog, or temperatures of more than 90°F.

The WRC MSHCP instructions require focused surveys to be conducted in two parts, a focused burrow survey followed by a focused burrowing owl survey (if suitable burrows are identified during the focused burrow survey).

Part A – Focused Burrow Survey. A systematic survey for burrows and burrowing owl indicators of presence was conducted on June 2, 2010, by walking transects through potentially suitable habitat over the entire burrowing owl study area. The pedestrian surveys were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 100 feet and was reduced when necessary to account for differences in terrain, vegetation density, and ground surface visibility.

The locations of all suitable burrowing owl habitat, potential burrowing owl burrows, presence indicators, and any burrowing owls observed were recorded and mapped using Global Positioning System (GPS) device. Because the survey area was found to have natural or man-made structures that could support burrowing owls, a focused burrowing owl survey was performed, as detailed in Part B.

Part B – Focused Burrowing Owl Surveys. When conducting protocol surveys for burrowing owl, presence of burrowing owl is determined by visual observation of individuals and/or active burrows, observation of presence indicators (including pellets, tracks, and feathers), or auditory detection. The focused surveys consisted of site visits on four separate days, either in the morning (1 hour before sunrise to 2 hours after sunrise) or in the early evening (2 hours before sunset to 1 hour after sunset). All potentially suitable habitat and burrows mapped during Part A were scanned using binoculars prior to conducting pedestrian surveys. Once this was done, a pedestrian survey was conducted within all suitable habitat in the burrowing owl study area. The pedestrian surveys followed transects spaced to allow 100 percent visual coverage of the ground surface (no more than 100 feet apart).

Table 1 provides the date, times, and site conditions of the burrowing owl protocol surveys.

Table 1. Burrowing Owl Site Visits and Conditions

Date (2010)	Task	Surveyor	Time Span	Conditions
02 June	Burrowing Owl Habitat Evaluation and Burrow Survey	M. Flores	1230–1600	75°F–85°F, wind 1–3 mph, cloud cover between 90% and 95%, moderate humidity
02 June	Burrowing Owl Burrow and Focused Survey	M. Flores	1759–1940	73°F–80°F, wind 1–3 mph, cloud cover 10%–35%
08 June	Burrowing Owl Focused Survey	M. Flores	1800–1915	76°F–80°F, wind 1–5 mph, no cloud cover, sunny
09 June	Burrowing Owl Focused Survey	M. Flores	0625–0740	65°F–73°F, wind 0–1 mph, cloud cover > 90%, overcast
10 June	Burrowing Owl Focused Survey	M. Flores	0625–0730	61°F–63°F, wind 0–2 mph, cloud cover 100%, overcast

Jurisdictional Delineation Methodology

Literature Review

Prior to beginning the field delineation, the Delineation of Jurisdictional Waters and Wetlands for the Arroyo Student Housing Project at the University of California, Riverside (Jones & Stokes 2003) was reviewed along with a 100-scale color aerial photograph, an 80-scale topographic base map of the property provided by the project design team, and the previously cited USGS topographic map to determine the locations of potential areas of U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFG jurisdiction. Additionally, the Web Soil Survey (USDA, NRCS 2010a) was reviewed to identify the soil series that occur in the jurisdictional study area.

Field Survey

ICF regulatory specialist Alexis Kessans led a delineation team on June 2 and 14, 2010. The surveyors walked the entire jurisdictional study area to identify locations where further evaluation for jurisdictional features was warranted. Detailed field surveys were conducted in these focused areas to delineate features, including USACE non-wetland waters of the United States; USACE wetlands; CDFG jurisdictional lakes and streambeds, including riparian habitat; and any non-federal waters of the state that may be subject to RWQCB jurisdiction. Delineated boundaries of all features identified were recorded with a GPS device. The following sections detail the methodology for determining jurisdiction and delineating boundaries for each feature type.

USACE Jurisdiction

This delineation has been prepared to allow the applicant to obtain a preliminary jurisdictional determination from USACE, as defined by Regulatory Guidance Letter 08-02 and in accordance with Clean Water Act jurisdiction following the Rapanos Guidance.

USACE Wetlands

The methods for delineating federal wetlands followed the guidelines set forth by USACE in the *Corps of Engineers Wetland Delineation Manual* (Wetland Delineation Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) Supplement* (Arid West Supplement) (USACE 2008b). The routine on-site delineation method was used to gather field data at potential wetland areas in the jurisdictional study area. Visual observations of vegetation types and evidence of wetland hydrology were used to locate areas for evaluation of wetlands. At each evaluation area, several parameters were considered to determine whether the sample point was within a wetland. Normally, three criteria must be fulfilled to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details regarding the application of these techniques are provided below.

Hydrophytic Vegetation: The hydrophytic vegetation requirement is met if more than 50 percent of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (Environmental Laboratory 1987). An OBL indicator status refers to plants that have a 99 percent probability of occurring in wetlands under natural conditions. A FACW indicator status refers to plants that usually occur in wetlands (67 to 99 percent) but occasionally are found elsewhere. A FAC indicator status refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34 to 66 percent). The wetland indicator status for vegetation within this study area can be found in the *National List of Plant Species that Occur in Wetlands: California (Region 0)* (U.S. Fish and Wildlife Service [USFWS] 1988).

Hydric Soils: The definition of a hydric soil is a soil that forms under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA, Soil Conservation Service 1994). This determination is made based on various field indicators detailed in the Arid West Supplement and the *Field Indicators of Hydric Soils in the United States (Version 7.0)* (USDA, NRCS 2010b).

Wetland Hydrology: Wetland hydrology is determined using indicators of inundation or saturation (flooding, ponding, or tidal influences) detailed in the Wetland Delineation Manual and the Arid West Supplement.

Areas meeting all three parameters that are connected via surface water to a Traditional Navigable Water (TNW) or Relatively Permanent Water (RPW) are typically designated as USACE wetlands. Wetland boundaries are generally determined based on topography, changes from upland to wetland-dominated plant communities, soil cracks, and/or changes from hydric to non-hydric soils.

Waters of the United States

ICF delineators used the Arid West Supplement (USACE 2008b) and *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Arid West Field Guide) (USACE 2008a) to determine the OHWM for all potentially jurisdictional non-wetland waters. The Arid West Field Guide presents a method for delineating the lateral extent of the waters of the United States in the arid west using stream geomorphology and vegetation response to the dominant stream discharge (USACE 2008a).

RWQCB Jurisdiction

The RWQCB waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]). Regional board jurisdiction was measured at the OHWM for drainages. For wetland or depressional areas, the area was assessed to the outer reach of the applicable (hydrophytic) vegetative community or (where vegetation was absent or disturbed) to the natural topographical rim of the depressional feature (whichever was greater).

CDFG Jurisdiction

CDFG streambed jurisdiction typically includes water features with a defined bed and bank. Evaluation of potential jurisdictional areas followed the guidance of relevant CDFG materials and standard practices by CDFG personnel. Briefly, CDFG jurisdiction was delineated by measuring outer width and length boundaries of potential jurisdictional areas (streambeds), consisting of the greater of either the top of bank measurement or the extent of associated riparian vegetation. Specifically, CDFG jurisdiction was measured at the top of the banks of the streambed to where the obvious transition to upland, including upland vegetation, was observed and no aquatic resource was present. In addition, terraces adjacent to the streambed were included as CDFG jurisdiction. CDFG jurisdiction also extended into the upland areas to the riparian drip line where riparian vegetation associated with the streambed was observed.

Impact Analysis Methodology

Biological resources observed during the biological surveys (including burrowing owl survey and jurisdictional delineation) were documented using GPS and mapped with Geographic Information Systems (GIS) software. To determine impacts on biological resources, the project footprint was digitized using GIS software and then overlain with mapped biological resources. The UCR Glen Mor 2 Tree Removal Plan and Arroyo Enhancement Diagram were reviewed to confirm tree removal and enhancement components of the project. The Tree Removal Plan, Arroyo Enhancement Diagram, and biological resources were all mapped on a topographic base map; therefore, it was possible to compare the plans/maps to determine impacts and enhancement within the existing vegetation communities and project components.

Impact Calculations

For purposes of calculating temporary impacts, it was assumed that construction activities, including staging of construction equipment, would be within impact areas and/or currently developed areas, except as noted below.

Impacts were calculated based on known boundaries of each project component. A conservative approach was used, assuming a resource would be affected if the footprint of the project component overlay the resource in GIS. In some instances, the impact represents tree canopy that may not be affected. Clarifications of impact calculations are provided under each resource and project component in the impact analysis section of this report. Additionally, the following assumptions were made for impacts within the Arroyo limits:

- the storm drain outlet was calculated with a 50-square-foot footprint for permanent impacts and a 100-square-foot footprint for temporary impacts, and
- removal of the path/culvert was calculated as the path footprint plus a 10-foot work limit on each side of the path.

Chapter 3
Existing Conditions

Landscape Context and Land Use

The proposed project is located on the eastern edge of the UCR campus. The proposed project footprint is bounded by Big Springs Road to the south, Valencia Hill Drive and off-campus single- and multiple-family residential development to the east, and campus housing developments (including Glen Mor 1, Aberdeen-Inverness, Lothian, and Pentland Hills) and associated recreational fields to the north and west (Figure 4).

The proposed project footprint is partially developed with an existing surface parking lot (Lot 14) and a vacant single-family residence. A paved driveway to the residence is located off Valencia Hill Drive, just south of Goins Court.

Historically, the project site has been used as part of the UCR campus. Orchards/groves are evident on historic aerials of the project site in 1931 through 1953 (Appendix G). In the 1963 aerial, the orchards appear fallow. Grading is evident on the southern portion of the site (the area surrounding the residence) in the 1977, 1989, and 1994 photos. The arroyo within the project site is evident on each of the historic aerials, which date back to 1931.

Topography

The UCR campus is located on an old alluvial fan at the base of the Box Springs Mountains, which rise approximately 1,700 feet within 2 miles of the campus on the east (Figure 5). Elevation within the proposed project footprint varies from approximately 1,070 feet near the southwest corner of Parking Lot 14 to approximately 1,126 feet on the northeast corner near Valencia Hill Drive, with the highest point (1,145 feet) at the top of a ridge that runs through the north-central portion of the site parallel to Big Springs Road. The ridge rises approximately 35 to 50 feet above Big Springs Road. From Valencia Hill Drive, the ridge is perpendicular to the street, with site grades ranging from at grade to approximately 20 feet above ground level on Valencia Hill Drive. A vacant residence is located at the uppermost elevation of this ridge, approximately 120 feet west of Valencia Hill Drive. A natural arroyo known as Great Glen Arroyo (Arroyo) contains a drainage feature that runs along the north edge of the site.

Climate

The climate in Riverside, California, consists of hot, dry summers and mild winters. Average temperatures from May to September range from highs of 81°F to 94°F and lows of 67°F to 78°F. Average temperatures from October to April range from highs of 67°F to 81°F and lows of 53°F to 67°F. Precipitation occurs in January and February as rain; the average yearly precipitation is 7.12 inches (Western Regional Climate Center [WRCC] 2008).

Hydrology

UCR is located on westward-sloping alluvial deposits at the base of the Box Springs Mountains in the Upper Santa Ana River watershed. The campus is located within two sub-watersheds, generally divided by Interstate 215/State Route 60. Most of the East Campus, within which the proposed project is located, drains to the University Arroyo watershed. Based on the LRDP EIR, the University Arroyo watershed composes an area of approximately 2,294 acres, with most of that area located east of the campus, including a portion of the Box Springs Mountains. 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 Great Glen Arroyo spans the entire length of the north side of the project site. The primary source of flow to the Arroyo is from off-campus lands, with flows conveyed by a storm drain that discharges into the upstream limit of the Arroyo at Valencia Hill Drive. The Arroyo also receives runoff from the project site and additional surrounding campus lands; these areas constitute less than 5 percent of the tributary flows. The Arroyo flows generally westward, with flows conveyed through the campus in a combination of naturalized surface channels, naturalized basins, landscaped basins, and underground storm drains, ultimately discharging into the Gage Basin, which is located on campus at the northwest corner of University Avenue and Canyon Crest Drive.

Soils

The Western Riverside Area, California, soil survey area map (USDA, NRCS 2010a) was reviewed for soils occurring within the study area. The following soils were mapped within the survey area:

- Gorgonio loamy sand, 0 to 8 percent slopes (GhC);
- Hanford coarse sandy loam, 2 to 8 percent slopes (HcC);
- Monserate sandy loam, 0 to 5 percent slopes (MmB);
- Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2);
- Monserate sandy loam, 8 to 15 percent slopes, eroded (MmD2);
- Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded (MnD2); and
- Terrace escarpments (TeG).

None of these soils are listed as hydric for the western Riverside area in the *National Hydric Soils List by State* (USDA, NRCS 2010c). Additionally, none of these soils are designated as sensitive by the WRC MSHCP. A description of the entire series, based on the official soil descriptions provided by USDA, is provided below (USDA, NRCS 2010d). The location of all soil types within the project footprint is shown in Figure 6.

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Source: ESRI Aerial, (2007)

ICF INTERNATIONAL

N

0 70 140 280
Feet

Figure 4
Proposed Project Footprint
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

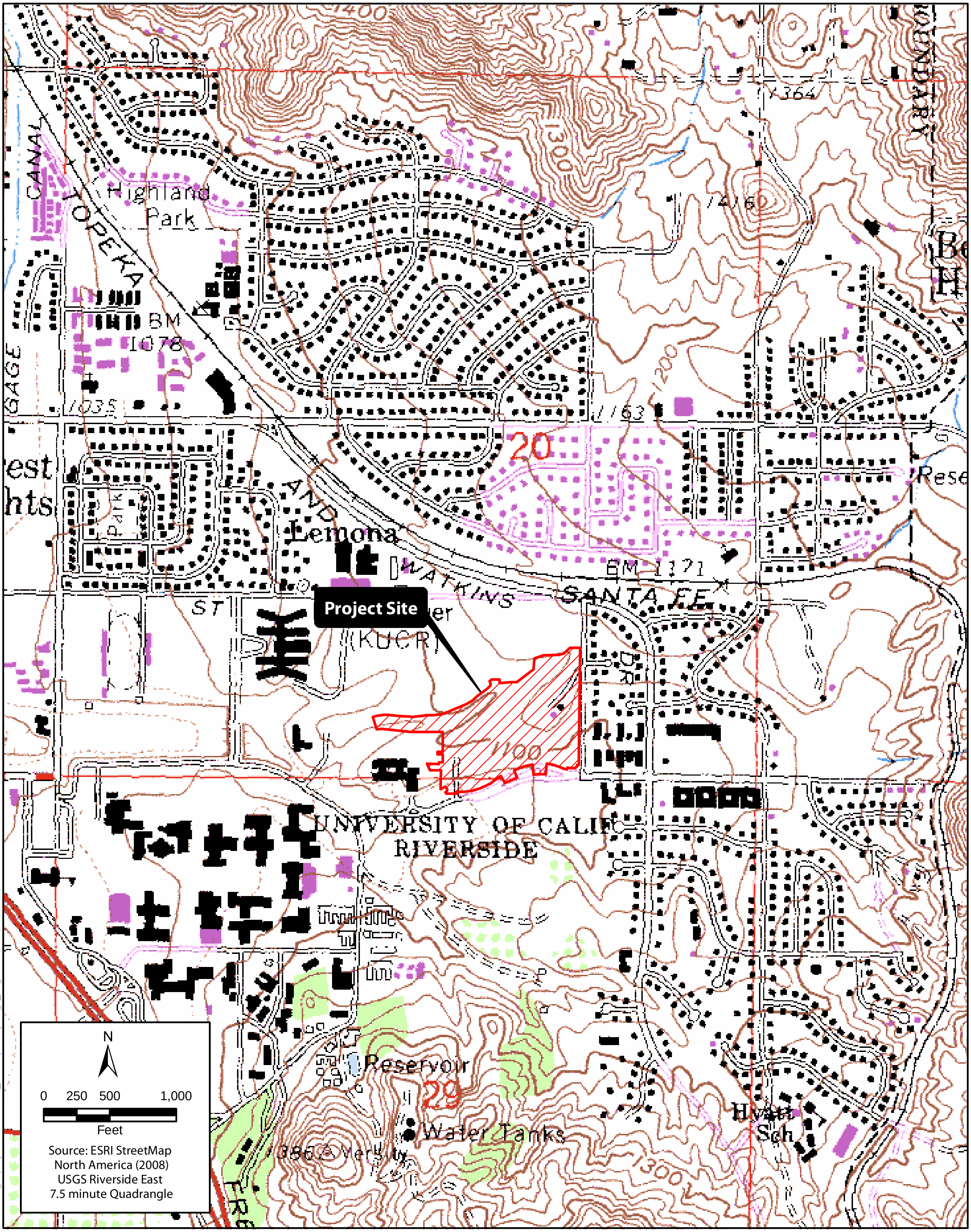

Figure 5
USGS Riverside East 7.5 Minute Quadrangle
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

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Source: ESRI Aerial, (2007)

N

0 70 140 280
Feet

Figure 6
Soils
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

Gorgonio

The Gorgonio series consists of somewhat excessively drained soils, formed in coarse-textured alluvium and derived from granite, granodiorite, schist, and related rocks. These soils are located on nearly level to moderately sloping alluvial fans, at elevations of 20 to 3,000 feet. The dominant textures include loamy sand and loamy fine sand and the minor strata are loam, sandy loam, and fine sandy loam. Gravel content ranges from 2 or 4 percent to about 30 percent. Gorgonio soils have slow or medium runoff, with rapid permeability. They are found near the mountains in the southern and central coastal areas of California (USDA, NRCS 1972).

Hanford

The Hanford series consists of very deep, well-drained soils, formed in coarse-textured alluvium, primarily from granite. These soils are located in stream bottoms, floodplains, and alluvial fans, with slopes of 0 to 15 percent at elevations of 150 to 3,500 feet. Textures include coarse loams, especially fine sandy loam, and coarse fragments ranging from 0 to 35 percent. Hanford soils have negligible to low runoff and moderately rapid permeability. They are found in the valleys of central and southern California (USDA, NRCS 1999).

Monserate

The Monserate series consists of moderately well to well-drained soils, formed in alluvium, primarily from granitic rocks. These soils are located on nearly level to moderately steep dissected terraces and fans at elevations of 700 to 2,500 feet. Textures include sandy loam or loam and rock fragments ranging from 5 to 35 percent. Monserate soils have slow to rapid runoff, with moderately slow to very slow permeability. They are found in the interior valleys in the western part of southern California (USDA, NRCS 2003).

Terrace Escarpments

Terrace escarpments consist of steep to very steep slopes or cliffs, occurring on the nearly even fronts of terraces or alluvial fans. Terrace escarpments are composed of loamy or gravelly soil over soft marine sandstone, shale, or gravelly sediments.

Vegetation and Natural Communities

Vegetation within the study area is consistent with that of an urbanized environment. There are a number of ornamental trees and shrubs along the edges of the proposed project footprint that are associated with landscaping. The area is highly disturbed from students and staff of UCR frequently traversing the site. Figure 7 shows the locations of vegetation communities within the proposed project footprint. Table 2 lists the vegetation communities and acreages.

Table 2. 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]

Annual Grassland

The majority of the vegetated portion of the project site contains annual grassland (bordering the north side of Parking Lot 14 on the ridge surrounding the vacant residence). At the time of the survey, the annual grassland appeared to have been mowed recently. The annual grassland is located primarily on areas that were previously cultivated with orchards and subsequently graded or disturbed because of management by the university, as evidenced in the historic aerials. This community is typical of disturbed lands in this area and an early successional community.

The dominant plants within the annual grassland include rip-gut brome (*Bromus diandrus)*, cheeseweed (*Malva parviflora*), oat (*Avena* sp.), foxtail chess (*Bromus madritensis*), glaucous foxtail barley (*Hordeum murinum*), Menzies' fiddleneck (*Amsinckia menziesii*), and western blue-eyed grass (*Sisrynchium bellum*).

Riparian

There is a small amount of riparian habitat within the Arroyo in the study area. The areas supporting riparian habitat are described below.

At the northeast end of the study area, a patch of riparian habitat occurs, consisting of Fremont's cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus mexicana*), and Mexican palo verde (*Parkinsonia aculeate*).

A patch of mulefat is located within the Arroyo adjacent to a paved path near the northwest corner of the Lothian residence hall.

A patch of cottonwood/willows occurs within the Arroyo. It is located east of the path that traverses through the Arroyo on the north side of the Lothian residence hall. This area consists of Fremont's cottonwood, Goodding's black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), desert grape (*Vitis girdiana*), tamarisk (*Tamarix ramosissima*), and hybridized California black/eastern walnut (*Juglans californica* x *nigra*) (hybridized walnut).[2]

Another patch of riparian vegetation occurs at the southwest end of the study area, consisting of arroyo willow, Mexican palo verde, castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*),

[1] The total acreage for the project footprint considered in this report varies from the 21-acre figure cited in the EIR project description. The difference results from refinements in the project footprint as the project has developed.

[2] Determination of hybridization of walnut trees on campus is discussed in Chapter 4, Sensitive Plant Species, California Black Walnut.

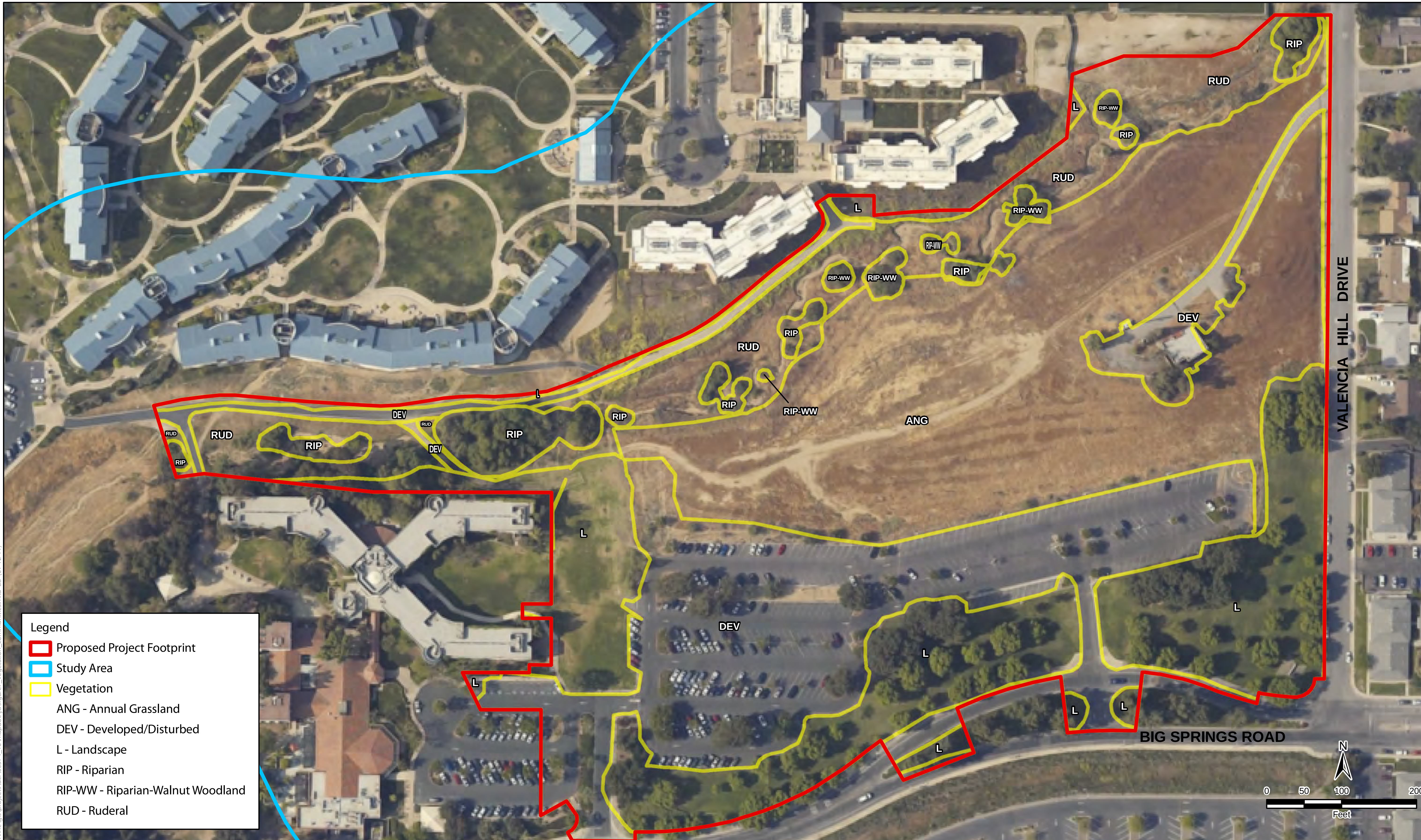


Figure 7
Vegetation Communities
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

and eucalyptus (*Eucalyptus* sp.). This area has a high percentage of non-native species; however, the canopy cover it provides adjacent to the drainage, combined with the native riparian species, results in this area functioning as riparian habitat.

In addition to these distinct patches of riparian habitat, riparian species, including mulefat, Mexican palo verde, and coast live oak (*Quercus agrifolia*), are scattered along the drainage.

Walnut Woodland

Scattered walnut woodland is located within the drainage and on the upper terraces of the Arroyo. This community consists primarily of hybrid walnut trees but also includes blue elderberry and coast live oak. The LRDP EIR includes walnut trees, blue elderberry, and coast live oak trees within the Arroyo under the classification of riparian; therefore, this community is classified as riparian-walnut woodland.

Ruderal

The majority of the vegetation within and on the north side of the Arroyo consists of species typically found in highly disturbed (ruderal) environments. The ruderal species include castor bean , tree tobacco, Mexican fan palm (*Washingtonia robusta*), short-pod mustard (*Hirshfeldia incana*), bull thistle (*Cirsium vulgare*), prickly Russian thistle, annual jimsonweed (*Datura stramonium*), prickly lettuce (*Lactuca serriola*), ripgut brome, and Menzies' fiddleneck.

Landscape

The vegetation within developed portions of the project site is primarily ornamental landscaping, including ornamental pines, trees, and shrubs within and bordering Parking Lot 14 and turf lawns surrounding the current residence halls.

Developed

Those areas that are developed with hardscape, including buildings, roads, and pathways, and support little to no vegetation are mapped as developed. Isolated ornamental trees and shrubs immediately adjacent or within (in the case of the parking lot) developed areas are included in the developed category.

Chapter 4
Results

The following section presents the results of the project biological surveys and discusses special-status biological resources with the potential to occur within the study area. The information gathered through the literature and regulatory review, current fieldwork, and analysis of relevant background information forms a sound and effective basis for evaluating the potential for the occurrence of resources and their habitats, functions, and values in the context of potential constraints to the project.

A complete list of plant and wildlife species observed during the field survey is provided in Appendix B. Photos of the study area are provided in Appendix C. Results of the literature review and biological surveys are summarized below.

Literature Review

A list of special-status species and natural vegetation communities occurring in the region was developed from database searches and literature review and is provided in Appendix A.

The CNDDB identifies nine natural communities within the region. The LRDP maps natural habitats, naturalistic open space, major drainages, and habitat for special-status species. The LRDP EIR does not map any natural habitats or habitat for special-status species within the biological study area.

The LRDP identifies the Arroyo in the northern portion of the study area as a major drainage and 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 literature review resulted in a total of 38 special-status plant species and 40 special-status wildlife species being documented in the region. Six additional wildlife species were listed in the LRDP EIR (Cooper's hawk [*Accipiter cooperii*], coastal western whiptail [*Aspidoscelis tigris munda*], Dulzura pocket mouse [*Chaetodipus californicus femoralis*], rosy boa [*Lichanura trivirgata*], rufous-crowned sparrow [*Aimpophila ruficeps*], and Bell's sage sparrow [*Amphispiza belli belli*]) and are included in this analysis.

No USFWS-designated Critical Habitat for listed plant or wildlife species occurs within the study area.

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 study area, including 0.19 acre of walnut woodland.

Special-Status Plant Species

Listed Plant Species

There is no USFWS-designated Critical Habitat for plants within the biological study area. Only one listed plant species has the potential to occur within the study area.

Nevin's Barberry (*Berberis nevinii*)

Nevin's barberry is both state and federally listed as endangered. Nevin's barberry occurs primarily in coarse soils and rocky slopes in chaparral and gravelly wash margins in alluvial scrub. In western Riverside County, it is known only in the vicinity of Vail Lake (Roberts et al. 2004).

The study area does not contain the rocky/gravelly soils with which this species is associated, and there is no alluvial scrub within the biological study area. Additionally, this species is an evergreen shrub and would have been visible during the general biological survey; it was not observed during the field survey. Because of the lack of suitable habitat on site and lack of observation during field surveys, this species is not expected to occur within the study area.

Sensitive Plant Species

There are five sensitive plant species with at least a low potential to occur within the study area.

Plummer's Mariposa Lily (*Calochortus plummerae*)

Plummer's mariposa lily has a CNPS designation of 1B.2. It occurs on rocky and sandy areas with granitic or alluvial material in coastal sage scrub, chaparral, and valley and foothill grasslands from 295 to 5,280 feet. This species flowers from May through July.

Because of the sandy nature of the soils within the project site and the annual grasslands present, there is a low potential for this species to be present within the biological study area; however, the disturbed nature of the annual grassland (including regular mowing/disturbance, dense cover, and high percentage of non-native species) makes this community only marginally suitable for this species. Additionally, the annual grassland areas within the biological study area have been regularly disturbed since at least 1931 (as shown in historic aerials, Appendix G), further reducing the potential for a seed bank for this species.

Plummer's mariposa lily is a showy species when in bloom. The biological survey was conducted in June, the peak of the blooming period for this species, and it was not observed. While the presence of individuals of this species cannot be ruled out based on this single site visit, the lack of historical occurrences and the marginal suitability of the habitat make it unlikely that a population of this species occurs within the study area. This species has a very low potential to occur.

Parry's Spineflower (*Chorizanthe parryi* var. *parryi*)

Parry's spineflower has a CNPS designation of 1B.1. It is found on dry sandy soils on slopes and flats and within coastal sage scrub and chaparral. Based on the LRDP EIR, this species has been observed within the UCR Botanic Gardens and has the potential to occur in naturalistic areas. The sandy soils within the Arroyo and the ruderal community provide potential habitat for this species. Because of the diminutive stature of this species, it is difficult to observe, and lack of observation during the single site visit does not negate the potential for this species to occur. The project site has a low potential to support this species.

Long-spined Spineflower (*Chorizanthe polygonoides* var. *longispina*)

Long-spined spineflower has a CNPS designation of 1B.2. It is associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland and openings in coastal sage scrub and chaparral. This species has also been described as occurring on sandy and gravelly soil, but this appears to be infrequently the case.

The biological study area lacks the heavy, rocky, or clay soils typical for this species, however sandy soils are present. The LRDP EIR indicates the potential for this species to occur in natural and naturalistic areas. Based on CNDDB records of this species occurring in annual grassland on sandy/gravelly soils, the potential for this species to occur within the annual grassland and ruderal communities on site cannot be ruled out. This species has a low potential to occur within the project site.

California Black Walnut (*Juglans californica* ssp. *californica*)

California black walnut has a CNPS designation of 4.2. It is deciduous tree that blooms from March to May in alluvial soils of cismontane woodland, chaparral, coastal scrub, riparian scrub, and walnut-oak woodland from about 164 to 2,952 feet in elevation. It is known to hybridize with other *Juglans* species.

There are scattered walnut trees within the biological study area. California black walnut has not been documented within the region (CNDDB 2010; CNPS 2010); however, a number of walnuts have been documented on the UCR campus by Andy Sanders and Rick Reifner. Based on these experts' observations, the walnuts on campus are hybrids of *J. californica* and *J. nigra* (Regents of the University of California 2008). Based on this documentation, the walnut trees within the study area are believed to be hybrid walnut trees and are not special-status species.

San Bernardino Aster (*Symphyotrichum defoliatum*)

San Bernardino aster has a CNPS designation of 1B.2. It is found in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland at elevations between 6 and 6,700 feet. It also occurs near ditches and stream springs.

Because this species occurs near ditches and drainages, the Arroyo within the biological study area has the potential to support this species.

Special-Status Wildlife Species

Those species with at least a low potential to occur within the biological study area are discussed below.

Listed Wildlife Species

There is no USFWS-designated Critical Habitat for wildlife species within the biological study area. Four listed wildlife species have the potential to occur in the vicinity of the study area and were evaluated for the potential to occur within the project footprint.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a state-listed threatened species. It occurs only as a migrant in Southern California. It can occur in a group, foraging over recently disced agricultural fields.

The biological study area has no breeding or foraging habitat for Swainson's hawk. This species has the potential only to migrate over the study area.

Least Bell's Vireo (*Vireo bellii pusillus*)

Least Bell's vireo is both state and federally listed as endangered. It occurs as a summer resident of Southern California where it inhabits low riparian growth in the vicinity of water or in dry river bottoms below 2,000 feet. For nesting, this species selects dense vegetation low in riparian zones, most frequently in riparian stands between 5 and 10 years old. When mature riparian woodland is selected, vireos nest in areas with a substantial robust understory of willows as well as other plant species.

The small amount of riparian habitat within the study area is not suitable for the species because the patch sizes are too small to support breeding, and there is very little understory riparian vegetation for the species to occupy.

Coastal California Gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is federally listed as threatened. It is an obligate, permanent resident of sage scrub habitat. Within California it is found from the Mexican border north to extreme eastern and southern Los Angeles County, with several small, disjunct populations known to the north in the Moorpark area of Ventura County. It also extends eastward into western San Bernardino County and well across cismontane Riverside County.

Because of the lack of coastal sage scrub within the biological study area, there is no potential for this species to breed within the study area. This species is known to forage in riparian habitat, particularly dispersing juveniles. USFWS-designated Critical Habitat occurs immediately to the east and south of the study area within the hills in the southern part of the East Campus and in the Box Springs Mountains. Because of this nearby suitable habitat, there is a low potential for species to disperse or forage across the study area.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)

Stephens' kangaroo rat is federally listed as endangered and state listed as threatened. It is found almost exclusively in open grasslands or sparse shrublands during the summer. The species avoids dense grasses (e.g., non-native bromes [*Bromus* spp.]) and is more likely to inhabit areas where the annual forbs disarticulate in the summer and leave more open areas. Vegetation most often associated with this species is California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and filaree (*Erodium* spp.). This species is often found in ecotones, or boundaries between habitat types (especially grasslands and sage scrub), and clearly prefers areas with less than 50 percent perennial cover.

Soil type also is an important habitat factor. As a fossorial (burrowing) animal, the species typically is found in sandy and sandy loam soils with a low clay-to-gravel content, although there are exceptions where they can use the burrows of Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Spermophilus beecheyi*).

The annual grassland on the project site is densely vegetated and is not likely to support this species.

Sensitive Wildlife Species

Thirteen sensitive wildlife species were determined to have at least a low potential to occur within the study area.

Rosy boa (*Lichanura trivirgata*)

The rosy boa is a California species of special concern. Its habitat consists of mixed brushy cover and rocky soils. The LRDP EIR states that this species has been historically observed on campus. Because of the lack of rocky soils, this species is unlikely to occur within the study area. However, the riparian and annual grassland communities provide marginal habitat for the species.

Birds

White-tailed Kite *(Elanus leucurus)*

The white-tailed kite is a California fully protected species. This species is found across most of California west of the Sierra Nevada and deserts, from north of the San Francisco Bay south into northern Baja California, Mexico. This is a lowland species and apparently rare anywhere above 2,000 feet in California. Nests are flimsy and located low in trees and large shrubs near foraging areas in savannah grassland and at the edges between open habitat and woodland or forest areas. Its diet is largely restricted to small mammals such as voles and mice.

Because of the lack of forest/woodland habitat or savannah grassland, this species is not expected to breed on site. There is a low potential for this species to forage on site because foraging habitat is minimal. The species typically forages in more open areas that are not surrounded by development.

Northern Harrier (*Circus cyaneus*)

The northern harrier is a California species of special concern. It hunts low to the ground, mostly in open country, and nests on the ground. Prey diversity is high, though small mammals are most commonly taken. It was formerly a fairly common breeder in much of coastal Southern California, but is now nearly extirpated in this role because of the loss of native open habitats, especially marshes. It remains fairly common in open country with low human disturbance during migration and in winter.

No suitable breeding habitat occurs within the study area for northern harrier, and there is low potential for the species to forage within the study area. However, the species has the potential to migrate through the study area.

Cooper's Hawk (*Accipiter cooperii*)

Cooper's hawk is a small raptor that specializes in hunting small birds, primarily in thickets, woodlands, and forests. It winters widely, fairly commonly in California. South of northern San Luis Obispo County, it is a very rare breeding species, and then only in high-elevation forest and riparian habitats.

The riparian vegetation within the study area is small in extent and immature, and it has human disturbance. This species would not breed within the study area. There is moderate potential for foraging in the riparian habitat and annual grassland.

Golden Eagle (*Aquila chrysaetos*)

The golden eagle is a California fully protected species. It forages in grassland and open savannah of many types. It tolerates considerable variation in topography and elevation. It prefers to hunt moderate-sized prey, especially California ground squirrels and rabbits but will occasionally take larger prey, such as mule deer (*Odocoileus hemionus*) fawns. It is very sensitive to human disturbance, especially near nest sites.

No suitable nesting habitat occurs within the study area. There is low potential for this species to forage on the project site; however, disturbances within the study area are high, reducing the potential for the species to use the site.

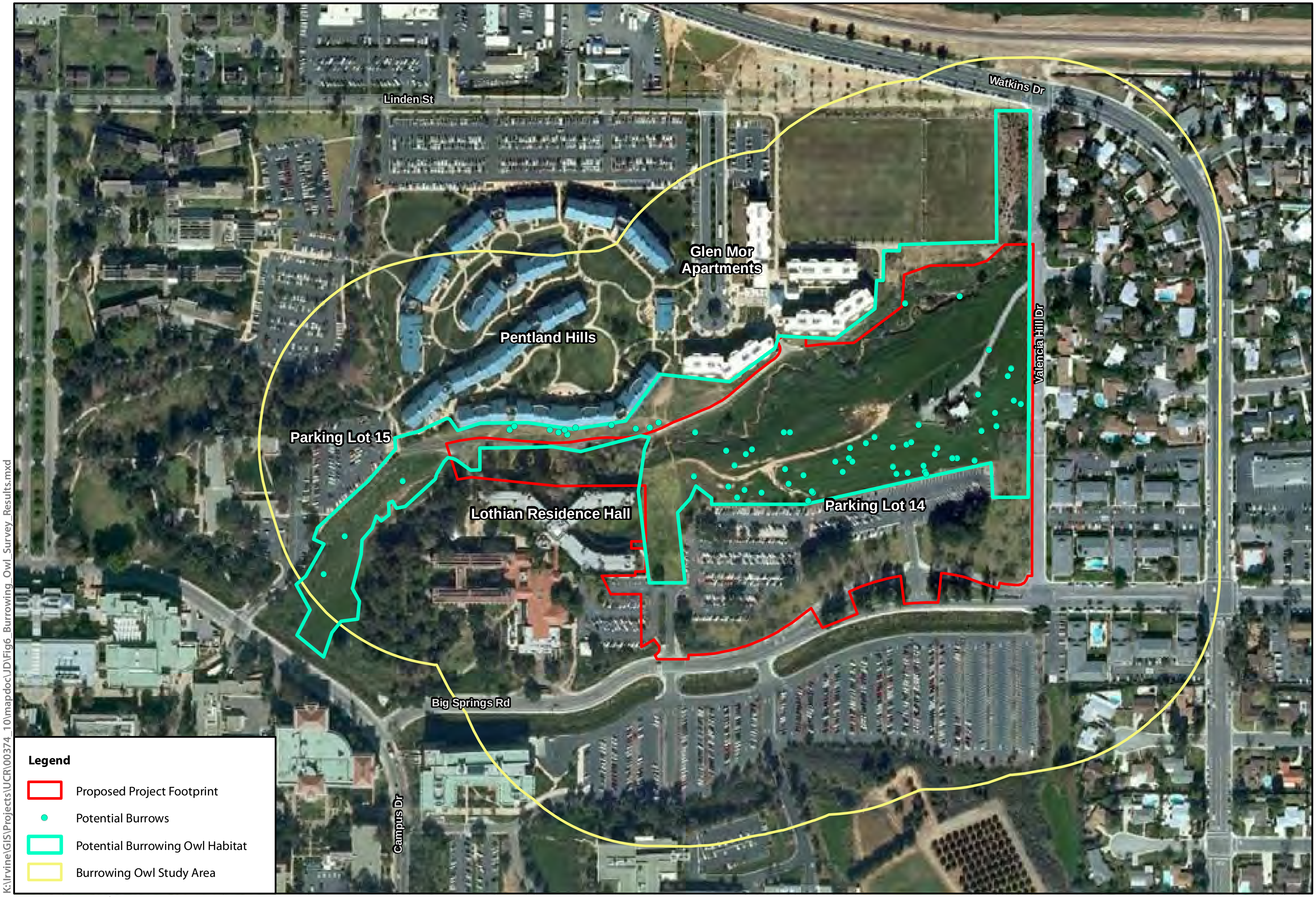
Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a California species of special concern. This distinctive small owl is generally most active near dawn and dusk (Zarn 1974). Burrowing owls in the western United States are only rarely known to construct their own burrows (Haug et al. 1993). Many researchers and observers have noted a strong association between burrowing owls and burrowing mammals, especially ground squirrels (*Spermophilus* spp.).

In coastal Southern California, a substantial fraction of burrowing owls are found in microhabitats that are highly altered by humans, including flood control and irrigation basins, dikes, banks, abandoned fields surrounded by agriculture, and road cuts and margins. The distribution of burrowing owls may be limited by soils (i.e., soils that are suitable for burrows in natural areas); however, the species will also occupy human-made niches such as banks and ditches, piles of broken concrete, and even abandoned structures (Haug et al.1993). Several factors in combination probably explain the species' distribution on local scales, including vegetation density, availability of suitable prey, availability of burrows or suitable soil, and disturbance (primarily from humans). In a few areas, the threat of predators may be an important limiting factor.

Focused Survey Results

No burrowing owl individuals or presence indicators were detected during protocol surveys. A number of potentially suitable burrows are present within the annual grassland (Figure 8); however, the majority of the burrows were confirmed to be occupied by California ground squirrels (i.e., visible ground squirrel sign and activity). None of the potentially suitable burrows showed any evidence of burrowing owl occupancy; therefore, it was determined that burrowing owls do not currently occupy the burrowing owl study area.



Source: ESRI Aerial, (2007)

N

0 70 140 280
Feet

Figure 8
Burrowing Owl Focused Survey Results
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

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Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is a California species of special concern. It is a songbird that evolved to the role of a bird of prey, capturing large insects as well as small vertebrates such as lizards, mice, and occasional small songbirds. It forages in open country of many types (including non-intensive agricultural areas) and nests in small trees and large shrubs, often at the edges of such open areas. Like most birds of prey, loggerhead shrike generally occur at low densities. The species is widely distributed in southern California, with some seasonal movements evident.

This species has a potential to occur in the annual grassland community and adjacent scattered trees. The biological study area has a low potential to support breeding and foraging loggerhead shrike.

Western Yellow Warbler (*Dendroica petechia brewsteri*)

Western yellow warbler is a California species of special concern. It is a songbird that nests in the canopy of riparian habitats in Southern California, especially in alder woodland and forest. It is a common, widespread migrant in spring and fall, occupying a wide variety of habitats at that time. It is uncommon as a breeder in Southern California, typically returning to the same areas each year, and extremely rare in winter.

Because of the small, immature riparian habitat devoid of alders within the study area, the species is not expected to nest within the study area. There is also a limited extent of suitable habitat for foraging.

Mammals

Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*)

The Los Angeles pocket mouse is a California species of special concern. Habitat for this species includes lower elevation grassland, alluvial sage scrub, and coastal sage scrub. Elevation range for the species as a whole extends from 540 to 2,650 feet above mean sea level. It inhabits areas of open ground and prefers fine sandy soils (for burrowing), but is also found commonly on gravel washes and on stony soils, within brush and woodland habitats. It is rarely found on sites with a high cover of rocks.

The Arroyo within the biological study area has a low potential to support the species.

Western Yellow Bat (*Lasiurus xanthinus)*

Western yellow bat is a California species of special concern, commonly found in the southwestern United States, roosting in the skirt of dead fronds in both native and non-native palm trees. In California, it is limited by the availability of palm habitat. This species forages over water and among trees.

There are a few scattered palm trees within the biological study area; however, no bat sign was observed at the base of the trees. The study area lacks water features for foraging. There is a low potential for this species to forage or roost within the study area.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is a California species of special concern and is widely distributed in the southwestern United States and northern Mexico. It is locally common across most of California except in the far northwest and in higher portions of the Sierra Nevada. Habitats include a wide variety of grasslands, shrublands, woodlands, and forests, including mixed conifer forest, however they appear to be most common in open, dry, rocky lowlands. Roosts are in caves, mines, as well as crevices in rocks, buildings and trees. This is a colonial species that forages low over open ground, often picking up beetles and other species of prey off the ground. It is known to forage up to about 1.5 miles from day roosts, but detailed home range data is apparently lacking. It requires small amounts of water for drinking and is intolerant of urban disturbances.

This species is not expected to roost within the study area because of the lack of roosting habitat and high human disturbance within the vicinity. The grassland within the study area may provide a small amount of potential foraging habitat.

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)

The San Diego black-tailed jackrabbit is a California species of special concern. It is common throughout the state (except at high elevations) in herbaceous and desert shrub areas, sage scrub, grasslands, open chaparral and woodland/forest areas. This species is relatively disturbance tolerant and requires extensive open spaces, such as grasslands or open sage scrub, usually in fairly level situations. The species requires the presence of substantial available cover, either dense grasses or shrubs, and is often adjacent to more open foraging areas. Declines are due to extensive development of available habitats, though this large rabbit is still locally common.

The study area does provide some suitable habitat; however, there is a lack of extensive open space and minimal suitable cover within the study area.

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)

The northwestern San Diego pocket mouse is a California species of special concern. It occurs in sandy herbaceous areas usually associated with rocks and coarse gravel in southwestern California including coastal and desert border areas in San Bernardino, Riverside, and San Diego counties. Elevation ranges from sea level to 6,000 feet. Vegetation community preferences include sage scrub, chamise-redshank chaparral, mixed chaparral, sage brush, desert wash, desert scrub, desert succulent scrub, pinyon-juniper, and annual grassland.

The study area lacks typical habitat types for this species. Although grassland is present within the study area, it is disturbed often by mowing and the dense vegetation combined with the lack of soil type typical for this species make it only marginally suitable for this species. The Arroyo may provide suitable habitat for the species.

Other Biological Resources

Nesting Birds

All vegetation communities within the biological study area contain suitable nesting habitat for various avian species. There is a high likelihood for birds to nest in the study area, within trees, shrubs, and herbaceous plants, as well as on the ground.

Raptor Foraging

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. Although the project site does not support large open areas, based on the LRDP EIR, landscape areas and grassland communities within the campus provide foraging habitat for raptors. The landscape, annual grassland and ruderal communities have the potential to support raptor foraging.

Wildlife Corridors

Based on the LRDP EIR biological technical report, large movement corridors no longer exist within the LRDP area. The presence of suburban and urban development around the university 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.

Jurisdictional Delineation Results

The proposed project area was surveyed for stream, wetland and riparian features that are potentially under the jurisdiction of USACE, CDFG, and/or the RWQCB through a routine-level jurisdictional delineation of the site.

This section describes the preliminary delineation of jurisdictional features in the study area. The analyses included herein is intended to document the investigation, best professional judgment, and conclusions of ICF staff, and is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by USACE, CDFG, and RWQCB. Table 3, below, provides a summary of preliminary jurisdiction. Wetland delineation data sheets are located in Appendix D and site photographs are located in Appendix C.

Table 3. Summary of Preliminary Jurisdiction within the Study Area

Non-wetland waters			CDFG			Linear
USACE	RWQCB	Wetland	Streambed	Riparian	Total	Feet
0.23 acre	0.23 acre	---	0.74 acre	0.92 acre	1.42 acre[1]	2,204 feet

[1] Total CDFG area is not the sum of Streambed and Riparian because the riparian overlaps the streambed in areas.

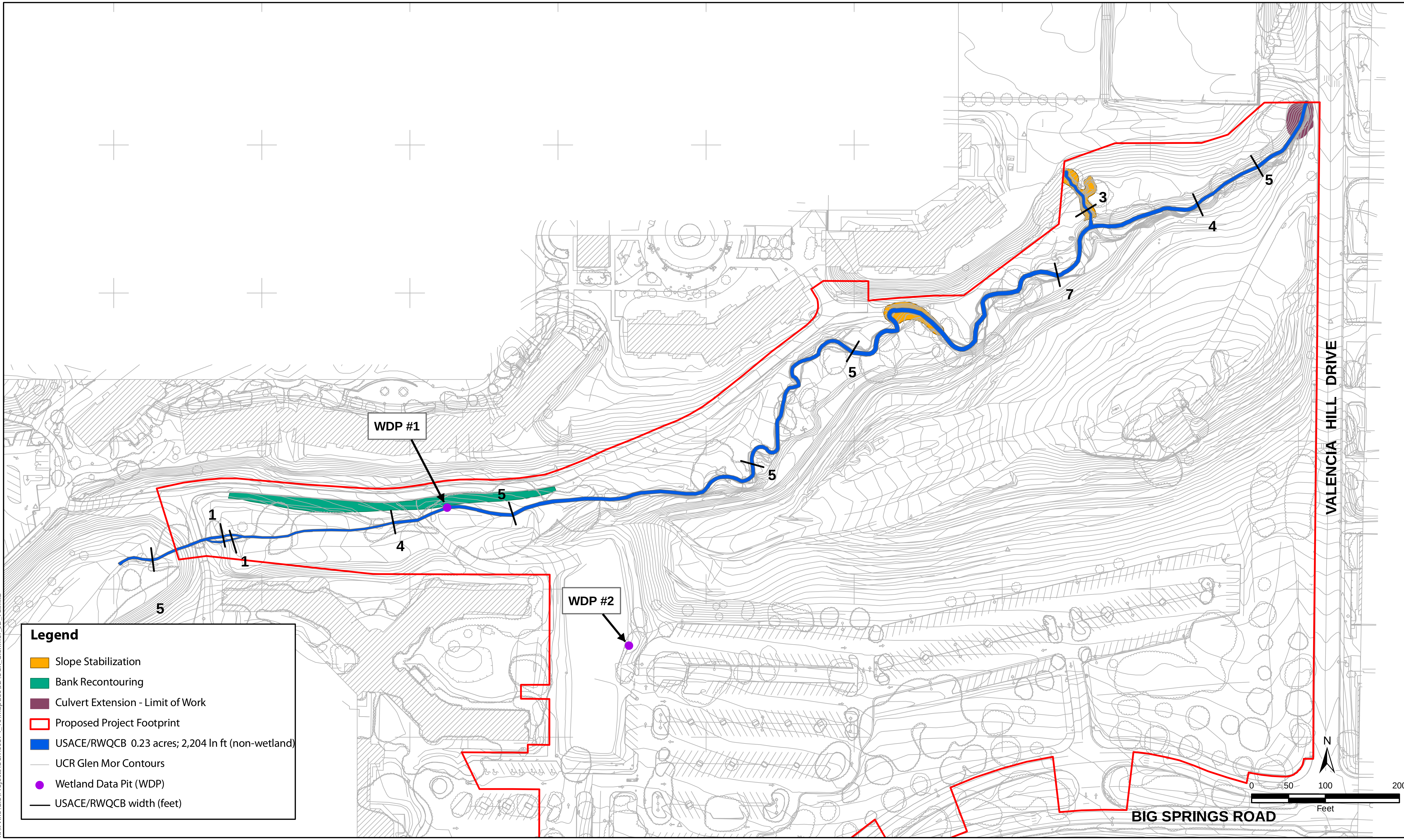
Waters of the United States

One ephemeral drainage totaling 0.23 acre of non-wetland waters of the United States (Figure 9a) is located within the Arroyo, and subject to USACE jurisdiction. The drainage enters the study area on the northeastern corner of the study area and meanders westerly for approximately 2,204 linear feet until evidence of an OHWM dissipates temporarily in the ruderal field located west of the Lothian residence hall. The drainage connects via sheet flow over a distance of about 400 feet to a downstream feature known as the Junction Basin. The Junction Basin discharges by culvert to a surface channel along North Campus Drive, which opens into another basin feature known as the Glade Basin, a turf landscaped feature at the northeast corner of Aberdeen Drive and Campus Drive. Flows from the Glade Basin discharge into an underground storm drain which emerges approximately 1,300 feet downstream at the Gage Basin, a riparian zone at the northwest corner of Canyon Crest Drive and University Avenue that is the terminal feature of the stormwater management system for this portion of the campus,. Water from the Gage Basin enters the city storm drain system, which discharges to the Santa Ana River, a tributary of the Pacific Ocean.

Runoff from upstream tributary areas enters the ephemeral drainage via a 43-inch concrete drain with brick and mortar headwall at Valencia Hill Drive. From this point, the drainage is unvegetated and deeply incised for approximately 1,517 linear feet until flowing across a dirt path. After crossing the dirt path, the channel becomes shallow, and meanders through the cottonwood-willow riparian habitat for approximately 179 linear feet until encountering a second path with a sediment-choked 12-inch concrete culvert. Some flows continue through the culvert; however, it is apparent from the riparian vegetation community that ponding is occurring in this area, and not all flows are conveyed to the downstream portion. Evidence of an OHWM is very poor downstream of this culvert. From this point, the drainage meanders downstream through a predominantly non-native riparian vegetation community for approximately 377 linear feet and through a 48-inch concrete culvert that passes under a paved path. Downstream of the 48-inch culvert, the OHWM is more discernable and continues for approximately 131 linear feet before dissipating in a field. As stated above, the channel connects via sheet flow to downstream drainage features and into the city storm drain system. The substrate of the ephemeral drainage is sandy, and the OHWM varies in width between 1 and 7 feet and is evidenced by break in bank slope, shelving, changes in soil characteristics, and destruction of terrestrial vegetation.

Wetlands

Data was collected within the riparian habitat supporting cottonwood/willows (Figure 9a, WDP #1); however, no hydric soil indicators were present. Indicators of wetland hydrology included two



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ICF INTERNATIONAL

Figure 9a
USACE/RWQCB Jurisdiction
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

secondary indicators: sediment deposits and drift deposits. Because of the lack of wetland soils, this area does not meet the criteria for a jurisdictional wetland.

Data was also collected at sample point WDP #2 located at the northwest corner of Parking Lot 14. This sample point supported hydrophytic vegetation but is isolated from the waterways in the study area. The sample point is located at a low point with landscaped areas adjacent to the west and Parking Lot 14 adjacent to the south. Hydrology supporting the hydrophytic vegetation is likely stormwater and irrigation runoff from the landscaping and/or the parking lot. No ponding or other wetland hydrology indicators were observed in this area. Additionally, the sample point did not support hydric soils.

Because of the absence of wetland hydrology and hydric soils, WDP #2 does not meet the criteria for a jurisdictional wetland.

Wetland data sheets are included as Appendix D.

CDFG Jurisdiction

CDFG jurisdiction within the survey area totals 1.42 acre, including 0.74 acre of unvegetated streambed, and 0.92 acre of vegetated riparian habitat (Figure 9b). The CDFG streambed is the ephemeral drainage within the Arroyo. The upstream portion of the jurisdictional streambed ranges in width from 10 to 28 feet from bank to bank. The downstream portion of the jurisdictional streamed, approximately from the dirt footpath located north of Lothian Hall downstream, is incised with a width ranging 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 1,517 feet, a riparian reach of 179 feet, a 377 linear-foot reach between two culverts, and a downstream reach of approximately 131 linear feet.

The banks of the entire channel are dominated by non-native ruderal vegetation including foxtail chess (UPL), ripgut brome (UPL), red-stemmed filaree (*Erodium cicutarium*, UPL), bull thistle (FACU), Menzies' Fiddleneck (UPL), annual jimsonweed (UPL), prickly lettuce (FAC), short-pod mustard (UPL), and prickly Russian-thistle (*Salsola tragus*, FACU). Associated riparian vegetation and overstory cover is described below for each segment.

The 1,517-foot upstream segment has an unvegetated bed with dominant vegetation on the adjacent terraces and banks consisting of Fremont's cottonwood (FACW), mulefat (FAC), hybridized California black/eastern walnut (FAC), blue elderberry (FAC), coast live oak (UPL), Mexican palo verde (FACW*[3]), brittlebush (*Encelia farinosa*, UPL), Mexican fan palm (FACW), and tree tobacco (FAC).

The 179-foot long riparian segment is dominated by Fremont's cottonwood (FACW), Gooding's black willow (OBL), arroyo willow (FACW), desert grape (UPL), tamarisk (FAC), and hybridized California black/eastern walnut (FAC).

The 377-foot reach adjacent downstream of the riparian area has an unvegetated bed. Vegetation on the banks of this reach consist of one arroyo willow, one Mexican palo verde, castor bean (FACU), eucalyptus, and pine tree (*Pinus sp.*). Although this area has a high percentage of non-native species; the canopy cover it provides adjacent to the drainage, combined with the native riparian species,

[3] An asterisk (*) following a regional indicator identifies tentative assignments based on limited information from which to determine the indicator status.

results in this area functioning as riparian habitat and it was included as riparian vegetation associated with a CDFG jurisdictional streambed.

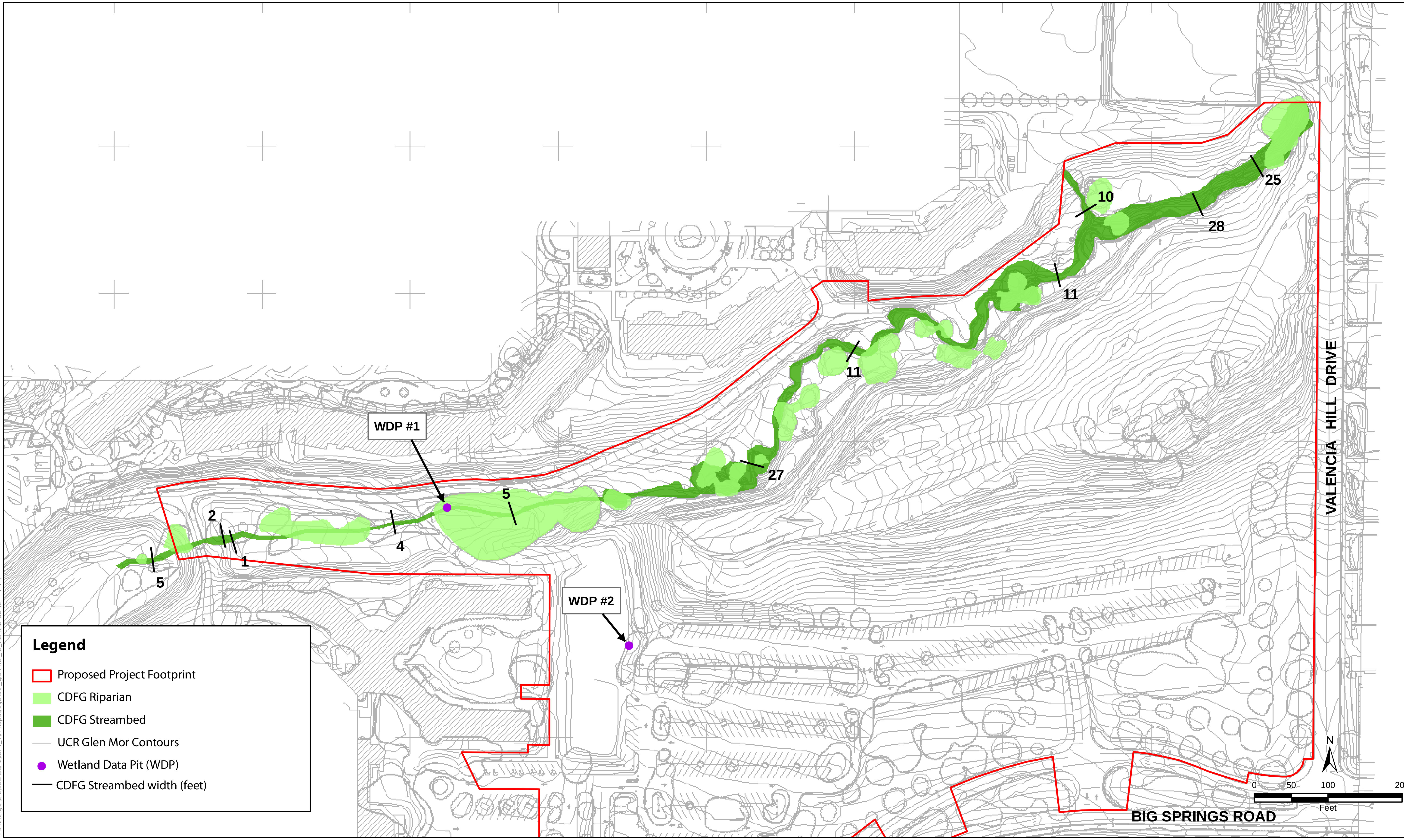
The 131-foot downstream segment of the drainage has an unvegetated bed. Dominant vegetation associated with the banks of this segment consists of black willow, mulefat, and eucalyptus.

Regional Water Quality Control Board

RWQCB jurisdiction associated with the project site is concurrent with jurisdiction of the USACE, as described above. No isolated features potentially subject to RWQCB jurisdiction pursuant to Section 13260 of the Porter-Cologne Act were identified on site.

Summary of Preliminary Jurisdiction

One ephemeral drainage and associated riparian habitat was delineated in the jurisdictional study area. Table 3, above, provides a summary of preliminary jurisdiction. Figures 9a and 9b illustrate the jurisdictional areas.



ICF INTERNATIONAL

Figure 9b
CDFG Jurisdictional Delineation
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

Significance Criteria

The following significance criteria were evaluated to determine the proposed project's impacts on biological resources based on Appendix G of the State CEQA Guidelines. Implementation of the proposed project would result in a significant impact if it would

a) 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 CDFG or USFWS;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or USFWS;

c) 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;

d) 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;

e) Conflict with any applicable policies protecting biological resources; or

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other applicable habitat conservation plan.

The Glen Mor 2 EIR is being prepared as a tiered document under the 2005 LRDP EIR (State Clearinghouse No. 2005041164). The UCR Office of Design and Construction (ODC) prepared an initial study (IS) as part of the scoping process for the Glen Mor 2 EIR. The IS was prepared to determine which components of the proposed project may or may not be covered sufficiently under the LRDP EIR. The IS determined that significance criteria "d" and "e," above, were adequately addressed in the LDPR EIR, and no further analysis was conducted for those criteria. With respect to criteria "d," as discussed under Results, this biological resources analysis confirmed that there are no wildlife movement corridors or nursery sites within the study area. The study area does have the potential to support nesting birds; however, LRDP EIR mitigation measures 4.4(a) and 4.4(b) address potential impacts on nesting birds. With respect to criteria "e," the LRDP EIR is based on conservation strategies that are incorporated into the project. Compliance with these conservation strategies is discussed further below.

The IS determined that additional project-level analysis was required for the remaining significance criteria. This technical report provides the basis for the project-level analysis. The preliminary jurisdictional delineation field study determined that there are no wetlands present within the proposed project footprint; therefore, significance criteria "c" is not applicable to the Glen Mor 2 project. For the remaining significance criteria (a, b, and f) proposed project impacts and significance analysis are summarized below.

Proposed Project Components

The proposed project includes an apartment style housing facility and associated improvements in the portion of the study area south of the Arroyo primarily within the annual grassland community and developed and landscape areas.

The following is a summary of the project components with the potential to affect biological resources.

Buildings

The project includes five residential buildings (Buildings B, C, D, G, and H in Figure 3) that would be arranged on terraces around a series of connected plazas. Other buildings include a resident services office in the center of the site that would house reception and administrative support spaces; a community building to provide meeting rooms, fitness facilities, an academic resource center, laundry and vending services, and an outdoor pool; and the Food Emporium, which would provide café-style food service along with limited convenience retail services in a single-story structure at the southwest corner of the site. An executive retreat is proposed in the vicinity of the existing single-family residence on the project site. This vacant structure would be demolished as part of the project.

Circulation

The access and circulation plan for the project considers pedestrian movement, emergency/maintenance access, and parking access. Pedestrian movement would be accommodated by a network of walks and plazas throughout the site. Emergency/maintenance access would be accommodated by a perimeter drive; however, emergency/maintenance personnel may also use elements of the pedestrian network.

Parking Structure

Project improvements would also include a new parking structure. It would be constructed on the eastern portion of the existing surface lot, displacing a portion of the existing landscape element along Big Springs Road.

Landscaping

Site landscaping would be included along the streetscapes and within the housing site. 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.

Arroyo Improvements

Although the majority of the proposed project components occur south of the Arroyo, improvements related to hydrology and circulation are necessary within the Arroyo and include the following:

- Two bridges to accommodate pedestrian and bicycle 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;
- 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 downstream location (closest to the bridge), the stabilization effort would encourage a shift in the stream flow line 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 Bridge 2;
- 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; and
- A water quality feature and associated storm drain outlet adjacent to the south bank at the shorter bridge.

Arroyo Enhancement

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 student housing precinct. Specific objectives of the project include the following:

- Improve the visual and aesthetic qualities of the arroyo and its surrounding area,
- Increase the density and number of native plant species within the arroyo,
- Control target exotic plant species,
- Improve drainage from the existing and proposed adjacent development,
- Use runoff from existing and proposed adjacent developments to provide a water source for riparian plants,
- Stabilize two potential erosion areas,
- Define and construct pedestrian pathways to limit foot traffic within the arroyo, and
- Improve the pedestrian safety of the arroyo by establishing and maintaining low growing plant material along all pathway edges and installing directional lighting along the newly constructed pathways.

The conceptual design for the proposed arroyo enhancement is presented in the Arroyo Enhancement Concept Diagram (Appendix E). Three zones have been outlined including the arroyo itself (the Arroyo Zone), a buffer zone between the arroyo and the adjacent edge of the housing development (the Arroyo Buffer Zone), and a transition zone where native plant species would be included in the landscaped areas adjacent to existing and proposed buildings and other infrastructure within the development area (Development Transition Zone).

The Arroyo enhancement program is further divided into Reaches, each of which will receive slightly different planting treatments. Table 4, below, summarizes the treatment for the Arroyo Zone and Arroyo Buffer Zone for each Reach. Location of Reaches can be found in Appendix E.

Table 4. Arroyo Enhancement Areas[4]

	Arroyo Zone		Arroyo Buffer Zone	
Reach	Scrub[1]	Riparian[2]	Scrub[1]	Riparian[2]
Reach 1	0.8 acre	0.2 acre[3]	0.7 acre	---
Reach 2	---	0.6 acre[4]	0.4 acre	---
Reach 3	---	0.3 acre[3]	0.2 acre	---
Reach 4	---	0.6 acre[5]	0.1 acre	---
Total	0.8 acre	1.7 acre	1.4 acre	---

Notes:

[1] Scrub includes areas that will be planted with scrub seed mix and scrub container plants, as detailed in Appendix E.

[2] Riparian includes existing riparian vegetation that will be enhanced through exotics removal, those areas that will be planted with riparian container plants only, and those areas that will be planted with riparian container plants with scrub seed mix.

[3] This area will not receive new plantings; enhancement will occur through exotic species removal.

[4] This area will be planted with riparian container plants and scrub seed mix.

[5] This area will be planted with riparian container plants only; the approximately 0.2 acre of existing riparian in this area will be enhanced through exotic species removal.

Site preparation would consist of clearing and grubbing and the removal of target exotic plant species. Existing native tree species would be left in place wherever possible. No grading is anticipated to occur in the Arroyo Zone except with activities described under Arroyo Improvements. All grading work in the Arroyo Zone will be accomplished using hand tools except where the use of small mechanical equipment to recontour a section of the north bank and to clean out sedimentation at a culvert may be required. Some grading is expected to occur in the Arroyo Buffer and Development Transition Zones.

A "safety zone" will be maintained adjacent to the pathways. The safety zone would be planted with grasses and may require periodic mowing as well as trimming of riparian trees adjacent to the safety zone. Directional lighting would also be installed along pedestrian pathways to increase pedestrian safety while minimizing impacts on the restored habitat adjacent to the pathways.

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. Approximately 120 trees outside the Arroyo would be removed (Appendix F).

[4] This table does not include the Arroyo Development Transition Zone, which is also part of the Arroyo Enhancement program. This transition zone will be regularly maintained and is not considered as contributing to mitigation.

The bridges over the 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 mechanical equipment will be placed in the upper areas outside the Arroyo.

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 garage would then proceed concurrently with the balance of the site grading.

Construction would require a wide assortment of heavy equipment. 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.

Proposed Project Impacts

The sections below address impacts on resources within the disturbance limits (shown in Figures 10 and 11).

Vegetation Community Impacts

Tables 5 and 6, below, provide impacts on each vegetation community based on project component. It is assumed that construction activities, including staging of construction equipment, would be within impact areas and/or currently developed areas. The majority of the project would be built on the annual grassland, developed, and landscaped area within the southern portion of the site, avoiding the majority of the Arroyo and riparian communities within the Arroyo. Some improvements would occur within the Arroyo resulting in impacts on annual grassland, ruderal, and riparian vegetation. Details regarding resources affected are provided below.

Table 5. Proposed Project Permanent Impacts on Vegetation Communities (acres)

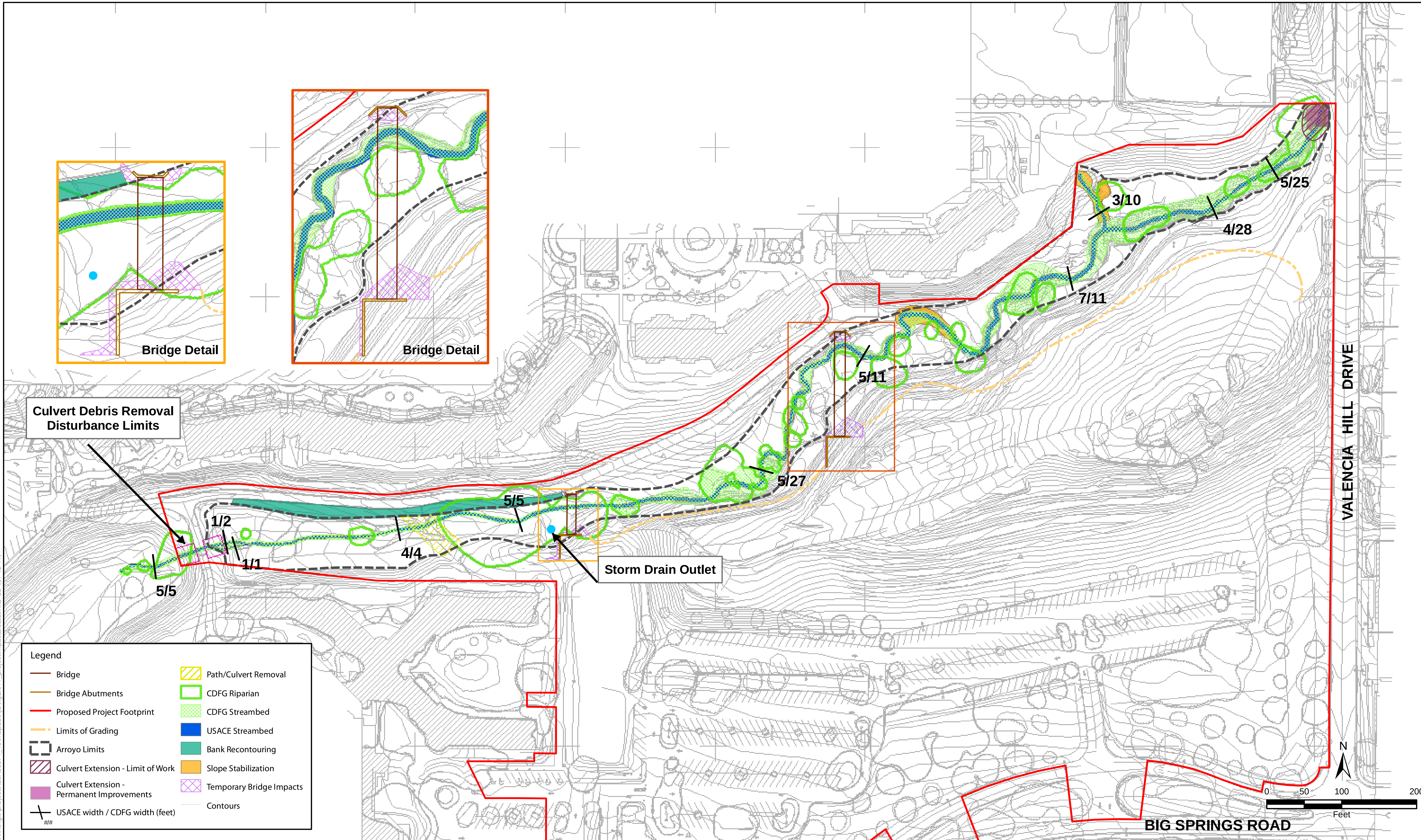
Proposed Project Impact	Rip - WW	Rip - Non-WW	ANG	RUD	LAND	DEV	Total
Permanent							
Buildings, circulation, parking structure, landscaping	---	---	5.9448	0.029	2.2024	4.4268	12.603
Arroyo Improvements							
Culvert Extension	---	0.016	0.0007	0.004	---	---	0.0207
Bridge 1 North Abutment	---	---	---	0.0007	---	---	0.0007
Bridge 1 South Abutment	---	---	0.0062	---	---	---	0.0062
Bridge 2 North Abutment	---	---	---	0.0005	---	---	0.0005
Bridge 2 South Abutment	---	---	---	0.0017	---	---	0.0017
Slope Stabilization 1	---	---	---	---	---	---	---
Slope Stabilization 2	---	---	---	---	---	---	---
Storm Drain Outlet	---	0.0018	---	---	---	---	0.0018
Arroyo Improvements Total							***0.0316***
Total Permanent	**---**	**0.0178**	**5.951**	**0.0359**	**2.2**	**4.43**	**12.63**

Table 6. Proposed Project Temporary Impacts on Vegetation Communities (acres)

Proposed Project Impact	Rip - WW	Rip - Non-WW	ANG	RUD	LAND	DEV	Total
Temporary							
Culvert Extension Work Area	---	0.0093	---	0.0037	---	---	0.013
Slope Stabilization 1	---	---	---	0.024	0.0018	---	0.0258
Slope Stabilization 1, Tree Removal	0.03	---	---	---	---	---	0.03
Slope Stabilization 2	---	---	---	0.0318	0.002	---	0.0338
Slope Stabilization 2, Tree Removal	0.02	---	---	---	---	---	0.02
Bridge 1 North Abutment	---	---	---	0.0047		---	0.0047
Bridge 1 South Abutment	---	---	0.0136	---	---	---	0.0136
Bridge 1 Tree Removal	0.0281	---	---	---	---	---	0.0281
Bridge 2 North Abutment	---	---	---	0.002	---	---	0.002
Bridge 2 South Abutment	---	---	---	0.0035	---	---	0.0035
Bridge 2 Tree Removal	---	0.0758	---	---	---	---	0.0758
Storm Drain Outlet		0.0017					0.0017
Path/Culvert Removal	---	---	---	0.0246	---	0.0162	0.0408
Bank Re-contouring		0.0374	---	0.0674	---	0.0269	0.1317
Culvert Debris Removal	---	0.009	---	0.0196	---	---	0.0286
Temporary Total	**0.0781**	**0.1332**	**0.0136**	**0.1813**	**0.0038**	**0.0431**	**0.4531**

ICF INTERNATIONAL

Figure 10
Vegetation Community Impacts
Glen Mor 2 Student Apartments Project
University of California, Riverside, California



ICF INTERNATIONAL

Figure 11
Arroyo and Jurisdictional Water Impacts
Glen Mor 2 Student Apartments Project
University of California, Riverside, California

Special-Status Vegetation Communities

Riparian Habitat

The Arroyo improvements of the proposed project would result in permanent impacts on approximately 0.02 acre of riparian habitat and in temporary impacts on 0.21 acre of riparian habitat, of which 0.08 acre are walnut woodland.

Culvert Extension

The culvert extension at Valencia Hill Drive would result in both permanent and temporary impacts. Permanent impacts would result from the installation of the pipe, headwall and associated fill, and rip rap. Temporary impacts would result from construction activities, such as equipment access and maneuvering, required for installation of the extension.

The calculation of impacts is a conservative estimate because of the inclusion of tree canopy cover in the calculations; however, a mature Fremont cottonwood tree at this location would be preserved in place. Vegetation in the understory, including native herbaceous and shrub species, would be removed.

Storm Drain Outlet

Installation of the storm drain outlet would result in both permanent and temporary impacts. Permanent impacts would result from the installation of the storm drain, headwall and riprap. Temporary impacts would result from construction activities, including removal of understory vegetation, required for installation of the outlet.

Slope Stabilization

Slope stabilization would occur at two locations along the north bank of the Arroyo. Site 1, a short side drainage that originates onsite just east of Glen Mor 1 and south of the recreational fields, would be stabilized with rock or a commercial stabilizer product and revegetated as part of the Arroyo Zone of the Arroyo Enhancement program.

Site 2 occurs just upstream of Bridge 1 at a sharp bend of the arroyo channel, where the channel has shifted to an engineered slope at the edge of the Glen Mor 1 student apartments site. Approximately 100 linear feet of the stream channel would be stabilized in a similar manner as described above to prevent any possible undermining of the engineered slope.

For Site 1, slope stabilization includes removal of a hybrid walnut tree (see Appendix F, Tree Removal Plan). The remainder of the stabilization area consists of ruderal and landscaped vegetation.

For Site 2, the limits of the stabilization area go through a patch of riparian-walnut woodland vegetation. For purposes of calculating impacts, it was assumed that all the trees within this patch would be removed during slope stabilization. The remainder of the stabilization area consists of ruderal and landscaped vegetation.

Bridges

For Bridge 1, tree removal is required for the span of the bridge resulting in the removal of a patch of riparian vegetation (walnut woodland) (see Appendix F, Tree Removal Plan). No other impacts would result to riparian vegetation as a result of Bridge 1.

For Bridge 2, tree removal is required for the span of the bridge resulting in the removal of a patch of riparian vegetation (see Appendix F, Tree Removal Plan). Additionally, riparian tree canopy overhangs the mapped work area associated with installation of the south abutment; however, this area would be avoided as a result of project minimization measures.

Path/Culvert Removal

An existing path with associated culvert traverses the Arroyo from south to north just north of Lothian Hall. The culvert and associated fill would be removed. Direct impacts would not occur to riparian vegetation as a result of this work. Riparian tree canopy overhangs the work area associated with removal of the path and culvert; however, this area would be avoided as a result of project minimization measures.

Bank Re-contouring

The north bank of the Arroyo, from Bridge 2 to the downstream project limits, would be regraded to establish a more natural-appearing condition. Riparian vegetation would be removed as a result of this work. The calculation of impacts is a conservative estimate because of the inclusion of tree canopy cover in the calculations, some of which may not need to be removed.

Culvert Debris Removal

At the western end of the Arroyo within the project limits, an existing culvert would be cleared of accumulated debris and sediment. Vegetation would be removed to clear the culvert and to allow for access and maneuvering of the small mechanized equipment (such as a Bobcat®) that would complete this work. The calculation of impacts is a conservative estimate because of the inclusion of tree canopy cover in the calculations, some of which may not need to be removed.

Significance Analysis

Avoidance measures detailed in measure BIO-1 would ensure that riparian vegetation adjacent to work areas would be avoided. Additionally, as described in measure BIO-2, revegetation would occur to restore riparian vegetation removed as a result of implementation of project components.

LRDP EIR Mitigation Measure 4.4-3(b) states that if riparian habitat would be removed, the University shall restore or enhance riparian habitat as required by the applicable State and/or federal resource agencies. In accordance with Mitigation Measure 4.4-3(b), measure BIO-2 provides for the revegetation of temporarily affected riparian habitat. This measure ensures that plantings conducted as part of Arroyo Enhancement would replace temporarily affected areas with the same habitat that was removed. This measure is developed to be in compliance with CDFG requirements; however, it may be modified by CDFG during the Streambed Alteration Agreement process.

The project includes enhancement of the Arroyo. Enhancements within the Arroyo include removal of non-native plant species and a restoration plan that will promote native plantings in upland and transition zone areas. Native plantings within the Arroyo will improve the functions and values of the riparian habitat within the Arroyo and adjacent upland areas. The Arroyo Enhancement program includes 1.7 acre of riparian restoration which would compensate for permanent impacts on 0.02 acre of riparian vegetation.

Implementation of the LRDP through compliance with Mitigation Measure 4.4-3(b) and enhancement of the Arroyo would compensate for impacts on riparian habitat through replacement of removed habitat and improved functions and values of riparian habitat. Proposed impacts on riparian habitat are less than-significant under CEQA with mitigation incorporated (significance criteria a, b, and e).

Naturalistic Open Space

The Arroyo is designated in the LRDP as naturalistic open space. The Arroyo is delimited at the transition to upland vegetation and generally includes the drainage, associated riparian vegetation, and upper terraces of the drainage. Arroyo improvements would result in impacts on approximately 0.3 acre of naturalistic open space. Vegetation communities within the Arroyo that would be affected consist of riparian and ruderal. Small areas mapped as landscaped (adjacent to Slope Stabilization Area 1) and developed (path) would also be affected. Table 7, below, details the breakdown of these impacts by vegetation community and project component.

Culvert Extension

In addition to the riparian areas discussed above, the culvert extension would permanently impact ruderal and annual grassland communities within the Arroyo as a result of the headwall and associated fill. Ruderal and annual grassland communities would also be temporarily affected within the associated work area as a result of construction activities associated with installation of the culvert extension. As discussed in measure BIO-1, the work footprint would be minimized to the maximum extent practicable. Temporary areas would be revegetated with native vegetation, as discussed in measure BIO-2, which would likely result in a plant community change from ruderal to riparian or native upland. This community change would be an enhancement to the Arroyo and is, therefore, not a permanent impact on the Arroyo.

Table 7. Proposed Project Impacts on Naturalistic Open Space (acres)

Proposed Project Impact	Rip - WW	Rip Non-WW	ANG	RUD	LAND	DEV	Total
Permanent							
Culvert Extension	---	0.016	---	0.0043	---	---	0.0203
Bridge1, North Abutment	---	---	---	0.0003	---	---	0.0003
Bridge1, South Abutment	---	---	---	---	---	---	---
Bridge 2, North Abutment	---	---	---	0.0003	---	---	0.0003
Bridge 2, South Abutment	---	---	---	0.0021	---	---	0.0021
Storm Drain Outlet	---	0.0018	---	---	---	---	0.0018
Permanent Total	***---***	***0.0178***	***---***	***0.007***	***---***	***---***	***0.0248***
Temporary							
Culvert Extension Work Area	---	0.0093	---	0.0037	---	---	0.013
Slope Stabilization 1	---	---	---	0.0243	0.0018	---	0.0261
Slope Stabilization 1- Tree Removal	0.03	---	---	---	---	---	0.03
Slope Stabilization 2	---	---	---	0.03	0.0004	---	0.0304
Slope Stabilization 2- Tree Removal	0.02	---	---	---	---	---	0.02
Bridge1, North Abutment	---	---	---	0.0028	---	---	0.0028
Bridge1, South Abutment	---	---	---	---	---	---	---
Bridge 1, Tree Removal	0.0281	---	---	---	---	---	0.0281
Bridge 2, North Abutment	---	---	---	0.0011	---	---	0.0011
Bridge 2, South Abutment	---	---	---	0.0027	---	---	0.0027
Bridge 2, Tree Removal	---	0.0625	---	---	---	---	0.0625
Storm Drain Outlet	---	0.0017	---	---	---	---	0.0017
Path/Culvert Removal	---	---	---	0.0244	---	0.0162	0.0406
Bank Re-contouring	---	---	---	---	---	---	---
Culvert Debris Removal	---	---	---	0.009	---	---	0.009
Temporary Total	***0.0781***	***0.0735***	***---***	***0.098***	***0.0022***	***0.0162***	***0.268***
Total Permanent and Temporary							**0.2928**

Rip – Riparian
WW – Walnut Woodland
ANG –Annual Grassland
RUD – Ruderal
DEV – Developed

Storm Drain Outlet

Impacts on the Arroyo from the storm drain outlet are the same as discussed above under Riparian Habitat.

Slope Stabilization

Impacts on the Arroyo would occur as a result of slope stabilization. In addition to the riparian habitat discussed above, these areas consist of ruderal and landscaped vegetation. The stabilization area would be covered with soil and planted with native vegetation; likely resulting in a change from ruderal vegetation to native scrub vegetation. This community change would be an enhancement to the Arroyo and is, therefore, not a permanent impact on the Arroyo.

Bridges

In addition to the riparian areas discussed above[5], abutments associated with both bridges would permanently impact ruderal within the Arroyo. Additionally, grading and bank retention associated with the north abutment of Bridge 2 would result in permanent impacts on ruderal vegetation.

Ruderal vegetation would also be temporarily affected within the associated work area for each bridge abutment. As discussed above under Riparian Habitat, measures would be implemented at the south abutment of Bridge 2 to avoid impact on riparian habitat. Minimization measures discussed in measure BIO-1 would be implemented for all bridge work areas to minimize temporary impacts on the Arroyo.

Temporary areas would be revegetated with native vegetation, as discussed in measure BIO-2, which would likely result in a plant community change from ruderal to riparian or native upland. This community change would be an enhancement to the Arroyo and, therefore, is not a permanent impact on the Arroyo.

Path/Culvert Removal

The path and associated culvert are within the Arroyo; therefore, removal of these features would result in impacts on the Arroyo. Impacts are limited to those associated with construction and are within either the ruderal community or the developed (i.e., path) area. This area would be revegetated with native vegetation after removal is complete; therefore, impacts on the Arroyo would be temporary. Measures would be implemented at this location during construction activities to avoid impacts on riparian habitat.

Bank Re-contouring

Bank re-contouring would occur outside the limits of the Arroyo. Project avoidance measures would be implemented to ensure encroachment into the Arroyo does not occur.

Culvert Debris Removal

Impacts on the Arroyo resulting from debris removal at the western culvert are the same as those discussed under Riparian Habitat above.

Arroyo Enhancement

Enhancement of the Arroyo will include targeted exotic species removal as well as native planting. This work will be conducted with hand tools. Although this program will result in overall increased

[5] Note that the riparian vegetation extends outside the Arroyo limits at the south bank at the location of Bridge 2; therefore, riparian impacts within the Arroyo for Abutment 2 and associated work area are less than total riparian impacts at this location.

functions and values of the Arroyo, temporary impacts would occur during implementation as a result of vegetation and mature (exotic) tree removal as well as disturbance associated with restoration crews (i.e., increased foot traffic, planting materials, etc). Project minimization measures would reduce potential indirect effects associated with the restoration.

Significance Analysis

The LRDP Program and Practice 4.4-1(b) provides policies to reduce disturbance of natural and naturalistic open space. Below are the policies in Program and Practice 4.4-1(b) and description of the project's compliance with each policy:

i. Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.

   Consistency Assessment: No new roads or construction access roads are proposed. Proposed measures BIO-1, BIO-3 and BIO-4 will minimize the potential for unnecessary driving in the Arroyo.

ii. Removal of native shrub or brush shall be avoided, except where necessary.

   Consistency Assessment: As discussed above, the Arroyo has been avoided as a part of the project, except for necessary improvements which are limited to 0.025 acre of permanent impact and 0.27 acre of temporary impact. Measure BIO-1 will minimize the potential for unnecessary native shrub or brush removal.

iii. Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.

   Consistency Assessment: As discussed above, the Arroyo has been avoided as a part of the project, except for necessary improvements. Measure BIO-1, BIO-3 and BIO-4 will minimize the potential for unnecessary encroachment into the drainage.

iv. Excess fill or construction waste shall not be dumped in washes.

   Consistency Assessment: This requirement is included in measures BIO-3 and BIO-4.

v. Vehicles or other equipment shall not be parked in washes or other drainages.

   Consistency Assessment: This requirement is included in measures BIO-3 and BIO-4.

vi. Overwatering shall be avoided in washes and other drainages.

   Consistency Assessment: This requirement is included in measures BIO-3 and BIO-4.

vii. Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.

   Consistency Assessment: This requirement is included in measure BIO-3.

As demonstrated above, the project is consistent with Program and Practice 4.4-1 (b). Project-specific measures BIO-3 and BIO-4 will ensure relevant measures of Program and Practice 4.4-1(b) are implemented during construction.

The Arroyo enhancement program will remove exotic species and establish new plantings within Naturalistic Open Space. The enhancement program includes 1.7 acre of riparian restoration and 2.2 acres of native upland restoration. Restoration of 3.9 acres within and adjacent to the Arroyo, of which 2.4 acres would occur within the Arroyo, would offset permanent impacts on 0.025 acre of the Arroyo. Measure BIO-2 ensures that functions and values of removed habitat are restored.

Temporary impacts on naturalistic open space may occur as a result of construction activities including impacts resulting from operation of construction equipment and presence of equipment and personnel within the Arroyo during implementation of Arroyo improvements and Arroyo enhancements. To minimize temporary construction impacts, the project proposes measure BIO-1, minimization of temporary impacts, measure BIO-2, revegetation of temporarily disturbed areas, BIO-3, a worker education program to maximize compliance with the best management practices outlined in Program and Practice 4.4-1(b), BIO-4 to monitor compliance with the LRDP policies, and BIO-5 to minimize the potential for invasive species resulting from construction to establish in the Arroyo.

Special-Status Plants

There are no listed plant species expected to occur within the disturbance limits.

There are five sensitive plant species with a low potential to occur within the disturbance limits. Potential impacts on these species are discussed below.

Sensitive Plant Species

Plummer's Mariposa Lily

There is a low potential for individuals of this species to occur within the study area, including the annual grassland. It is unlikely that a population of this species occurs within the study area; therefore, the project would not result in an adverse effect on this species.

Parry's Spineflower

The sandy soils within the Arroyo and the ruderal community have a low potential to support this species. Impacts would result to approximately 6 percent of habitat suitable for Parry's spineflower, including permanent impacts on 0.03 acre of ruderal areas outside the Arroyo, permanent impacts on 0.01 acre within the Arroyo, and temporary impacts on 0.1 acre of ruderal habitat within the Arroyo. Impacts to less than 10 percent of the total potential suitable habitat constitutes a less than significant impact to this species.

Enhancement of the Arroyo would result in temporary impacts to the Arroyo associated with crews conducting planting in the Arroyo. Enhancement activities within the Arroyo would primarily be conducted with handtools and would not result in extensive soil disturbance that would disturb the seed bank of this species, if present. Since these activities would not remove habitat suitable for the species and would not disturb a seed bank, these activities would not result in significant impacts on the species. Additionally, enhancement of 3.9 acres within and adjacent to the Arroyo would result in improved functions and values to habitat suitable for the species, which is an overall positive impact on the species.

Long-spined Spineflower

Based on CNDDB records of this species occurring in annual grassland on sandy/gravelly soils, the potential for this species to occur within the annual grassland and ruderal communities on site cannot be ruled out. Because of the regularly disturbed conditions of the annual grassland dating back to the early 1900s, it is unlikely that a population of long-spined spineflower occurs or that the site provides a seed bank that would support a viable population. 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. Permanent impacts on individuals of this species, should they be present, would not result in significant impacts on the species.

Habitat suitable for long-spined spineflower 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; therefore, the project would have an overall positive impact on suitable habitat for this species.

California Black Walnut

The walnuts within the study area are hybrids and therefore, are not special-status species. The LRDP Planning Strategy Conservation 2 states that mature trees will be avoided whenever possible. The mature walnuts within the project site would be avoided. Shrubby or immature walnuts may be removed; however, as the walnuts on site are hybrids, removal of hybrid immature walnuts does not constitute a significant impact.

San Bernardino Aster

The Arroyo within the study area has the potential to support this species. The project would result in permanent impacts on 0.025 acre of suitable habitat, totaling approximately 1 percent of suitable habitat. Temporary impacts would result on approximately 0.15 acre of suitable habitat (impacts within the Arroyo not including tree removal) which is approximately 6.5 percent of suitable habitat. Impacts on less than 10 percent of the total suitable habitat constitutes a less than significant impact on the species. Additionally, restoration of approximately 3.9 acres within and adjacent to the Arroyo would result in positive impacts to the species.

Significance Analysis

There are no sensitive plants with a moderate or greater potential to occur within the disturbance limits; therefore, in accordance with the LRDP EIR measure Mitigation Measure 4.4-1(a), focused surveys for special-status plants are not required.

Based on the impacts analysis, significant impacts on special-status plants would not occur as a result of the project and mitigation is not required (significance criteria a, b, and e).

Special-Status Wildlife

None of the listed wildlife species in the vicinity of the study area have the potential to occur within the disturbance limits.

There is one special-status wildlife species, burrowing owl, with a moderate to high potential to occur within the disturbance limits. In accordance with LRDP EIR Mitigation Measure 4.4-1(a), protocol surveys for burrowing owl were conducted and are discussed below.

Cooper's hawk has a moderate potential to forage within the disturbance limits; however, this species only has a low potential to nest within the disturbance limits. Potential impacts on raptor foraging habitat is discussed in a separate section below. Potential impacts on Cooper's hawk and 13 other sensitive wildlife species with a low potential to occur within the disturbance limits are discussed below.

Rosy boa

The riparian and annual grassland communities provide marginal habitat for this species. The majority of the riparian habitat would be avoided and the Arroyo would be enhanced, providing increased functions and values of the habitat for this species. Because of the regular disturbance 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. Because of the avoidance and enhancement of the Arroyo and low potential for this species to occur, impacts on rosy boa as a result of the project would be less than significant.

Birds

There are seven special-status bird species with a low potential to occur. White-tailed kite, northern harrier, Cooper's hawk, golden eagle, and yellow warbler have the potential to forage on the site. Raptor foraging is discussed further in a separate section below and impacts on raptor foraging would be less than significant. As there is no breeding habitat for these species within the disturbance limits, there would be no impacts on breeding habitat. Overall impacts on these species would be less than significant as there would be no impacts on breeding habitat and less than significant impacts on foraging habitat.

Loggerhead shrike has the potential to occur in the annual grassland community and adjacent scattered trees. Potential impacts on breeding loggerhead shrike are addressed in the pre-construction nest survey and avoidance requirements of LRDP mitigation measures 4.4-4(a) and 4.4-4 (b). Impacts on raptor foraging habitat are discussed in a separate section below. With implementation of the program-level measures, impacts on this species would be less than significant.

Burrowing owl has the potential to occur in the annual grassland community. Although burrowing owls were not observed during focused surveys, there is potential for migration that could result in occupancy of the study area during any time of the year, and the potential for burrowing owls to occupy burrows and forage within the annual grassland in the future cannot be ruled out.

Mammals

There are five special-status mammals with a low potential to occur within the disturbance limits. Los Angeles pocket mouse and northwestern San Diego pocket mouse have the potential to occur within the Arroyo. 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 these species. Therefore, the project would not result in significant impacts on these species.

Western yellow bat and pallid bat have the potential to forage within the disturbance limits. Foraging habitat for these bat species is similar to raptor foraging habitat within the disturbance limits; therefore, this impact is discussed under Raptor Foraging, below. Impacts on bat foraging would be less than significant. Because of the lack of roosting habitat within the disturbance limits, there would be no impacts on roosting habitat. As there would be no impacts on roosting habitat and less than significant impacts on foraging habitat, overall impacts on these species would be less than significant.

San Diego black-tailed jack rabbit has the potential to occur within the Arroyo and annual grassland community. The majority of the Arroyo would be avoided and the Arroyo would be enhanced, providing increased functions and values of the habitat for this species. The annual grassland is an isolated patch of habitat and the LRDP preserves open space areas that are more suitable for this species (see Raptor Foraging discussion). 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. Mortality of individuals of San Diego black-tailed jack rabbit would not adversely affect the local population of this species. Additionally, enhancement of the Arroyo would result in improved functions and values of habitat for these species and the LRDP would result in preservation of habitat for this species .Impacts on this species as a result of the project would be less than significant.

Significance Analysis

There is one special-status wildlife species, burrowing owl, with a moderate to high potential to occur within the disturbance limits. In accordance with LRDP EIR Mitigation Measure 4.4-1(a), protocol surveys for burrowing owl were conducted as discussed above. Although these surveys were negative, there is the potential for burrowing owl to occupy the site prior to construction. In order to verify compliance with Mitigation Measure 4.4-1(a) prior to start of construction, project specific measure BIO-5 requires pre-construction surveys. If burrowing owl individuals or presence indicators are observed during the pre-construction survey, passive relocation and/or avoidance of the occupied burrow will be necessary, as discussed in measure BIO-5, in order to comply with Mitigation Measure 4.4-1 (b). Potential impacts on burrowing owl are less-than-significant under CEQA with mitigation incorporated (significance criteria a, b, and e).

Other Opportunities and Constraints

Nesting Birds

Any project-related impacts on native nesting birds during the breeding season would conflict with Migratory Bird Treaty Act and CDFG code and would represent a significant impact under CEQA. Pre-construction nesting bird surveys and avoidance of active nests in accordance with LRDP Mitigation Measures 4.4-4(a) and (b) would reduce potential impacts on nesting birds to below a level of significance (significance criteria d). Project measure BIO-7 provides project-specific recommendations for implementation of LRDP Mitigation Measure 4.4-4.

Raptor Foraging Habitat

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 (Planning Strategy Conservation 1); conserve limited land resources and agricultural fields (Planning Strategy Conservation 3); preserve natural hillsides (Planning Strategy Open Space 1 and 2); preserve existing landforms, native plant materials, and where appropriate, restore habitat and foraging values (Planning Strategy Open Space 3). The implementation of these Planning Strategies within the LRDP area would reduce impacts on raptor and special-status avian foraging habitat. Based upon the LRDP program-level measures the loss of foraging areas within the biological study area would not be significant and no mitigation is required (significance criteria d).

Jurisdictional Areas

Jurisdictional waterways within the project site are limited to the drainage within the Arroyo. The project is substantially avoiding impacts on the Arroyo, limiting impacts only to required improvements. The Arroyo would also be subject to an Enhancement program which would result in improved functions and values of the Arroyo and associated jurisdictional waterways. Improvements required within the Arroyo, including culvert improvements, storm drain improvements, and pedestrian bridge construction, would result in an impact on jurisdictional waters. Table 8, below, provides impacts on jurisdictional waters by project component.

Table 8. Proposed Project Impacts on Jurisdictional Areas

	USACE/RWQCB		CDFG			
Proposed Project Impact	Linear Feet	Acres	Total CDFG Acres[1]	CDFG Streambed Only	CDFG Riparian Total	Linear Feet
Permanent						
Culvert Extension	31.2	0.00352	0.01743	*0.01723*	*0.0162*	31.2
Slope Stabilization 1	75.7	0.00687	0.00687	*0.00687*	---	---
Slope Stabilization 2	---	---	---	---	---	---
Bridge – Abutments(all)	NA		---	---	---	---
Storm Drain Outlet			0.0018	---	*0.0018*	---
Path/Culvert Removal	NA	NA	NA	*NA*	*NA*	NA
Bank Re-contouring	NA	NA	NA	*NA*	*NA*	NA
Culvert Debris Removal	NA	NA	NA	*NA*	*NA*	NA
Permanent Total	106.9	0.01039	0.0243	*0.0241*	*0.018*	31.2
Temporary						
Culvert Extension – Limit of Work	19.4	0.0023	0.01062	*0.01052*	*0.0093*	19.4
Slope Stabilization 1	---	---	0.00713	*0.00713*	---	78.7
Slope Stabilization 1 – tree removal	---	---	0.03	---	*0.03*	---
Slope Stabilization 2 (including tree removal)	101	0.01387	0.03931	*0.02531*	*0.02*	101
Bridge 1- North Abutments	NA	NA	---	---	---	---
Bridge 1 – South Abutments	NA	NA	---	---	---	---
Bridge 1– Tree Removal	NA	NA	0.0281	*0.00113*	*0.0281*	19.2
Bridge 2- North Abutments	NA	NA	---	---	---	---
Bridge 2 – South Abutments	NA	NA	---	---	---	---
Bridge 2– Tree Removal	71.6	0.00822	0.0758	*0.00948*	*0.0758*	71.6
Storm Drain Outlet	NA	NA	0.0017	---	*0.0017*	---
Path/Culvert Removal	34.2	0.00314	0.00433	*0.00433*	---	34.2
Bank Re-contouring			0.0373	---	*0.0373*	
Culvert Debris Removal	74.6	0.0052	0.01423	*0.0098*	*0.009*	49.5
Temporary Total	300.8	0.03273	0.41	*0.067*	*0.3712*	373.6

[1] Total CDFG is not additive of CDFG streambed and CDFG riparian because CDFG riparian overlaps with

	USACE/RWQCB		CDFG			
Proposed Project Impact	Linear Feet	Acres	Total CDFG Acres[1]	CDFG Streambed Only	CDFG Riparian Total	Linear Feet
streambed.						

Project Component

Culvert Extension

Arroyo improvements include an extension of the existing culvert at Valencia Hill Drive. Installation of the pipe, headwall and associated fill, and rip rap would result in permanent impacts on jurisdictional waters of the United States and CDFG streambeds including approximately 0.02 acre of riparian habitat. Extension of the culvert 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 approximately 20 linear feet of channel upstream of the new headwall.

Work activities associated with the culvert extension would result in temporary impacts on jurisdictional waters of the United States and CDFG streambeds including 0.01 acre of riparian habitat; however, native mature tree removal would be minimized to the extent practicable. A large cottonwood occurring at the culvert extension location would be avoided. Vegetation in the understory, including native herbaceous and shrub species, would be removed.

Storm Drain Outlet

The storm drain outlet and associated work area are outside of waters of the United States but within CDFG associated riparian vegetation. A total of 0.0018 acre of permanent impacts and 0.0017 of temporary impacts would result to riparian vegetation associated with a CDFG jurisdictional streambed.

Slope Stabilization

Bank stabilization would occur at two locations along the north bank of the Arroyo. Site 1, a short side drainage of approximately 70 linear feet that originates onsite just east of Glen Mor 1 and south of the recreational fields, would be stabilized with rock or a commercial stabilizer product and revegetated as part of the Arroyo Zone of the Arroyo enhancement program.

Site 2 occurs just upstream of the proposed eastern bridge at a sharp bend of the arroyo channel, where the channel has shifted to an engineered slope at the edge of the Glen Mor 1 student apartments site. Approximately 100 linear feet of the stream channel would be stabilized in a similar manner as described above to prevent any possible undermining of the engineered slope. 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.

For Site 1, the placement of rock fill material in the bed of the channel was determined to be a permanent impact on waters of the United States and the bed of CDFG jurisdictional streambed. The banks of the stabilization area would be covered with soil and planted with vegetation; therefore, bank stabilization was determined to be a temporary impact on the banks of CDFG jurisdiction. Bank stabilization would include temporary impacts on 0.03 acre of riparian habitat, including removal of a hybrid walnut tree.

For Site 2, the drainage would no longer continue within the delineated limits but would shift and generate a new flow channel. The new channel, although potentially different in length, would serve the same functions as the current channel. Therefore, impacts on the bed of the channel were determined to be a temporary impact on waters of the United States. As with Site 1, impacts on the banks were determined to be a temporary impact on a CDFG jurisdictional streambed, including 0.02 acre of riparian-walnut woodland habitat. As discussed under Riparian Habitat above, a conservative approach was used to determine impacts on riparian habitat, assuming all trees would be removed and not just canopy/vegetation within the limits of the slope stabilization area.

Bridges

The bridge abutments and associated work areas are located outside of waters of the United States and CDFG jurisdictional streambed. Tree removal associated with placement of the bridge would remove riparian vegetation associated with a CDFG jurisdictional streambed, totaling 0.028 acre at Bridge 1 and 0.076 acre at Bridge 2. Tree removal at Bridge 1 is within waters of the United States. A conservative approach was used and assumed that removal of trees would result in temporary impacts on waters of the United States.

The riparian vegetation within the tree removal area for Bridge 1 extends over the streambed banks. It is expected that tree removal could be accomplished without impacting the banks at this location; however, a conservative approach was used and impacts on 0.00113 acre of streambed was assumed. This impact would be temporary as revegetation would occur within the drainage for the plant community removed and banks, if affected, would be recontoured to existing conditions.

Path/Culvert Removal

An existing path with associated culvert traverses the Arroyo from south to north just north of Lothian Hall. The culvert and associated fill would be removed resulting in temporary impacts on jurisdictional waters of the United States and CDFG streambed. This area would be revegetated with native vegetation after removal is complete and the channel recontoured; therefore, impacts on jurisdictional waters would be temporary.

Bank Re-contouring

The north bank of the Arroyo, from the western of the two new bridges to the downstream project limits, would be regraded to establish a more natural-appearing condition. Work would not encroach into the channel. An impact analysis of the vegetation communities shows an impact on 0.04 acre of CDFG Riparian habitat as a result of bank recontouring; however, activity would be limited to the ground surface under the canopy, no trees would be removed in this area.

Culvert Debris Removal

At the western end of the Arroyo within the project limits, an existing culvert would be cleared of accumulated debris and sediment. Debris removal at the culvert would result in temporary impacts on jurisdictional waters of the United States and CDFG streambed during excavation of the sediment and removal of vegetation to access the culvert, including 0.009 acre of associated riparian vegetation.

Significance Analysis

Permanent impacts on jurisdictional waters and streambeds are limited to the culvert extension and slope stabilization totaling 0.01 acre of waters of the United States (within 107 linear feet) and 0.02 acre of CDFG jurisdictional streambed (within 31 linear feet). All jurisdictional waters and streambeds are within the Arroyo and are subject to the Arroyo Enhancement program. The Arroyo Enhancement program totals 3.9acres of which 1.7 acre would be riparian restoration. Restoration of 1.7 acre of riparian habitat would compensate for permanent impacts on waters of the United States and CDFG jurisdictional streambed.

Areas of temporary impacts would be revegetated with the native community currently present (i.e., riparian habitat) or with native vegetation where it is not currently present (i.e., ruderal/annual grassland).

Implementation of the LRDP through compliance with Program and Practice 4.4-1(b) including proposed measure BIO-3, and compliance with Mitigation Measure 4.4-3(b), including proposed measures BIO-1 and BIO-2 would result in less than significant impacts under CEQA to jurisdictional waters and streambeds.

WRC MSHCP Consistency Analysis

The proposed project occurs within the WRC MSHCP area. 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 WRC MSHCP has survey requirements for species that are not adequately conserved. Only one species for which the WRC MSHCP has survey requirements has the potential to occur within the project footprint, burrowing owl. The protocol surveys conducted within the project site followed the WRC MSHCP survey methodology for burrowing owl. Measures to avoid impacts on burrowing owl are described in measure BIO-5 and were developed to be consistent with avoidance measures for burrowing owl in the WRC MSHCP.

In addition to survey requirements, the WRC MSHCP has avoidance and mitigation requirements for impacts on riparian/riverine habitat. The WRC MSHCP stipulates that riparian habitat 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 project, in compliance with Program and Practice 4.4-1(b) as discussed above, has minimized impacts on riparian habitat. Compliance with Mitigation Measure 4.4-3(b) and the Arroyo Enhancement program as discussed in measure BIO-2 would result in equal or superior functions and values of the riparian/riverine habitat on site. As a result, the project is consistent with this requirement of the WRC MSHCP.

The project site does not support soils considered sensitive by the WRC MSHCP nor does it contain vernal pools or fairy shrimp habitat.

The proposed project is consistent with the requirements of the WRC MSHCP (significance criteria f).

Chapter 6
Minimization and Mitigation

The following mitigation measures will provide for avoidance, minimization, and mitigation of project impacts on sensitive biological resources.

Applicable LRDP Programs and Practices and Mitigation Measures

Planning Strategy Conservation (1)

Protect natural resources, including native habitat; remnant arroyos; and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible.

Planning Strategy Conservation (2)

Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce stormwater runoff, and maintain existing landscapes, including healthy mature trees whenever possible.

Planning Strategy Conservation (3)

Continue with the increase in building densities on campus, particularly in academic zones, in order to preserve open space and conserve limited land resources and the agricultural fields.

Program and Practice 4.4-1(b) To reduce disturbance of natural and naturalistic open space areas

(i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.

(ii) Removal of native shrub or brush shall be avoided, except where necessary.

(iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.

(iv) Excess fill or construction waste shall not be dumped in washes.

(v) Vehicles or other equipment shall not be parked in washes or other drainages.

(vi) Overwatering shall be avoided in washes and other drainages.

(vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.

Program and Practice 4.4-2(a)

Impacts on riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code Section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the USACE and CDFG through the state and federal permit process. The permit shall mitigate the habitats such that they are consistent with the Clean Water Act and CDFG policy of “no net loss” of wetland. Furthermore, affected wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the USACE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of affected areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat.

Program and Practice 4.4-2(b)

In compliance with National Pollutant Discharge Elimination System, the campus would continue to implement best management practices, as identified in the UCR Stormwater Management Plan (UCR 2003):

(i) Public education and outreach on stormwater impacts,

(ii) Public involvement/participation,

(iii) Illicit discharge detection and elimination,

(iv) Pollution prevention/good housekeeping for facilities,

(v) Construction site stormwater runoff control, and

(vi) Post-construction stormwater management in new development and redevelopment.

Mitigation Measure 4.4-1(a)

To ensure that potential impacts on special-status plant and wildlife species that are known to occur within the natural and naturalistic areas of the campus or have a moderate or greater potential to occur (refer to Tables 4.4-1 and 4.4-2) are reduced to less than significant levels, the campus shall conduct surveys for special-status species prior to disturbance of areas or habitat that are known to support the species. The university shall conduct surveys of the area(s) in accordance with applicable protocols or guidelines developed by the CDFG and/or USFWS, as applicable.

Mitigation Measure 4.4-1(b)

If surveys determine that special-status plant or animal species are present, the following measures shall be implemented:

(i) Vegetation: If sensitive plant species or habitats are observed and would be affected by project related activities, a qualified botanist shall develop a species or habitats-specific replacement plan. This plan shall include elements to limit project impacts such as the relocation of individual specimens, the collection of seeds and replanting, or the preservation and movement of topsoil that contains the seed bank. If replacement within the project area is not feasible, then an approved mitigation bank shall be used. For either case, on-site or off-site revegetation, a mitigation monitoring plan shall be prepared and approved by the CDFG prior to start of construction.

(ii) Wildlife: If special-status wildlife is found within areas of proposed construction and avoidance is not feasible, the campus will consult with the appropriate agencies, obtain any necessary State or federal permits, and prepare a mitigation plan for those special-status species that would be affected. The mitigation plan would be subject to the approval of applicable State and/or federal agencies, and may include measures such as the relocation of the affected species, protection of other on-campus habitat where the plant or animal is known to occur, or site preparation and revegetation to create suitable habitat.

Mitigation Measure 4.4-3(a)

When habitat that could be regulated by the Clean Water Act (Section 404) would be affected, either directly or indirectly, the university shall perform a jurisdictional and/or wetland delineation to assess the extent of the jurisdictional area(s).

Mitigation Measure 4.4-4(a)

Prior to the onset of construction activities that would result in the removal of mature trees that would occur between March and mid-August, surveys for nesting special-status avian species and raptors shall be conducted on the affected portion of the campus following USFWS and/or CDFG guidelines. If no active avian nests are identified on or within 250 feet of the construction site, no further mitigation is necessary.

Mitigation Measure 4.4-4(b)

If active nests for avian species of concern or raptor nests are found within the construction footprint or a 250-foot buffer zone, exterior construction activities shall be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation have been developed and implemented in consultation with USFWS and CDFG.

Project-specific Measures and Mitigation

BIO-1 Minimize Temporary Impacts

In compliance with Programs and Practices 4.4-2(a) and 4.4-1(b), impacts on naturalistic open space shall be minimized. 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 jurisdiction 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 re-contouring; and
- the mature cottonwood tree near the Valencia Hill culvert extension work limit.

BIO-2 Revegetation

In compliance with LRDP Program and Practice 4.4-2(a) and Mitigation Measure 4.4-3(b), 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.

BIO-3 Worker Education Program

To ensure compliance with best management practices identified in 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-4 Biological Monitoring

A qualified biologist shall monitor the project for compliance with best management practices outlined in 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 Measure BIO-1.

BIO-5 Removal of 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.

BIO-6 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 of 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.

BIO-7 Nesting Birds

In compliance with LRDP Mitigation Measure 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.

Chapter 7
References

American Ornithologists' Union. 1998. *Checklist of North American Birds, 7th Edition*. Washington, DC: American Ornithologists' Union.

American Ornithologists' Union. 2000. Forty-second Supplement to the American Ornithologists' Union Checklist of North American Birds. In *Auk* 117:847–858.

Baker, R. J., L. C. Bradley, R. D. Bradley, J. W. Dragoo, M. D. Engstrom, R. S. Hoffmann, C. A. Jones, F. Reid, D. W. Rice, and C. Jones. 2003. *Revised Checklist of North American Mammals North of Mexico, 2003*. Lubbock, TX: Occasional Papers, Museum of Texas Tech University, Number 229.

California Burrowing Owl Consortium. 1997. Burrowing Owl Survey Protocol and Mitigation Guidelines. In *Journal of Raptor Research Report* 9:171–177.

California Department of Fish and Game. 2010. *California Natural Diversity Database.*

California Native Plant Society. 2010. *Inventory of Rare and Endangered Plants.*

Collins, J. T., and T. W. Taggart. 2009. *Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians, 6th Edition*. Lawrence, KS: The Center for North American Herpetology.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experimental Station.

Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing Owl (*Speotyto cunicularia*). In *The Birds of North America*, *No. 61*. A. Poole and F. Gill (eds.). Philadelphia: The Academy of Natural Sciences; Washington, D.C: The American Ornithologists' Union.

Hickman, J. C., editor. 1993. The Jepson Manual: Higher Plants of California. Berkeley: University of California Press.

Jones & Stokes. 2003. *Delineation of Jurisdictional Waters and Wetlands for the Arroyo Student Housing Project at the University of California, Riverside*. December.

Regents of the University of California. 2008. *Consortium of California Herbaria*. Available: <http://ucjeps.berkeley.edu/cgi-bin/new_detail.pl?UCR209195>.

Riverside County Transportation and Land Management Agency. 2010a. *Riverside County Integrated Project Conservation Summary Report Generator*. Available: <http://www.rctlma.org/online/content/rcip_report_generator.aspx>. Accessed: June 1, 2010.

Riverside County Transportation and Land Management Agency. 2010b. *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area.* Available: <http://www.rctlma.org/epd/documents/survey_protocols/burrowing_owl_survey_instructions.pdf>.

Roberts, F., S.D. White, A. C. Sanders, D.E. Bramlet, and S. Boyd. 2004. *The Vascular Plants of Western Riverside County, California: An Annotated Checklist*. San Luis Rey, CA: F. M. Roberts Publishing; 1st edition.

Shuford, W. D., and T. Gardali, eds. 2008. California Bird Species of Special Concern. Studies of Western Birds No. 1. Camarillo, CA, and Sacramento, CA: Western Field Ornithologists and California Department of Fish and Game.

University of California, Riverside. 2005 Long Range Development Plan Final Environmental Impact Report. November 2005. (Volume II includes Appendix B – Biological Resources Technical Report; Volume III includes Chapter D - Mitigation Monitoring and Reporting Program)

University of California, Riverside. 2005 Long Range Development Plan. November 2005.

U.S. Army Corps of Engineers. 2008a. *A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States*. R. W. Lichvar and S. M. McColley (eds.). ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.

U.S. Army Corps of Engineers. 2008b. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* J. S. Wakeley, R. W. Lichevar, and C. V. Noble (eds.). ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Corps of Engineers, Research and Development Center and Engineering Laboratory.

U.S. Department of Agriculture, Natural Resources Conservation Service. 1972. *Official Soil Series Description: Gorgonio Series.* August. Available: <https://soilseries.sc.egov.usda.gov/osdname.asp>.

U.S. Department of Agriculture, Natural Resources Conservation Service. 1999. *Official Soil Series Description: Hanford Series*. October. Available: <https://soilseries.sc.egov.usda.gov/osdname.asp>.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2003. *Official Soil Series Description: Monserate Series*. January. Available: <https://soilseries.sc.egov.usda.gov/osdname.asp>.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2010a. *Web Soil Survey*. Prepared by soil survey staff. Available: <http://websoilsurvey.nrcs.usda.gov/>. Accessed: June 1, 2010.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2010b. *Field Indicators of Hydric Soils in the United States (Version 7.0).*

U.S. Department of Agriculture, Natural Resources Conservation Service. 2010c. *National Hydric Soils List by State*. <Available: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/ Lists/ca.xls>. Accessed July 30, 2010.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2010d. *Official Soil Series Descriptions*. Prepared by soil survey staff. Available:<http://soils.usda.gov/ technical/classification/osd/index.htm>. Lincoln, NE. Accessed: July 23, 2010.

U.S. Department of Agriculture, Soil Conservation Service. 1994. *Changes in Hydric Soils of the United States*. Federal Register 59 (133):35680–35681, July 13.

U.S. Fish and Wildlife Service. 1988. *National List of Plant Species that Occur in Wetlands: California (Region 0)*. Biological Report 88 (26.10). Washington, DC: Published by the U.S. Fish and Wildlife Service in cooperation with the National and Regional Interagency Review Panels. U.S Department of the Interior.

U.S. Geological Survey. 1980. *Riverside East 7.5-minute Quadrangle*. Dated 1967; photo revised in 1980.

University of California, Riverside. 2003. *Stormwater Management Plan*.

Western Regional Climate Center. 2008. *Climatological Summary*. Period of Record: April 1998 to December 2008.

Zarn, M. 1974. Burrowing Owl Report No. 11. Habitat Management Series for Unique or Endangered Species. Denver, CO: U.S. Department of the Interior, Bureau of Land Management Technical Note T-N 250, 25 pp.

Appendix A
Special Status Species

Appendix A. Regional Special Status Species and Natural Communities

This appendix addresses all species with applicable special regulatory or management status whose general range includes the study area or whose habitat occurs within the USGS 7.5-minute Riverside East quadrangle and the eight surrounding quadrangles (Fontana, San Bernardino South, Sunnymead, Perris, Redlands, Riverside West, Lake Mathews, and Steele Peak). Additional species addressed in the University of California, Riverside (UCR) Long-Range Development Plan (LRDP) Environmental Impact Report (EIR) were also included.

Information provided in Table A-1 includes special-status codes and their meanings, and a species information table listing the English and scientific names, current special-status, likelihood of occurrence within the study area, and specific notes relevant to likelihood of occurrence.

Conclusions provided in this report are limited to biology, and do not address regulatory or management issues. For interpretation of this information under applicable laws, regulations, and court precedent, see the relevant portion(s) of the report. Judgments regarding likelihood of occurrence are based on evaluation of available biological information regarding regional and local conditions, species biology, available evaluations of the study area and vicinity, and professional experience conducting field investigations across California over many years. Though professional, such judgments are necessarily subjective at least in part.

Specific factors substantially affect likelihood of occurrence for individual species on any particular study area. These factors are relevant at multiple scales, including regionally, locally, and within the study area. These factors include the presence or absence of other particular species (e.g., predators, prey), climate, ongoing disturbances, historical land use and other past disturbances such as fire history, surface and subsurface hydrology, soil texture and chemistry, study area and habitat size and topology (i.e., shape and fragmentation), past population fluctuations of the species in response to random and nonrandom events, and many other factors, including many not readily visible. Note that some species, including some amphibians and many birds and bats, can occur in multiple roles. Thus, likelihood of occurrence, habitat use, and abundance may vary accordingly.

Finally, note that likelihood of occurrence for a given species refers to a time scale of a few years up to perhaps 10 years under current or assumed resources and conditions.

Terms for Likelihood of Occurrence in the Study Area

The following terms for likelihood of occurrence within the study area are defined in accordance with those used in the LRDP EIR:

Confirmed Absent

- Focused survey confirmed the species is absent;

No potential to occur

- Preferred habitat does not occur within the project footprint or is severely degraded within the project footprint;

Low potential to occur

- Habitat may occur within the project footprint; however, it occurs in limited quantities or is of degraded quality,
- Species may have been observed in the vicinity of the project footprint; however, observations have been infrequent;

Moderate potential to occur

- Habitat of moderate quantity and quality occurs within the project footprint,
- Species has been observed in the vicinity of the project footprint with moderate frequency;

High potential to occur

- Ideal, high quality habitat occurs within the project footprint,
- Species has been observed within the Riverside East USGS quadrangle within the last two decades; and

Known to occur

- Species has been observed within the project footprint.

Key to Table A-1

[a] STATUS CODES	MSHCP	CNPS
Federal E = Federally listed; Endangered T = Federally listed; Threatened FC = Federal Candidate for Listing D = Delisted State E = State listed; Endangered T = State listed; Threatened SCD = State Candidate for Delisting CSC = California Species of Special Concern CFP = California Fully Protected Species	MSHCP = Species included under Western Riverside County Multiple Species Habitat Conservation Plan.	1A = Plants presumed extinct in California 1B = Plants rare, threatened, or endangered in California and elsewhere 2 = Plants rare, threatened, or endangered in California, but more common elsewhere 3 = Plants about which we need more information 4 = Limited distribution (Watch List) 0.1 = Seriously endangered in California 0.2 = Fairly endangered in California 0.3 = Not very endangered in California CNDDB = Vegetation community classified as depleted

Table A-1. Regional Special Status

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
PLANTS				
Alvin Meadow Bedstraw (*Galium californicum* ssp. *primum*)	-/-/1B.2/-	Typically blooms in the period from May to July in shady situations with granitic and sandy soils within chaparral and lower pine forest, at elevations within about 4428 to 5576 feet. Only three localities are known: two in the San Jacinto Mountains of Riverside County, and one from the San Bernardino Mountains of San Bernardino County.	No potential to occur	Study area occurs well below elevation range for species. In addition, there is no suitable habitat within the study area.
Bristly Sedge (*Carex comosa*)	-/-/2.1/-	Inhabits coastal prairies, marshes, swamps, and valley and foothill grasslands. Found from sea level to 2050 feet.	No potential to occur	No coastal habitat or wetlands occur within the study area. No *Carex spp.* were observed.
California Black Walnut (*Juglans californica ssp. californica*)	-/-/4.2/MSHCP	A deciduous tree. Blooms from March to May in alluvial soils of cismontane woodland, chaparral, coastal scrub, riparian scrub, and walnut-oak woodland from about (164 to 2952 feet elevation. Known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties. Threatened by urbanization, grazing, and possibly lack of natural reproduction (hybridization).	Confirmed absent	There are scattered walnut (*Juglans* sp.) species on the project site. California Black Walnut has not been documented within the region (CNDDB 2010; CNPS 2010); however, there are a number of walnuts (*Juglans* sp.) that have been documented on the UCR campus by Andy Sanders and Rick Reifner. Based on these experts' observations, these walnuts are hybrids of *J. californica* x *J. nigra*. *REFERENCE: http://ucjeps.berkeley.edu/cgi-bin/new_detail.pl?UCR209195.*
Chaparral Sand-Verbena (*Abronia villosa* var. *aurita)*	-/-/1B.1/-	Found in sandy soil within coastal scrub and mostly broad alluvial fans and benches. Known to occur in northern Orange County, western Riverside County, San Diego County, and southern Imperial County. It blooms from January to August at elevations from 262 to 5,248 feet. It is threatened by flood control activities.	No potential to occur	No broad alluvial fans or coastal scrub habitat present within study area.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*)	-/-/1B.1/MSHCP(d)	Wide-ranging herb in southern California, with known occurrences including Los Angeles, Orange, Riverside, San Bernardino, and San Diego and other counties. This annual herb occurs in saline places such as coastal saltmarsh, inland playas, and vernal pools below an elevation of 4002 ft.	No potential to occur	No vernal pools or saline areas are present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Gambel's Watercress (*Nasturtium gambelii*)	E/T/1B.1/-	A wetland herb originally found from San Luis Obispo County south into Baja California. It has apparently been extirpated from much of the central portion of its range. The only confirmed records are for one site in San Luis Obispo County and one in Santa Barbara County. However, there are several dubious or uncertain records from other areas, and it apparently occurs in Baja. Typical habitats include both brackish and freshwater marshes, streambanks, lake margins, and similar swampy areas. Typical bloom period is from April to September in lowlands from 10 to about 1082 feet elevation.	No potential to occur	No wetlands or swampy areas are present within the study area.
Horn's Milkvetch (*Astragalus hornii* var. *hornii*)	-/-/1B.1/-	Occur within meadows and seeps, margins of lakes, and alkaline playas.	No potential to occur	No meadows, seeps, lakes or alkaline playas are present within the study area.
Little Mousetail (*Myosurus minimus* ssp. *apus*)	-/-/3.1/MSHCP	Occurs in association with vernal pools and within the alkali vernal pools and alkali annual grassland components of alkali vernal plains. Species is found in areas that have semi-regular inundation. Within Riverside County, species is locally common in the alkaline vernal pools near Hemet; otherwise scarce and local in Perris Basin and Santa Rosa Plateau (Roberts et al., 2004).	No potential to occur	No vernal pools or alkaline conditions are present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
Long-spined Spineflower (*Chorizanthe polygonoides* var. *longispina*)	-/-/1B.2/MSHCP	Associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland, and openings in coastal sage scrub and chaparral. This species has also been described as occurring on sandy and gravelly soil but this appears to be infrequently the case.	Low potential to occur	Study area lacks common suitable soils for this species. The annual grassland and ruderal communities have a low potential to support this species. LRDP EIR biological technical report states this species has a low potential to occur on campus in coastal sage scrub community located north of the Botanic Garden.
Los Angeles Sunflower (*Helianthus nuttallii* ssp. *parishii*)	-/-/1A/-	Found in coastal salt and freshwater marshes and typically blooms during the period from August through October. It was found at elevations ranging from 33 to 5494 feet. Historically this species occurred in Los Angeles, Orange and San Bernardino counties but is believed to be extinct.	No potential to occur	No suitable marsh habitat within the study area. In addition, this species is not historically known in Riverside County and is considered extirpated from the region.
Many-stemmed Dudleya (*Dudleya multicaulis*)	-/-/1B.2/MSHCP	Found on the coastal slopes of southern California from Los Angeles and San Bernardino Counties south, at elevations between 50 ft and 2600 ft. It usually grows on poor soils, often on clay or at the margins of gabbroic rock outcrops in coastal sage scrub and grassland communities.	No potential to occur	Study area lacks clay or rocky soils. LRDP EIR Figure 4.4-1 shows potential habitat on the campus for this species; the project footprint is well outside the identified area of potential habitat. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Marsh Sandwort (*Arenaria paludicola*)	E/E/1B.1/-	Occurs in wetland and freshwater marshes and grows up through dense mats of *Typha* sp., *Juncus* sp. and *Scirpus* sp. Elevation ranges from sea level to 558 feet. Has been documented within the Santa Ana River (CNDDB 2009), however, the species is now believed to be extirpated from southern California.	No potential to occur	No marsh or wetlands are present within the study area. Although one area on the project site supports hydrophytic vegetation, it is created by irrigation runoff and is not a freshwater marsh.
Mesa Horkelia (*Horkelia cuneata* ssp. *puberula*)	-/-/1B.1/-	This perennial herb grows in sandy and gravelly soils in chaparral, cismontane woodland, or coastal scrub at elevations between 230 ft and 2657 ft.	No potential to occur	Suitable vegetation communities are not present within the study area.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
Munz's Onion (*Allium munzii*)	E/T/1B.1/MSHCP	Found on mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, valley and foothill grasslands in clay soils. Associated with a special "clay soil flora" found in southwestern Riverside County. At least one population (Bachelor Mountain) is reported to be associated with pyroxenite outcrops instead of clay.	No potential to occur	No clay soils or suitable vegetation communities are present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Nevin's Barberry (*Berberis nevinii*)	E/E/1B.1/MSHCP	This rare evergreen shrub is found on steep north facing slopes or in low-grade sandy washes in chaparral, coastal sage scrub, riparian scrub, and cismontane woodland from 968 ft to 2700 ft. In western Riverside County, known only in the vicinity of Vail Lake (Roberts et al., 2004).	Very low potential to occur	Species is an evergreen shrub and was not observed during the field survey. Although riparian scrub occurs on site, it is not associated with a broad wash. The north facing slopes do not support chaparral/coastal sage scrub habitat. Neither the wash nor the slopes within the site provide habitat within which this species is typically found. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Palmer's Grapplinghook (*Harpagonella palmeri*)	-/-/4.2/MSHCP	Range extends from Los Angeles County, including Santa Catalina Island, to Arizona, and Sonora, Mexico. Typically blooms during the period from March to April, and grows on dry slopes and clay soils in valley grasslands, coastal sage scrub and chaparral habitats from about 66 to 3132 feet elevation.	No potential to occur	Study area lacks clay soils and dry slopes within valley grassland, coastal sage scrub and chaparral. The annual grassland on site does not provide suitable habitat as it has a high percent cover of non-native species. Additionally, the regular disturbance regimen in the annual grassland further reduces the likelihood for occurrence.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
Parish's Gooseberry (*Ribes divaricatum* var. *parishii*)	-/-/1A/	A deciduous shrub that typically blooms from February through April, and has been positively identified only in Los Angeles and San Bernardino counties. Known at elevations ranging from 213 to 328 feet. It is possibly extinct and has not been seen since 1980 (near Whittier Narrows). Grows in riparian woodland.	No potential to occur	No *Ribes spp.* were observed within the riparian habitat during the field survey. Species has not been documented in the Riverside area.
Parish's Brittlescale (*Atriplex parishii*)	-/-/1B.1/MSHCP	Found in alkaline meadows, vernal pools, chenopod scrub, and playas with fine soils from 13 ft to 460 ft. Within Riverside county known to occur in alkaline flats along San Jacinto River, west of Hemet, and near Winchester (Roberts et al., 2004).	No potential to occur	There are no vernal pools or alkaline soils within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Parish's Bush-mallow (*Malacothamnus parishii*)	-/-/1A/-	This deciduous shrub can be found in sandy soils both on slopes and in washes at elevations from 600 to 2800 feet. Typical habitats include chaparral, coastal sage scrub, cismontane woodland, and riparian woodland communities. It is known from San Mateo County to eastern Los Angeles County. The typical blooming period extends from June through January. The only record in Riverside County from 1895 is believed to be a misidentified *Sphaeralcea* sp. (CNPS 2010).	No potential to occur	No chaparral or coastal scrub habitat is present within the study area. Species is believed to be extirpated from the region.
Parish's Desert-thorn (*Lycium parishii*)	-/-/2.3/-	This shrub species flowers in March and April and occurs on arid slopes and sand flats from about 1000 to 3280 feet elevation. In California, its distribution is restricted to desert portions of Riverside and San Diego counties.	No potential to occur	Study area does not support desert conditions within which this species typically occurs. Additionally, this species is a perennial shrub and would have been identified during the field survey, if present.
Parry's Spineflower (*Chorizanthe parryi* var. *parryi*)	-/-/1B.1/MSHCP	Found on dry sandy soils on slopes and flats, within coastal sage scrub and chaparral.	Low potential to occur	Coastal sage scrub and chaparral habitats are not present within the study area. The sandy soils within the drainage and the ruderal community have a low potential to support this species.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
Payson's Jewel-flower (*Caulanthus simulans*)	-/-/4.2/MSHCP	Blooms from March to June in foothill and mountain areas, especially on desert-facing slopes ranging from about 295 to 7216 feet elevation. Habitats include open, dry chaparral, coastal scrub, and pinyon woodland. Found in sandy, granitic soils of Riverside and San Diego counties.	No potential to occur	Suitable vegetation communities are not present within the study area. LRDP EIR Figure 4.4-1 shows potential habitat on the campus for this species; the project footprint is well outside the identified area of potential habitat.
Plummer's Mariposa Lily (*Calochortus plummerae*)	-/-/1B.2/MSHCP	Found on rocky and sandy areas with granitic or alluvial material in coastal sage scrub, chaparral, and valley and foothill grasslands from 295 ft to 5280 ft. This species flowers from May through July.	Low potential to occur.	The biological survey was conducted in June, the peak of this species blooming period. The species is highly visible when in bloom and it was not observed during the survey. It cannot be confirmed absent as a focused plant survey was not conducted.
Pringle's Monardella (*Monardella pringlei*)	-/-/1A/-	Occurs in sandy hills within coastal scrub habitat. Species was last seen in 1921. It was known only from the vicinity of Colton, with habitat lost to urbanization. However, a recheck of the area suspected to be the only known location within the area of the Fontana quadrangle map in 1979 revealed apparently suitable habitat. This site is "DeClez Pass, Jurupa Mountains," with no further information. It can be found at elevations from 984 to 1312 feet.	No potential to occur	This species is believed to be extirpated from the region. No suitable habitat for this species occurs within the vicinity of the study area.
Robinson's Pepper-Grass (*Lepidium virginicum* var. *robinsonii*)	-/-/1B.2/-	This native variety of wild peppergrass occurs from Los Angeles County to Baja California and is also found on the Channel Islands. Typical blooming period extends from January to July. Typical habitats of this small, annual peppergrass are dry openings within chaparral, coastal sage scrub, and alluvial fan sage scrub below about 2903 feet elevation. It is often locally in close association with boulders. Development appears to be the primary threat to this variety.	No potential to occur	No suitable habitat is present within the study area.

COMMON/ SCIENTIFIC NAME	**STATUS[a] FED/STATE/ CNPS/ MSHCP**	**SPECIES REQUIREMENTS**	**POTENTIAL FOR OCCURRENCE**	**RATIONALE**
Round-leaved Filaree (*California macrophylla*)	-/-/1B.1/MSHCP	Restricted to open cismontane woodland and valley and foothill grassland habitats on very friable deep clay soils at elevations between 50 ft and 6560 ft. Within western Riverside County, two of the mapped localities occur on Bosanko clay soils.	No potential to occur	Study area lacks clay soils thus the site is not suitable for the species.
Salt Marsh Bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*)	E/E/1B.2/-	Occurs within coastal dunes, salt marshes and coastal swamps, but has been documented inland in San Bernardino Valley within alkaline meadows (CNDDB 2009). Elevations range from sea level to 99 feet.	No potential to occur	No coastal or alkaline habitats are present within the study area.
Salt Spring Checkerbloom (*Sidalcea neomexicana*)	-/-/2.2/-	This species is associated with alkaline meadows at elevations between 49 ft and 5018 ft and is typically found with Salt Grass (*Distichlis spicata*). Within Riverside County, species is considered scarce and tied to alkaline seeps and springs, however is now thought to be extirpated.	No potential to occur	Study area lacks alkaline meadows or conditions suitable for species.
San Bernardino Aster (*Symphyotrichum defoliatum*)	-/-/1B.2/-	Found in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland at elevations between 6 ft and 6700 feet elevation. Also occurs near ditches and stream springs.	Low potential to occur	The drainage within the study area has the potential to support this species.
San Diego Ambrosia (*Ambrosia pumila)*	E/-/1B.1/MSHCP	Occurs in open floodplain terraces or in the watershed margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse nonnative grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas. This species generally occurs at low elevations generally less than 1600 ft in the Riverside County and less than 600 ft in San Diego County.	No potential to occur	No open floodplain terraces or vernal pools are found within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
San Jacinto Valley Crownscale (*Atriplex coronata* var. *notatior*)	E/-/1B.1/MSHCP	Occurs primarily in floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and to a lesser extent, alkali grasslands. Restricted to highly alkaline, silty-clay soils in association with the Traver-Domino-Willows soil association; the majority (approximately 80 %) of the populations are associated with the Willows soil series.	No potential to occur	There are no vernal pools, seasonal wetlands, or alkaline soils within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*)	E/E/1B.1/MSHCP	Known from a single extended but heavily fragmented population in Riverside and San Bernardino counties. Formerly extended into Orange County. It is an inhabitant of alluvial fan sage scrub in sandy to gravelly soils and typically blooms during the period of June through August and can be found at the elevations from 492 to 2001 feet.	No potential to occur	Site lacks alluvial fan sage scrub habitat, thus no suitable habitat is present.
Slender-horned Spineflower (*Dodecahema leptoceras*)	E/E/1B.1/ MSHCP	Found on flood deposited fine sand terraces and washes in Riversidian alluvial fan sage scrub at elevations between 656 ft and 2,493 ft. Also associated with cismontane woodland and chaparral having suitable hydrology and fine sands.	No potential to occur	No Riversidian alluvial fan sage scrub habitat is present within the study area. Although the project site has a drainage on site with sandy soils, it does not contain the flood plain terraces required for this species. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Smooth Tarplant (*Centromadia pungens* ssp. *laevis*)	-/-/1B.1/MSHCP	Found in fine or alkaline soils of seasonally wet chenopod scrub, meadows and seeps, playas, riparian woodland, fallow fields, drainage ditches, and moist situations within valley and foothill grasslands below 1575 ft in elevation. Tolerant of rural and agricultural land use. Found primarily in southwestern Riverside County, but also a few sites in the interior valleys of San Bernardino, Los Angeles, and San Diego Counties.	No potential to occur	No alkaline soils within the study area. Although tolerant of disturbances on the project site, species was not observed during biological survey and would have been identifiable during the survey if present. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

COMMON/ SCIENTIFIC NAME	STATUS[a] FED/STATE/ CNPS/ MSHCP	SPECIES REQUIREMENTS	POTENTIAL FOR OCCURRENCE	RATIONALE
South Coast saltscale (*Atriplex pacifica*)	-/-/1B.2/-	Occurs within coastal bluff scrub, coastal dunes, coastal scrub, saltbush scrub, alkali grasslands, and alkali playas from sea level to 459 feet in elevation. Associated species include Desert Seepweed (*Suaeda torreyana*), Parish's Pickleweed (*Salicornia subterminalis*), Royal Goldfields (*Lasthenia coronaria*), and Alkali Pepperweed (*Lepidium dictyotum*).	No potential to occur	No coastal habitat or alkaline soils are present within the study area. Additionally, the site is above the elevation in which this species occurs.
Spreading Navarretia (*Navarretia fossalis*)	T/-/1B.1/MSHCP	Associated with vernal pools and depressions and ditches in areas that once supported vernal pools. In western Riverside County, spreading navarretia has been found in relatively undisturbed and moderately disturbed vernal pools, within larger vernal floodplains dominated by annual alkali grassland or alkali playa. The alkali vernal playa/pool habitat found in the Hemet area is based primarily on silty clay soils in the Willows and Travers series. These soils are usually saline-alkaline in nature and reliably pond water for long durations.	No potential to occur	No vernal pools or alkaline soils are present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Thread-leaved Brodiaea (*Brodiaea filifolia*)	T/E/1B.1/MSHCP	Found in heavy soils (e.g., clay) in coastal sage scrub, chaparral, cismontane woodland, and vernal pools from 1575 ft – 4000 ft. Within western Riverside county found in southern Santa Ana Mtns., Santa Rosa Plateau, and alkali flats of the San Jacinto River flood plain and west of Hemet (Roberts et al., 2004).	No potential to occur	There are no clay soils or suitable vegetation communities within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)	-/-/2.1/MSHCP	In western Riverside County, found in the alkali vernal plains and associated with alkali playa, alkali annual grassland, and alkali vernal pool habitats. This species occupies the more mesic portions of these habitats.	No potential to occur	No vernal pools or alkaline soils are present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

INVERTEBRATES				
Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*)	E/-/-/MSHCP(c)	Known primarily from 12 disjunct locations within the Cities of Colton, Rialto, and Fontana. Found only in areas of Delhi sands soils within the area formerly known as the Colton Dunes. Plants especially associated with species habitat include California buckwheat (*Eriogonum fasciculatum*), telegraph plant (*Heterotheca grandiflora*), and California croton (*Croton californica*).	No potential to occur	No Delhi sands soils are present within the study area. In addition, the host plants associated with the species are not present within the study area.
Quino Checkerspot Butterfly (*Euphydryas editha quino*)	E/-/-/MSHCP	Habitat associations seem to be tied to both host plant species and topography. Larvae feed on *Plantago erecta*, *P. patagonia* (and possibly other *Plantago* species), *Antirrhinum coulterianum*, *Cordylanthus rigidus*, *Collinsia concolor*, and *Castilleja exserta*. Populations appear to be associated with loamy soils with moderate to high amounts of clay, located within sparsely vegetated areas that contain potential host plants and nectar sources, and generally a moderate to high percentage of native plants. Adults nectar mostly on small annuals; often occur on open or sparsely vegetated rounded hilltops, ridgelines, and occasionally rocky outcrops. Suitable plant species have been found in association with, but not restricted to vernal pools, sage scrub, chaparral, native and nonnative grassland, and open oak and juniper woodland communities. The key component seems to be open-canopied habitats. Known populations of this species have been well-documented. The populations nearest to the project site are located in southwestern Riverside and San Bernardino Counties (Mattoni et al. 1997[a]).	No potential to occur	No suitable sage scrub habitat occurs within the study area. Additionally, conditions associated with this species do not occur on site (the site has a dense vegetative cover with a high percentage of non native species and is not located on a hilltop or ridgeline (as defined with respect to this habitat type).

FISH				
Arroyo Chub (*Gila orcuttii*)	-/CSC/-/MSHCP	Occur within warm, fluctuating streams and found within slow moving sections of stream containing sandy or muddy bottoms. In Riverside County, occurs within the Santa Ana and Santa Margarita River tributaries. The arroyo chub has been documented in the past in lower Temescal Creek and may still occur in San Jacinto River (Fisher and Swift 1998); however, it has not been documented in either drainage recently.	No potential to occur	No streams or watercourses suitable for fish are present within the study area.
Santa Ana Specked Dace (*Rhinichythys osculus* ssp. *3*)	-/CSC/-/-	Formerly widespread in mountain portions of the Santa Ana, San Gabriel, and Los Angeles watersheds. Populations were scattered in foothill areas, and rare in lowlands. Currently, has a very restricted native distribution in headwaters of the Santa Ana and San Gabriel rivers, and possibly in the south fork of the San Jacinto River. It has been introduced elsewhere, but none of those populations are known to be well-established. Habitat requirements are perennial streams with summer waters of 63-68°F. They are primarily within runs and riffles with gravel and cobble substrates, often in steep, rocky canyons with chaparral-covered walls.	No potential to occur	No streams or watercourses suitable for fish are present within the study area.
Santa Ana Sucker (*Catostomus santaanae*)	T/CSC/-/MSHCP	Native populations of this fish are found only in the Los Angeles (potentially extirpated), San Gabriel, and Santa Ana river systems of southern California, with a large population in the Santa Clara River population probably derived from an early introduction (Moyle 1976). Most streams in which Santa Ana Suckers live are fairly small and shallow, with currents ranging from swift to sluggish. All are subject to periodic severe flooding.	No potential to occur	No streams or watercourses suitable for fish are present within the study area.

AMPHIBIANS				
Sierra Madre Yellow-legged Frog (*Rana muscosa*)	E/CSC/-/MSHCP(c)	Inhabits lakes, ponds, meadow streams, isolated pools, sunny riverbanks in the southern Sierra Nevada Mountains. In the mountains of southern California, inhabits rocky streams in narrow canyons and in the chaparral belt. Occurs from 984 ft. to over 12,000 ft. elevation.	No potential to occur	No suitable habitat is present within the study area. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.
Western Spadefoot (*Scaphiopus hammondii*)	-/CSC/-/MSHCP	Found primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools and seasonal ponds are essential for breeding and egg laying. It is found at sea level to 4,500 ft in elevation.	No potential to occur	No vernal pools or seasonal ponds are present within the study area. Due to the developed nature of surrounding area, non-breeding western spadefoot are also not expected to occur
REPTILES				
Belding's Orange-throated Whiptail (*Cnedimophorus hyperythrus beldingi*)	-/CSC-/-/MSHCP	Most California populations occur on or adjacent to floodplains or the terraces of streams, in or by open sage scrub and chaparral communities. The presence of perennial shrubs appears to be important, with the most strongly associated species being California buckwheat, chamise (*Adenostoma fasciculatum*), white sage (*Salvia apiana*), and black sage (*S. mellifera*).	No potential to occur	No suitable habitat is present within the study area. LRDP EIR Figure 4.4-1 shows potential habitat on the campus for this species; the project footprint is well outside the identified area of potential habitat.
California (Coastal) Legless Lizard (*Anniella pulchra pulchra*)	-/CSC/-/-	Habitat is primarily areas with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, or pine-oak woodland, and open, well-shaded terraces in mature riparian natural communities. Leaf litter is commonly present.	No potential to occur	No suitable soil conditions or habitat are present within study area.
Coastal Western Whiptail (*Aspidoscelis tigris munda*)	-/-/-	This subspecies is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California. Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas[b].	Low potential to occur	This species has a low potential to occur within the riparian habitat.

Northern Red Diamond Rattlesnake (*Crotalus ruber ruber*)	-/CSC/-/MSHCP	Occurs as far north as Puente Hills in Yorba Linda and as far south as Loreto, Baja California, Mexico at elevations below 15,000 ft, but apparently rare above about 3940 ft. Prefers areas with boulders and rocky outcrops in heavy brush, such as chaparral, but also in open areas.	No potential to occur	Study area does not provide suitable shelter for species. Species is not expected to occur.
Rosy boa (*Lichanura trivirgata)*	-/CSC/-	Habitat consists of mixed brushy cover and rocky soils.	Low potential to occur	LRDP EIR states that this species has been historically observed on campus. Due to the lack of rocky soils, it is unlikely to occur within the study area. However, the riparian and annual grassland communities provide marginal habitat for the species.
San Diego Coast Horned Lizard (*Phrynosoma coronatum blainvillei*)	-/CSC/-/MSHCP	Found in arid and semi-arid climate conditions in chaparral, coastal sage scrub, primarily at elevations below 2000 ft. Critical factors are the presence of loose soils with a high sand fraction; an abundance of native ants or other insects, especially harvester ants (*Pogonomyrmex* spp.); and the availability of both sunny basking spots and dense cover for refuge.	No potential to occur	No suitable habitat is present within the study area. LRDP EIR Figure 4.4-1 shows potential habitat on the campus for this species; the project footprint is well outside the identified area of potential habitat.
Western Pond Turtle (*Actinemys marmorata*)	-/CSC/-/-	Found in association with permanent or nearly permanent water in a fairly wide variety of habitat types. It is omnivorous, taking a wide variety of plant and animal food. The pond turtle requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks.	No potential to occur	No permanent or nearly permanent water is present within the study area. No potential for occurrence.
BIRDS				
American Peregrine Falcon (*Falco peregrinus anatum*)	D/SCD,CFP/-/MSHCP	Foraging habitat in all seasons is primarily areas with low human disturbance and accessible open water with high densities of prey species such as ducks and shorebirds. Nest sites are cliffs and structures with very low levels of presence at the nest site.	No potential to occur	No suitable nesting habitat or foraging habitat occurs within the study area.

Bald Eagle (*Haliaeetus leucocephalus*)	D/E,CFP/-/MSHCP	Primarily in or near seacoasts, rivers, swamps, and large lakes. Eats mainly fish and carrion, and formerly nested locally along the coast of southern California. This species is a localized winter resident and rare migrant, with only very rare breeding efforts in coastal southern California (e.g., Lake Skinner, Riverside County).	Breeding: No potential Foraging: No potential	No suitable nesting habitat or foraging habitat occur within the study area.
Bell's sage sparrow (*Amphispiza belli belli*)	-/-/-/MSHCP	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Breeding: No potential Foraging: low potential	LRDP EIR states that this species has been historically observed on campus. However, no suitable habitat is present in the study area.
Burrowing Owl (*Athene cunicularia*)	-/CSC/-/MSHCP	Inhabits open, dry, nearly or quite level, grassland; prairie; desert floor; shrubland should be considered potential habitat if shrub cover is below 30% (CBOC 1997[c]). In coastal So. Ca., a substantial fraction of birds are found in microhabitats highly altered by man, including flood control and irrigation basins, dikes, and banks, abandoned fields surrounded by agriculture, and road cuts and margins. Strong association between Burrowing Owls and burrowing mammals, especially ground squirrels (*Spermophilus* spp.); however will also occupy man-made niches such as banks and ditches, piles of broken concrete, and even abandoned structures (Haug et al. 1993).	Breeding: Confirmed Absent; low to moderate potential to establish within the site Foraging: moderate potential to occur.	Study area contains suitable habitat, thus a focused survey was performed. Grasslands within the study area are suitable for species. No burrowing owls or their sign (i.e. scat, feathers, whitewash) were found during the focused survey effort.
Coastal California Gnatcatcher (*Polioptila californica californica*)	T/CSC/-/MSHCP	Obligate, permanent resident of sage scrub habitat. Within California it is found from the Mexican border north to extreme eastern and southern Los Angeles County with several small, disjunct populations known north to the Moorpark area of Ventura County. It extends east into western San Bernardino County and well across cismontane Riverside County.	No potential to breed within the study area. Low potential to migrate or forage (dispersing juveniles) within study area.	No sage scrub habitat is present within the study area. LRDP EIR Figure 4.4-1 shows potential habitat on the campus for this species; the project footprint is well outside the identified area of potential habitat.

Cooper's Hawk (*Accipiter cooperii*)	-/-/-/MSHCP	Small raptor that specializes in hunting small birds, primarily in thickets, woodlands and forests. It winters widely and fairly commonly in California. South of northern San Luis Obispo County it is a very rare breeding species, and then only in high elevation forest and riparian habitats.	Breeding: No potential Foraging: Moderate potential	The LRDP EIR cites this species as known to occur on campus. The riparian vegetation within the study area is small in extent, immature, and has human disturbance. This species would not breed within the study area. There is a moderate potential for foraging in the riparian habitat and annual grassland.
Golden Eagle (*Aquila chrysaetos*)	-/CFP/-/MSHCP	Forages in grassland and open savannah of many types. It tolerates considerable variation in topography and elevation. It prefers to hunt moderate-sized prey, especially California ground squirrels (*Spermophilus beecheyi*) and rabbits, but will occasionally take larger prey, such as mule deer (*Odocoileus hemionus*) fawns. It is very sensitive to human disturbance, especially near nest sites.	Breeding: No potential Foraging: Low potential	No suitable nesting habitat occurs within the study area. There is a low potential for species to forage on the project site; however' disturbances within study area are high.
Least Bell's Vireo (V*ireo bellii pusillus*)	E/E/-/MSHCP	Found as a summer resident of southern California where it inhabits low riparian growth in the vicinity of water or in dry river bottoms below 2,000 ft. Species selects dense vegetation low in riparian zones for nesting; most frequently located in riparian stands between 5 and 10 years old; when mature riparian woodland is selected, vireos nest in areas with a substantial robust understory of willows as well as other plant species.	No potential to occur	The riparian habitat within the study does not provide dense understory or stratification required by this species.
Loggerhead Shrike (*Lanius ludovicianus*)	-/CSC /-/MSHCP	This is a songbird evolved to the role of a bird of prey, capturing large insects as well as small vertebrates such as lizards, mice, and occasional small songbirds. It forages in open country of many types (including non-intensive agricultural areas) and nests in small trees and large shrubs, often at the edges of such open areas. Like most birds of prey, Loggerhead Shrikes generally occur at low densities. The species is widely distributed in southern California, with some seasonal movements evident.	Breeding: Low potential Foraging: Low potential	Species has a potential to occur in grassland community and adjacent scattered trees. The LRDP EIR determined that this species has a low potential to occur.

Long-eared Owl (*Asio otus*)	-/CSC /-/-	In southern California species breeds and roosts in riparian and oak forests, and hunts small mammals at night in adjacent open habitats; known to breed at several dozen locales in San Diego and Orange counties, and probably does in smaller numbers in other coastal southern California counties as well.	No potential to occur	Riparian habitat on-site is not suitable for the species as it is immature and very limited in extent.
Northern Harrier (*Circus cyaneus*)	-/CSC/-/MSHCP	Species hunts low to the ground mostly in open country, nesting on the ground. Prey diversity is high, though small mammals are most commonly taken. It was formerly a fairly common breeder in much of coastal southern California, but now is nearly extirpated in this role due to loss of native open habitats, especially marshes. It remains fairly common in open country with low human disturbance during migration and in winter.	Breeding: No potential Foraging/Migrant: Low potential	No suitable breeding habitat within the study area. Species has a low potential to migrate through the study area.
Rufous-crowned sparrow (*Aimpophila* ruficeps)	-/-/-/MSHCP	Optimal Habitat consists of sparse, low brush or grass, hilly slopes preferably interspersed with boulders and outcrops. Occur on moderate to steep, dry, grass-covered hillsides, coastal sage scrub, and chaparral and often occur near the edges of the denser scrub and chaparral associations. Preference is shown for tracts of California sagebrush. It also colonizes grass that grows as a successional stage following brush fires and sparse chaparral recovering from a burn as well as the edges of tall chaparral. (The species may occur on steep grassy slopes without shrubs if rock outcrops are present)	Breeding: No potential Foraging: Low potential to occur	LRDP EIR states that this species has been historically observed on campus. Project site does not contain habitat or conditions associated with this species.
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	E/E/-/MSHCP	Highly restricted distribution in southern California as a breeder. It occupies extensive riparian forests, wet meadows, and lower montane riparian habitats primarily below 4,000 ft. Occurs in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows (*Salix* spp.), *Baccharis* spp., Arrowweed (*Pluchea* spp.), buttonbush (*Cephalanthus* spp.), tamarisk (*Tamarix* spp.) Russian olive (*Eleagnus* spp.) or other plants are present, often with a scattered overstory of cottonwood (*Populus* spp.).	No potential to occur	Immature riparian forest is not suitable for the species due to small acreage on the site and inappropriate structure.

Swainson's Hawk (*Buteo swainsoni*)	-/T/-/MSHCP	Only occurs as a migrant in southern California and can occur in a group, foraging over recently disced agricultural fields.	Breeding: No potential Foraging: No potential	This species would only migrate over the study area.
Tricolored Blackbird (*Agelaius tricolor*)	-/CSC/-/MSHCP	Nests in dense colonies in marshes and occasionally in moist thickets, agricultural fields, or sewage treatment plants. They will readily use restored or created wetlands.	No potential to occur	No marsh or other suitable habitat is present within the study area.
Western Yellow Warbler (*Dendroica petechia brewsteri*)	-/CSC/-/MSHCP	A songbird that nests in the canopy of riparian habitats in southern California, especially alder woodland and forest. It is a common, widespread migrant in spring and fall, occupying a wide variety of habitats at that time. It is uncommon as a breeder in southern California, typically returning to the same areas each year, and extremely rare in winter.	Breeding: Low potential Foraging: Low potential	Due to the small, immature riparian habitat devoid of alders within the study area, the species is not expected to nest within the study area. There is also a limited extent of suitable habitat for foraging.
Western Yellow-billed Cuckoo (*Coccyzus americanas occidentalis*)	FC/E/-/MSHCP(a)	Only a handful of small populations remaining in all of California today. Losses are tied to obvious loss of nearly all suitable habitat, but other factors may also be involved. Relatively broad, well-shaded riparian forests are utilized, although it tolerates some disturbance. A specialist to some degree on tent caterpillars, with a remarkably fast development of young, only 18 - 21 days from incubation to fledging.	No potential to occur	Species requires large riparian forest areas and disturbances within study area are too high
White-tailed Kite (*Elanus leucurus*)	-/CFP/-/MSHCP	Species found across most of California west of the Sierra Nevada and deserts, from north of the San Francisco Bay south into northern Baja California, Mexico. This is a strongly lowland species, apparently rare anywhere in California above 2000 ft. Nests are flimsy and are located low in trees and large shrubs near foraging areas in savannah grassland and at edges between open habitat and woodland or forest areas. Its diet is largely restricted to small mammals such as voles and mice.	Breeding: No potential Foraging: Low potential	Species has a low potential to occur within the study area. Foraging habitat is very minimal and species typically forages in more open areas not surrounded by development.

Yellow-breasted Chat (*Icteria virens*)	-/CSC /-/MSHCP	Large, uncommon warbler that, in California, typically require dense riparian thickets of willows, vine tangles, and dense brush associated with streams, swampy ground and the borders of small ponds. Some taller trees (i.e., cottonwoods and alders) are required for song perches. It eats a variety of insects, and has the unusual habit of singing both day and night. This uncommon breeder typically returns to the same areas each breeding season. They are rare migrants across southern California. Known elevation range extends from near sea level to at least 4700 feet.	Breeding: No potential Foraging: Low potential (would occur only as a migrant).	The riparian habitat within the project site does not represent typical breeding or foraging habitat. The species would not nest within the study area and would occur only as a migrant.
MAMMALS				
American Badger (*Taxidea taxus*)	-/CSC/-/-	Occur primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. Also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. Sometimes found at elevations up to 12,000 feet but are usually found at elevations lower and warmer than those characterized by coniferous forests. In California, occasionally found in open chaparral (with less than 50% plant cover) and riparian zones. Burrows are typically up to 30 feet long and 10 feet deep. Large mounds of soil are built up at burrow entrances.[d]	No potential to occur	Study area does not contain typical habitat types. No burrows /dens suitable for this species are present within the study area.

California Western Mastiff Bat (*Eumops perotis californicus*)	-/CSC/-/-	Found throughout the coastal lowlands up to drier mid-elevation mountains, but avoids the Mohave and Colorado deserts. Habitats include dry woodlands, shrublands, grasslands, and occasionally developed areas. This big bat forages in flight, primarily taking insects in the order Hymenoptera (bees, wasps, and ants). Most prey species are relatively small, low to the ground, and weak-flying. For roosting, appears to favor rocky, rugged areas in lowlands where abundant suitable crevices are available for day roosts. There appears to be little use of night roosts. Roost sites may be in natural rock or in tall buildings, large trees or elsewhere, but must be at least 2 inches wide and 12 inches deep, and narrow to at most 1 inch at the upper end. Nursery roosts must be deeper yet. All roosts open well up on a cliff or other steep face, at least 6.5 ft vertically above the substrate, to allow flight from the roost. Roosts may be communal (up to 100 individuals) or solitary, and commonly include other species of bats.	Roosting: No potential Foraging: Low potential	Large trees within the study area are primarily ornamental (pine and eucalyptus trees) and the study area is highly disturbed by humans. No bat sign was noted at the base of trees during the field survey; this species is not expected to roost within the study area. However, suitable foraging habitat occurs over the grasslands, thus there is a low potential for foraging bats to occur.
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	-/SSC/-	Habitats include montane hardwood, valley foothill, hardwood-conifer, annual grassland, sagebrush, chamise-redshank, and montane chaparral and scrub.	Low potential to occur	LRDP EIR determined a low potential to occur on campus. Grassland habitat within the project footprint provides suitable habitat
Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*)	-/CSC/-/MSHCP	Habitat includes lower elevation grassland, alluvial sage scrub, and coastal sage scrub. Elevation range for the species as a whole extends from 540 to 2650 feet elevation. Many of the remaining habitats in Riverside County are in private ownership[e]. It inhabits areas of open ground, prefers fine sandy soils (for burrowing), but is also found commonly on gravel washes and on stony soils, within brush and woodland habitats. It is rarely found on sites with a high cover of rocks.	Low potential to occur	Drainage on site has a low potential to support the species. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)	-/CSC/-/MSHCP	Sandy herbaceous areas usually associated with rocks and coarse gravel in southwestern California including coastal and desert border areas in San Bernardino, Riverside, and San Diego Counties. Elevation ranges from sea level to 6000 feet. Vegetation community preferences include sage scrub, chamise-redshank chaparral, mixed chaparral, sage brush, desert wash, desert scrub, desert succulent scrub, pinyon-juniper, annual grassland.	Low potential to occur	The study area lacks typical habitat types for this species. Although grassland is present within the study area, it is disturbed often by mowing. The drainage may provide suitable habitat for the species.
Pallid Bat (*Antrozous pallidus*)	-/CSC/-/-	Widely distributed in the southwestern United States and northern Mexico. Locally common across most of California except in the far northwest and in higher portions of the Sierra Nevada. Habitats include a wide variety of grasslands, shrublands, woodlands, and forests, including mixed conifer forest, however they appear to be most common in open, dry, rocky lowlands. Roosts are in caves, mines, as well as crevices in rocks, buildings and trees. This is a colonial species that forages low over open ground, often picking up beetles and other species of prey off the ground. Known to forage up to about 1.5 miles from day roosts, but detailed home range data is apparently lacking. Require small amounts of water for drinking. Intolerant of urban disturbances.	Roosting: Very low potential. Foraging: Low	Species is not expected to roost within the study area due to high human disturbance within the vicinity. The grassland within the study area may provide a small amount of potential foraging habitat.
Pocketed Free-tailed Bat [*Nyctinomops (=Tadarida) femorosaccus*]	-/CSC/-/-	In California, occurs mostly in arid southeastern deserts, and portions of western Riverside County are on the periphery of their range. Species roost in high rock crevices and cliffs, and forage primarily on large moths, especially over water.	No potential to occur	No suitable foraging or roosting habitat is present within study area.
San Bernardino Merriam's Kangaroo Rat (*Dipodomys merriami parvus*)	E/CSC/-/MSHCP	Prefers soils of sandy loam, occasionally to sandy gravel, in open to moderately shrubby habitats, especially intermediate seral stages of alluvial fan sage scrub up to 1970 feet from active channels.	No potential to occur	Study area does not occur within an alluvial fan. Focused survey limits are defined for this species under the WRC MSHCP. The study area is outside the defined survey limits.

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)	-/CSC/-/MSHCP	Common throughout state except at high elevations in herbaceous and desert shrub areas, sage scrub, grasslands, open chaparral and woodland/forest areas; relatively disturbance tolerant. Requires extensive open spaces, such as grasslands or open sage scrub, usually in fairly level situations. The presence of substantial available cover, either dense grasses or shrubs, appears to be important for day roosts and is often adjacent to more open foraging areas. Declines are due to extensive development of available habitats, though this large rabbit is still locally common.	Low potential to occur	The study area does provide some suitable habitat; however, there is a lack of extensive open space and minimal suitable cover within the study area.
San Diego Desert Woodrat (*Neotoma lepida intermedia*)	-/CSC/-/MSHCP	A medium-sized native rat locally common in a variety of sunny shrub habitats, frequently in rocky and/or steep terrain and upper drainages. This mainly nocturnal vegetarian often builds its dens low in cactus or rock crevices, but will use other sites as needed. This subspecies is found along the coast of California from San Luis Obispo (San Luis Obispo County) southward and inland to San Fernando (Los Angeles County), the western foothills of the San Bernardino Mountains (San Bernardino County), and Julian (San Diego County). Its distribution continues southward in Baja California, Mexico at least to a point 20 miles east of Ensenada. This subspecies does not require a source of drinking water. Sage scrub communities are frequently occupied, but with other communities also used as suitable microhabitats are available.	No potential to occur.	No woodrat nests were noted on the project site during the general biological survey. Study area lacks shrublands, cactus, and rock crevices.
Southern Grasshopper Mouse (*Onychomys torridus ramona*)	-/CSC/-/-	This subspecies occurs in a wide variety of dry to moderately dry scrub, grassland and woodland habitats across southern California, exclusive of the more mesic coastal areas from Ventura County north. It is common in arid desert habitats of the Mojave and southern Central Valley of California. Prefers alkali desert scrub, with somewhat lower densities expected in other desert habitats including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Uncommon in valley foothill and montane riparian habitats[f]. Soils are nearly always sandy or gravelly.	No potential to occur.	Typical desert and alkali shrub habitats are not present within the study area.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)	E/T/-/MSHCP	The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrublands during the summer. Species avoids dense grasses (for example, nonnative bromes [*Bromus* spp.]) and are more likely to inhabit areas with less than 50% perennial cover. Vegetation most often associated with this species is California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and filaree (*Erodium* spp.). The species typically is found in sandy and sandy loam soils with a low clay to gravel content, although there are exceptions where they can utilize the burrows of Botta's Pocket Gopher (*Thomomys bottae*) and California Ground Squirrel (*Spermophilus beecheyi*). Tends to avoid rocky soils. In general, the highest abundances of species occur on gentle slopes less than 15 percent. Most occur below about 2,000 feet elevation, but individuals can occur at least as high as 3,600 feet.	Very low potential	Plant species typically associated with this species are not present in the study area. The annual grassland on the project site is densely vegetated and is not likely to support the species. The LRDP EIR indicates potential for this species only in the hills south of the Botanic garden.
Western Yellow Bat (*Lasiurus xanthinus*)	-/CSC/-/-	Commonly found in the southwestern U.S. roosting in the skirt of dead fronds in both native and non-native palm trees. In California, it is limited by the availability of palm habitat. Forages over water and among trees.	Roosting: Very low potential Foraging: Low potential	There are a few scattered palm trees within the study area however no bat sign was observed at the base of trees. The study area lacks water features for foraging.
HABITATS OF CONCERN (DEPLETED NATURAL COMMUNITIES)				
California Walnut Woodland	CNDDB	Similar to and intergrading with Interior Live Oak Woodland or Coast Live Oak Woodland, but with a more open tree canopy locally dominated by *Juglans californica*. The open tree canopy allows development of a grassy understory. In most sites, this understory is comprised of introduced winter-active annuals that complete most of their growth cycle before the deciduous *Juglans* leafs out in spring. Distribution: South side of San Gabriel Mountains to the Santa Ana Mountains, mostly between 500 ft and 3000 ft elevation[g].	Confirmed Absent	This community has not been documented within the region. Scattered hybridized California walnuts do occur within the study area. These scattered trees do not constitute a sensitive natural community.

Riversidian Alluvial Fan Sage Scrub	CNDDB	An open scrub community within alluvial fans and floodplains, Dominated by drought-deciduous species and evergreen woody shrubs, including *Lepidospartum squamatum* and *Artemisia californica*. Vegetation within the community is adapted for periodic flooding and erosion. Distribution: The southern base of the Transverse and Peninsular ranges of southern California.[h]	Confirmed Absent	This community is not present within the study area.
Southern California Arroyo Chub/Santa Ana Sucker Stream	CNDDB	A permanent stream flowing through steep and rocky canyons. These streams provide suitable habitat for arroyo chub and Santa Ana sucker. Distribution: Includes portions of the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers, and Malibu and San Juan creeks.	Confirmed Absent	This community is not present within the study area.
Southern Coast Live Oak Riparian Forest	CNDDB	An open to dense evergreen sclerophyllous riparian forest. Dominated by *Quercus agrifolia* with a rich herb layer and poor shrub understory compared with other riparian communities. Occurs in bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium. Distribution: Canyons and valleys of coastal southern California, south of Point Conception in Santa Barbara County.[i]	Confirmed Absent	This community is not present within the study area.

Southern Cottonwood Willow Riparian Forest	CNDDB	Tall, open, broadleafed winter-deciduous riparian forests dominated by *Populus fremontii*, *P. trichocarpa*, and several tree willows. Similar to Central Coast Cottonwood-Sycamore Riparian Forest, although apparently with less *Q.agrifolia* or *Alnus rhombifolia* (this merits further study). Understories usually are shrubby willows. Occurs on sub-irrigated and frequently overflowed lands along rivers and streams. The dominant species require moist, bare mineral soil for germination and establishment. This is provided after flood waters recede, leading to uniform-aged stands in this seral type. Distribution: Along perennially wet stream reaches of the Transverse and Peninsular ranges, from Santa Barbara County south to Baja California Norte and east to the edge of the deserts[j].	Confirmed Absent.	There is a small patch of immature cottonwood willow riparian scrub on the project site. The immature riparian scrub occurs in highly disturbed conditions and consists of black willows and a few immature cottonwoods and walnut trees. It does not occur along a perennially wet stream reach and does not support large, mature cottonwoods or willows. This patch is an early successional stage of willow riparian forest; however, along ephemeral washes willow riparian scrub typically does not have the opportunity to succeed to mature forest.
Southern Riparian Forest	CNDDB	Dominated by a combination of scattered *Q. agrifolia*, *Platanus racemosa*, *Juglans californica*, *Salix* species, *Sambucus mexicana*, *Vitis girdiana*, and *Toxicodendron diversilobum*. Found in valley and foothill riparian areas from sea level to the lower margins of the montane coniferous forest of cismontane California. Distribution: In southern California, found from Ventura County south to San Diego County and west to Riverside and San Bernardino counties. [k]	Confirmed Absent	This community is not present within the study area.

Southern Sycamore Alder Riparian Woodland	CNDDB	A tall, open, broadleafed, winter-deciduos streamside woodland dominated by *Platanus racemosa* and *A.rhombifolia*. Seldom form closed canopy forests, and may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. Lianas include *Rubus ursinus* and *Toxicodendron diversilobum*. Distinctions between this type and Sycamore Alluvial Woodland merit additional study. Found on very rocky streambeds to seasonally high-intensity flooding. *Alnus* increases in abundance on more perennial streams, while *Platanus* favors more intermittent hydrographs. Distribution: Transverse and Peninsular ranges from Point Conception south to Baja California Norte.[l]	Confirmed Absent	This community is not present within the study area.
Southern Willow Scrub	CNDDB	Dense, broadleafed, winter-deciduous riparian thickets dominated by several *Salix* species, with scattered emergent *Populus fremontii* and *Platanus racemosa*. Most stands are too dense to allow much understory development. Occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type requires repeated flooding to prevent succession to Southern Cottonwood-Sycamore Riparian Forest. Distribution: Formerly extensive along the major rivers of coastal southern California, but now reduced by urban expansion, flood control and channel improvements.	Confirmed Absent	This community is not present within the study area.
Vernal Pool	MSHCP	Ephemeral wetlands forming shallow depressions and underlain by a substrate (i.e. clay) near the surface which restricts downward percolation of water. Characterized as seasonally inundated pools supporting many rare endemic plants and animals (i.e. fairy shrimp). Distribution: In California, found in valley bottoms and plateaus. Also occur outside of California.[m]	Confirmed Absent	There are no vernal pools on within the study area. There are no depressions that would hold water for sufficient periods to create vernal pool conditions.

[a] Mattoni et al. 1997. Rudi Mattoni, Gordon F. Pratt, Travis R. Longcore, John F. Emmel, and Jeremiah N. George. The endangered quino checkerspot butterfly, *Euphydryas editha quino* (Lepidoptera: Nymphalidae). Urban Wildlands Group, UCLA Department of Geography, Box 951524, Los Angeles, California 90095-1524 and Department of Entomology, University of California, Riverside, California 92521.

[b] California Herps.com. *Aspidoscelis tigris stejnegeri* – Coastal Whiptail. Accessed: December 2010 at http://www.californiaherps.com/lizards/pages/a.t.stejnegeri.html

[c] California Burrowing Owl Consortium. 1997.

[d] Sullivan, Janet. 1996. Taxidea taxus. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2010, December 27].

[e] Brylski. 1998. Terrestrial Mammal Species of Special Concern in California, Los Angeles pocket mouse, *Perognathus longimembris brevinasus*. California Department of Fish and Game, Wildlife Branch.

[f] Brylski, P., H. Shellhammer, R. Duke. 1999. Southern Grasshopper Mouse Distribution, Abundance, and Seasonality. California Department of Fish and Game, Sacramento, California.

[g] Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Nongame Heritage Program, Dept. Fish & Game, Sacramento, Calif. 156 pp.

[h] Dudek & Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan. Volumes 1 – 5. Prepared for the Transportation and Land Management Agency, County of Riverside, California as part of the Riverside County Integrated Project. Adopted June 2003, currently available at http://www.rcip.org/conservation.htm.

[i] Also Holland 1986.

[j] Also Holland 1986.

[k] Dudek & Associates 2003.

[l] Also Holland 1986.

[m] Also Dudek & Associates 2003.

Appendix B
Plants and Wildlife

Appendix B1. UCR Glen Mor 2 Apartments Plant Species Observed

Scientific Name	Common Name
ANTHOPHYTA - ANGIOSPERMS: DICOT	
Asteraceae	**Sunflower Family**
Ambrosia psilostachya	Western Ragweed
Baccharis salicifolia	Mule Fat
***Centaurea melitensis*	Tocalote
***Cirsium vulgare*	Bull Thistle
Deinandra sp.	tarplant
Encelia farinosa	Brittlebush
**Lactuca serriola*	Prickly Lettuce
**Sonchus oleraceus*	Common Sow Thistle
Boraginaceae	**Borage Family**
Amsinckia menziesii	Menzies' Fiddleneck
Brassicaceae	**Mustard Family**
***Hirschfeldia incana*	Short-pod Mustard
Cactaceae	**Cactus Family**
**Opuntia ficus-indica*	Indian-fig Cactus
Opuntia prolifera	Coastal Cholla
Caprifoliaceae	**Honeysuckle Family**
Sambucus mexicana	Blue Elderberry
Chenopodiaceae	**Goosefoot Family**
**Salsola tragus*	Prickly Russian-thistle
Euphorbiaceae	**Spurge Family**
***Ricinus communis*	Castor-bean
Fabaceae	**Pea Family**
**Parkinsonia aculeata*	Mexican Palo Verde
Fagaceae	**Beech Family**
Quercus agrifolia	Coast Live Oak
Geraniaceae	**Geranium Family**
**Erodium botrys*	Broad-lobed Filaree
***Erodium cicutarium*	Red-stemmed Filaree
Juglandaceae	**Walnut Family**
Juglans californica x nigra	California Black /Eastern Black Walnut
Malvaceae	**Mallow Family**
**Malva parviflora*	Cheeseweed
Papaveraceae	**Poppy Family**
Eschscholzia californica	California Poppy
Polygonaceae	**Buckwheat Family**
Polygonum lapathifolium	Willow-weed
Salicaceae	**Willow Family**
Populus fremontii	Fremont's Cottonwood
Salix gooddingii	Goodding's Black Willow
Salix lasiolepis	Arroyo Willow

Scientific Name	Common Name
Solanaceae	**Nightshade Family**
**Datura stramonium*	Annual Jimsonweed
Datura wrightii	Perennial Jimsonweed
***Nicotiana glauca*	Tree Tobacco
Tamaricaceae	**Tamarisk Family**
** *Tamarix ramosissima*	Mediterranean Tamarisk
Vitaceae	**Grape Family**
Vitis girdiana	Desert Grape
ANTHOPHYTA - ANGIOSPERMS: MONOCOT	
Arecaceae	**Palm Family**
***Washingtonia robusta*	Mexican Fan Palm
Cyperaceae	**Sedge Family**
Cyperus eragrostis	Tall Flatsedge
Iridaceae	**Iris Family**
Sisyrinchium bellum	Western Blue-eyed-grass
Poaceae	**Grass Family**
***Avena sp.*	oat
***Bromus diandrus*	Ripgut Brome
***Bromus madritensis*	Foxtail Chess
***Hordeum murinum*	Glaucous Foxtail Barley
Leymus condensatus	Giant Wild Rye

Legend

*=Non-native species

**=Non-native species; California Integrated Pest Council (CAL-IPC) 2006

Appendix B2. UCR Glen Mor 2 Apartments Wildlife Species Detected

Scientific Name	Common Name
REPTILES	
Phrynosomatidae	**Spiny Lizard Family**
Sceloporus occidentalis	Western Fence Lizard
Uta stansburiana	Side-blotched Lizard
BIRDS	
Accipitridae	**Hawk Family**
Buteo lineatus	Red-shouldered Hawk
Buteo jamaicensis	Red-tailed Hawk
Falconidae	**Falcon Family**
Falco sparverius	American Kestrel
Columbidae	**Pigeon and Dove Family**
Zenaida macroura	Mourning Dove
Trochilidae	**Hummingbird Family**
Archilochus alexandri	Black-chinned Hummingbird
Calypte anna	Anna's Hummingbird
Selasphorus sp.	Allen's Hummingbird
Picidae	**Woodpecker Family**
Picoides nuttallii	Nuttall's Woodpecker
Tyrannidae	**Tyrant Flycatcher Family**
Sayornis nigricans	Black Phoebe
Sayornis saya	Say's Phoebe
Tyrannus verticalis	Western Kingbird
Corvidae	**Jay and Crow Family**
Aphelocoma californica	Western Scrub-Jay
Corvus brachyrhynchos	American Crow
Hirundinidae	**Swallow Family**
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Aegithalidae	**Bushtit Family**
Psaltriparus minimus	Bushtit
Troglodytidae	**Wren Family**
Thryomanes bewickii	Bewick's Wren
Troglodytes aedon	House Wren
Mimidae	**Thrasher Family**
Mimus polyglottos	Northern Mockingbird
Sturnidae	**Starling Family**
**Sturnus vulgaris*	European Starling

Scientific Name	Common Name
Emberizidae	**Sparrow Family**
Pipilo maculatus	Spotted Towhee
Pipilo crissalis	California Towhee
Melospiza melodia	Song Sparrow
Icteridae	**Blackbird, Cowbird and Oriole Family**
Icterus cucullatus	Hooded Oriole
Fringillidae	**Finch Family**
Carpodacus mexicanus	House Finch
Carduelis psaltria	Lesser Goldfinch
Passeridae	**Old World Sparrow Family**
**Passer domesticus*	House Sparrow
MAMMALS	
Leporidae	**Hare and Rabbit Family**
Sylvilagus audubonii	Desert Cottontail
Sciuridae	**Squirrel Family**
Spermophilus beecheyi	California Ground Squirrel
Geomyidae	**Pocket Gopher Family**
Thomomys bottae	Botta's Pocket Gopher
Canidae	**Canid Family**
**Canis familiaris*	Domestic Dog

Legend

*= Non-native or invasive species

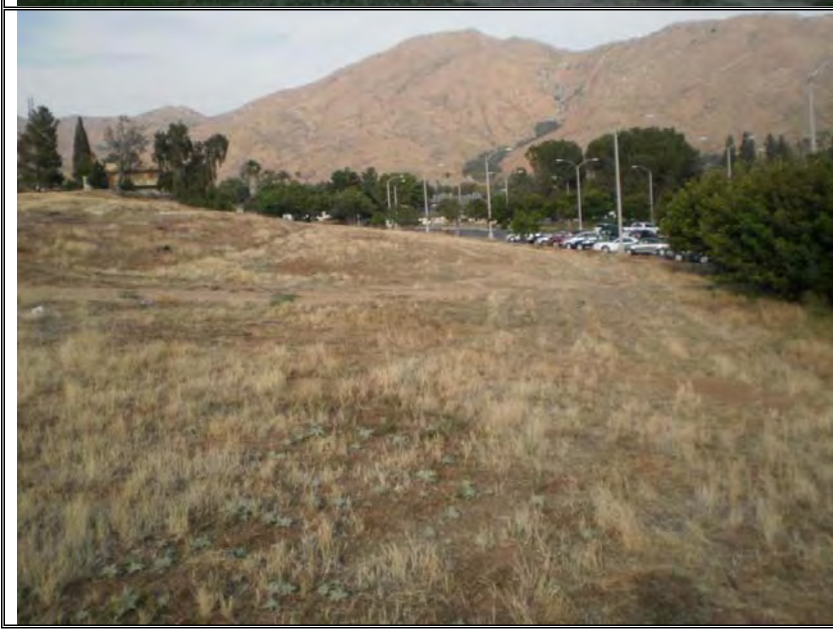
Appendix C

Photos

Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 1 **Photo Date** 6/2/2010 **Direction** East **Comment** Ruderal vegetation and annual grassland along the west edge of proposed project footprint.
	**Photograph #** 2 **Photo Date** 6/2/2010 **Direction** Southeast **Comment** View of landscaped grassy lawn and ornamental trees (developed) located east of Lothian Residence Hall.

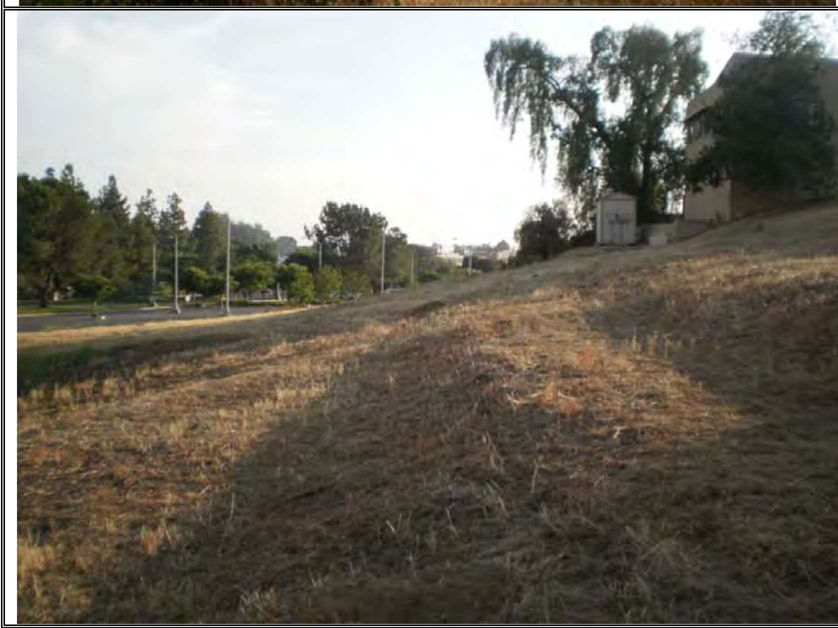
Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 3 **Photo Date** 6/2/2010 **Direction** East **Comment** Grassy lawn and ornamental trees (developed) with annual grassland in background.
	**Photograph #** 4 **Photo Date** 6/2/2010 **Direction** East **Comment** Annual grassland north of Parking Lot 14.

Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 5 **Photo Date** 6/2/2010 **Direction** Northeast **Comment** Annual grassland north of Parking Lot 14.
	**Photograph #** 6 **Photo Date** 6/2/2010 **Direction** West **Comment** Ruderal vegetation and walnut woodland. Glen Mor Apartments in the background.

Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 7 **Photo Date** 6/2/2010 **Direction** Southwest **Comment** Ruderal vegetation and annual grassland north of arroyo.
	**Photograph #** 8 **Photo Date** 6/2/2010 **Direction** West **Comment** Annual grassland east of vacant residential home.

Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 9 **Photo Date** 6/2/2010 **Direction** East **Comment** View along Big Springs Road with Parking Lot 14 and ornamental landscaping in the background.
	**Photograph #** 10 **Photo Date** 6/2/2010 **Direction** Southeast **Comment** View of annual grassland in the foreground and Developed (ornamental trees and grassy lawn) in the background. Valencia Hill Drive located in the background.

Appendix C1. General Site Photographs for the Glen Mor 2 Student Apartments Project

	**Photograph #** 11 **Photo Date** 6/2/2010 **Direction** South **Comment** View of annual grassland in the foreground and Developed (Parking Lot 14, ornamental trees and grassy lawn) in the background. Located near the southeast corner of vacant residence.

Photograph #	1
Photo Date	06-02-10
Direction	Southwest
Comment	Overview of drainage

Photograph #	2
Photo Date	06-02-10
Direction	West
Comment	Notice incised unvegetated channel. Walnuts on the bank in the background.

Photograph #	3
Photo Date	06-02-10
Direction	East
Comment	Incised sandy channel bottom with sparse mulefat.

Photograph #	4
Photo Date	06-02-10
Direction	East
Comment	Incised sandy channel bottom with sparse mulefat.

Photograph #	5
Photo Date	06-02-10
Direction	East
Comment	Sediment choked 24” concrete pipe near the western end of the channel. Willows and cottonwoods in the background; castor bean in foreground.

Photograph #	6
Photo Date	06-02-10
Direction	East
Comment	Braided area prior to flowing into 48” concrete pipe near the western end of the channel.

Photograph #	7
Photo Date	06-02-10
Direction	East
Comment	Channel downstream of 48” concrete pipe.

Photograph #	8
Photo Date	6/14/2010
Location	West end of arroyo
Direction	North
Comment	Ambrosia douglasii and Juncus acutus

Photograph #	9
Photo Date	6/14/2010
Location	West end of arroyo
Direction	North
Comment	Baccharis salicifolia

Photograph #	10
Photo Date	6/14/2010
Location	Northwest of riparian area, on west end of arroyo
Direction	South
Comment	Parking lot run-off and possibly some lawn run-off as source of water for riparian vegetation

Appendix D

Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Glen Mor 2 Student Apartments City/County: Riverside Sampling Date: 06-02-10

Applicant/Owner: UCR State: CA Sampling Point: 1

Investigator(s): Lexi Kessans/Marisa Flores Section, Township, Range: 7.5' Riverside East Section 20, 2TS, R4W

Landform (hillslope, terrace, etc.): channel bottom Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 33.976690 Long: -117.322099 Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam, 0 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

Area sampled is immediately upstream of a 24" partially blocked culvert which backs up and allows water to pond and support hydrophytic species.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. Tamarix ramosissima	10	N	FAC
2. Salix gooddingii	90	Y	OBL
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5' radius)			
1. Juglans californica	3	Y	FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Ricinus communis	2	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species		x 2 =	
FAC species	13	x 3 =	39
FACU species	2	x 4 =	8
UPL species		x 5 =	
Column Totals:	105 (A)		137 (B)

Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR 3/4	100					sandy silt	no redox
5-18	7.5YR 3/2	100					silty sand	no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Glen Mor 2 Student Apartments City/County: Riverside Sampling Date: 06-14-10

Applicant/Owner: UCR State: CA Sampling Point: 2

Investigator(s): Lexi Kessans/Lisa Rodgers Section, Township, Range: 7.5' Riverside East Section 20, 2TS, R4W

Landform (hillslope, terrace, etc.): flat land next to parking lot Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): C Lat: 33.976198 Long: -117.321193 Datum: NAD 83

Soil Map Unit Name: Monserate sandy loam, 8 to 15 percent slopes, eroded NWI classification: Other

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	✓	
Hydric Soil Present?		✓
Wetland Hydrology Present?		✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

Area of predominantly hydrophytic vegetation adjacent to a parking lot. No hydrology indicators present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 5' radius)			
1. Baccharis salicifolia	40	Y	FACW
2.			
3.			
4.			
5.			
= Total Cover	40		
Herb Stratum (Plot size: 5' radius)			
1. Ambrosia psilostachya	75	Y	FAC
2. Juncus acutus	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	55	x 2 =	110
FAC species	75	x 3 =	225
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	130 (A)		335 (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Remaining 10% in herb layer consists of prostrate Juncus acutus.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					sandy clay	no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: unknown

Depth (inches): 12"

Hydric Soil Present? Yes ______ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ____________

Water Table Present? Yes ______ No ✓ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

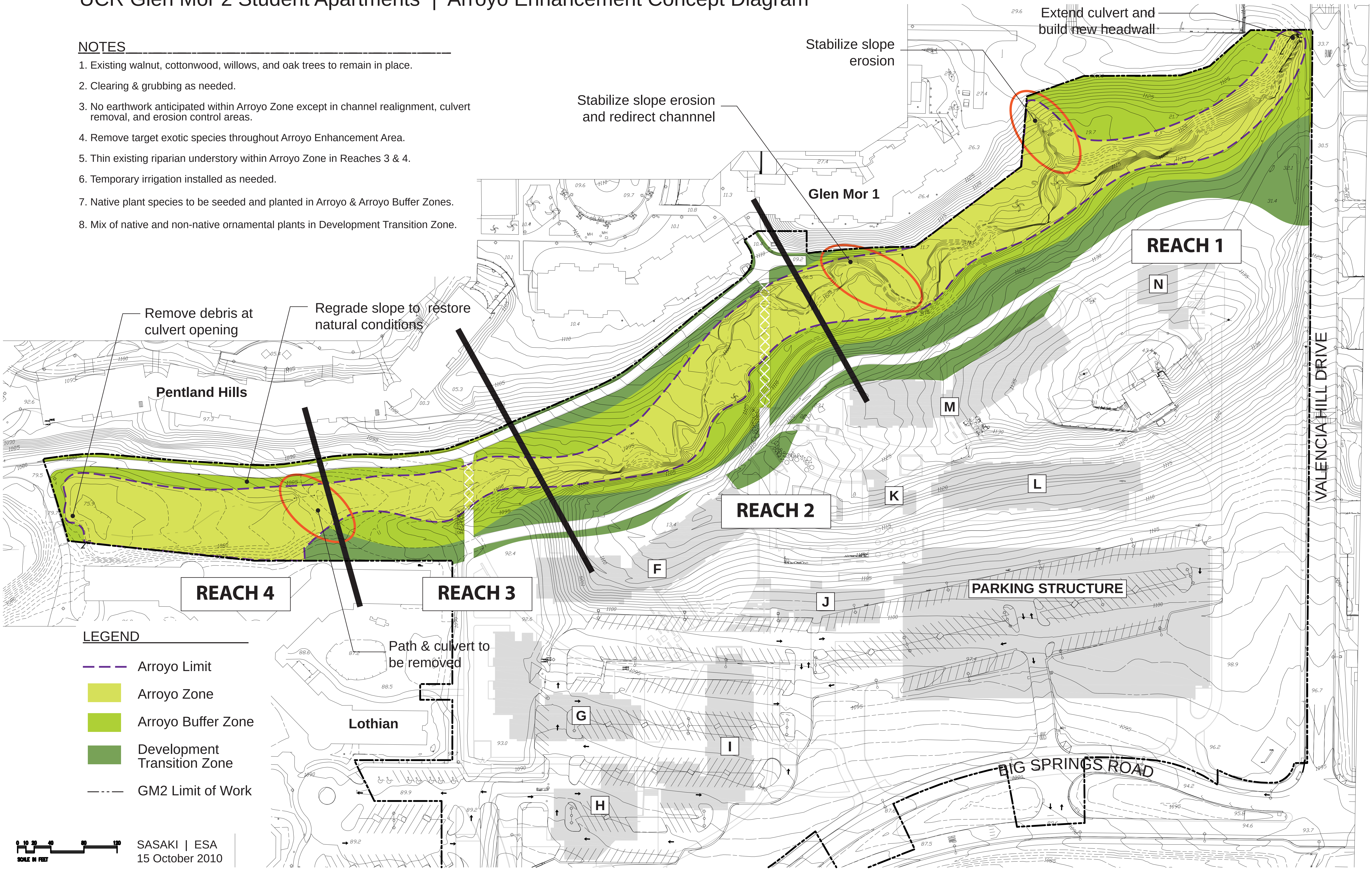
Remarks:

Appendix E
Arroyo Enhancement Plan

UCR Glen Mor 2 Student Apartments | Arroyo Enhancement Concept Diagram

NOTES

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



SASAKI | ESA
15 October 2010

TABLE 1
SCRUB SEED MIX

Scientific Name	Common Name	Purity/Germination	Bulk Application Rate (lbs/acre)
Artemisia californica	California sagebrush	15/60	2.0
Calandrinia ciliata	Red maids	80/70	0.5
Ceanothus crassifolius	Thick-leaved lilac	98/70	1.0
Clarkia purpurea	Winecup clarkia	90/80	0.5
Croton (=Eremocarpus) setiger	Doveweed	90/40	0.5
Deinandra (= Hemizonia) fasciculata	Fascicled tarweed	20/80	1.0
Dichelostemma capitatum[b]	Blue dicks	90/80	0.5
Encelia farinosa	Desert brittlebush	50/60	1.0
Eriogonum fasciculatum	California buckwheat	50/10	2.0
Eriophyllum confertiflorum	Golden yarrow	30/70	1.0
Heterotheca grandiflora	Telegraph weed	40/50	0.5
Lasthenia gracilis	Coast goldfields	90/85	0.5
Lotus strigosus	Bishop's lotus	90/70	1.0
Lupinus bicolor	Dove lupine	98/80	1.0
Lupinus truncatus	Collar lupine	98/75	1.0
Malacothamnus fasciculatus	Chaparral mallow	15/60	2.0
Mimulus aurantiacus	Bush monkey-flower	02/60	1.0
Melica imperfecta	Coast range melica	80/60	2.0
Nassella lepida[a]	Foothill needlegrass	90/60	3.0
Nassella cernua[a]	Nodding needlegrass	90/80	3.0
Phacelia ramosissima	Branching phacelia	95/80	1.0
Platystemon californicus	Cream cups	90/20	0.5
Salvia apiana	White sage	70/30	2.0
Salvia mellifera	Black sage	70/30	2.0
Trichostema lanceolatum	Vinegar weed	n/a	0.5
Vulpia microstachys	Small fescue	90/80	3.0
			34.5

[a] Seed of Nassella spp. shall be de-awned.
[b] Hand sown.
Source: ESA 2010.

TABLE 2
SCRUB CONTAINER PLANTS

Scientific Name	Common Name	Size	Quantity
Artemisia californica	California sagebrush	D-40	125/acre
Encelia farinosa	Desert brittlebrush	D-40	80/acre
Eriophyllum confertiflorum	Golden yarrow	D-40	100/acre
Quercus berberidifolia	Scrub oak	1-gallon	50/acre
Salvia apiana	White sage	D-40	50/acre
Yucca whipplei	Our Lord's candle	1 gallon	30/acre

[a] Shrubs shall be spaced approximately 10 feet on center.
Source: ESA 2010.

TABLE 3

RIPARIAN CONTAINER PLANTS

Scientific Name	Common Name	Size	Quantity
Trees			
Platanus racemosa	Western sycamore	5 gallons	30/acre
Populus fremontii	Fremont's cottonwood	5 gallons	30/acre
Shrubs			
Baccharis salicifolia	Mule fat	1 gallon	20/acre
Rhus trilobata	Skunkbrush	1 gallon	20/acre
Rosa californica	Wild rose	D-40	54/acre
Sambucus mexicanus	Mexican (or blue) elderberry	1 gallon	20/acre
Salix lasiolepis	Arroyo willow	1 gallon	20/acre
Groundcovers			
Distichlis spicata	Salt grass	Plugs	250/acre
Leymus condensatus	Giant wild rye	Plugs	250/acre
Muhlenbergia rigens	Deergrass	Plugs or D-40	250/acre

Note: 15' spacing center distance from other container plants (groundcovers excluded from calculation).
Source: ESA 2010.

TABLE 4
INSTALLATION LOCATIONS OF PLANT MATERIALS

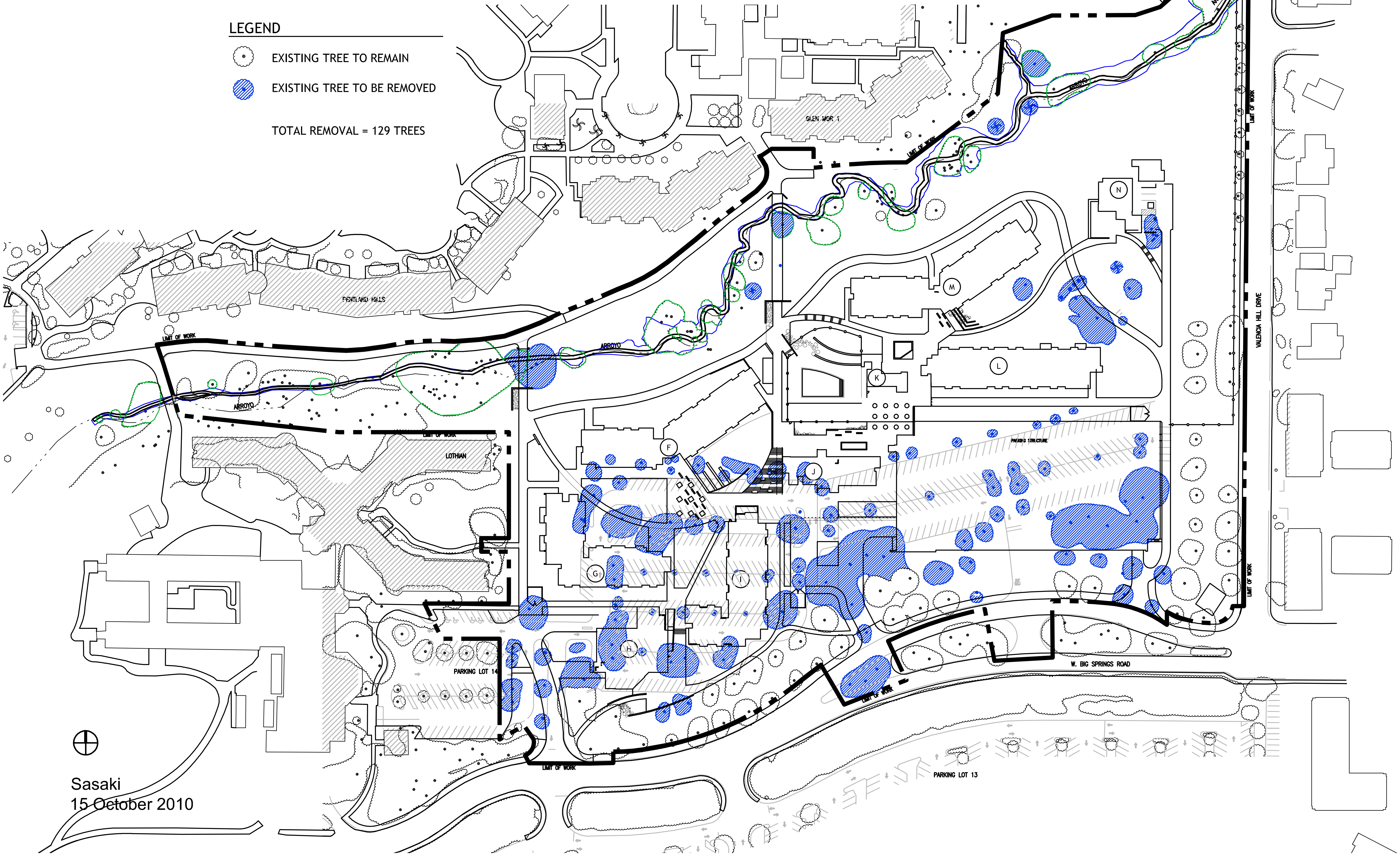
	Zone		
Reach	Arroyo	Arroyo Buffer	Development Transition
Reach 1	SSM, SCPP	SSM, SCPP	TBD
Reach 2	SSM, RCPP	SSM, SCPP	TBD
Reach 3	none	SSM, SCPP	TBD
Reach 4	RCPP	SSM, SCPP	TBD

SSM = scrub seed mix (see Table 1);
SCPP = scrub container plant palette (see Table 2);
RCPP = riparian container plant palette (see Table 3);
TBD = to be determined in landscape plans and specs

Appendix F

Tree Removal Plan

UCR Glen Mor 2 Student Apartments | Tree Removal Plan



Appendix G

Historic Aerials

UCR Glen Mor 2
UCR Glen Mor 2
Riverside, CA 92507

Inquiry Number: 2788149.5
June 10, 2010

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

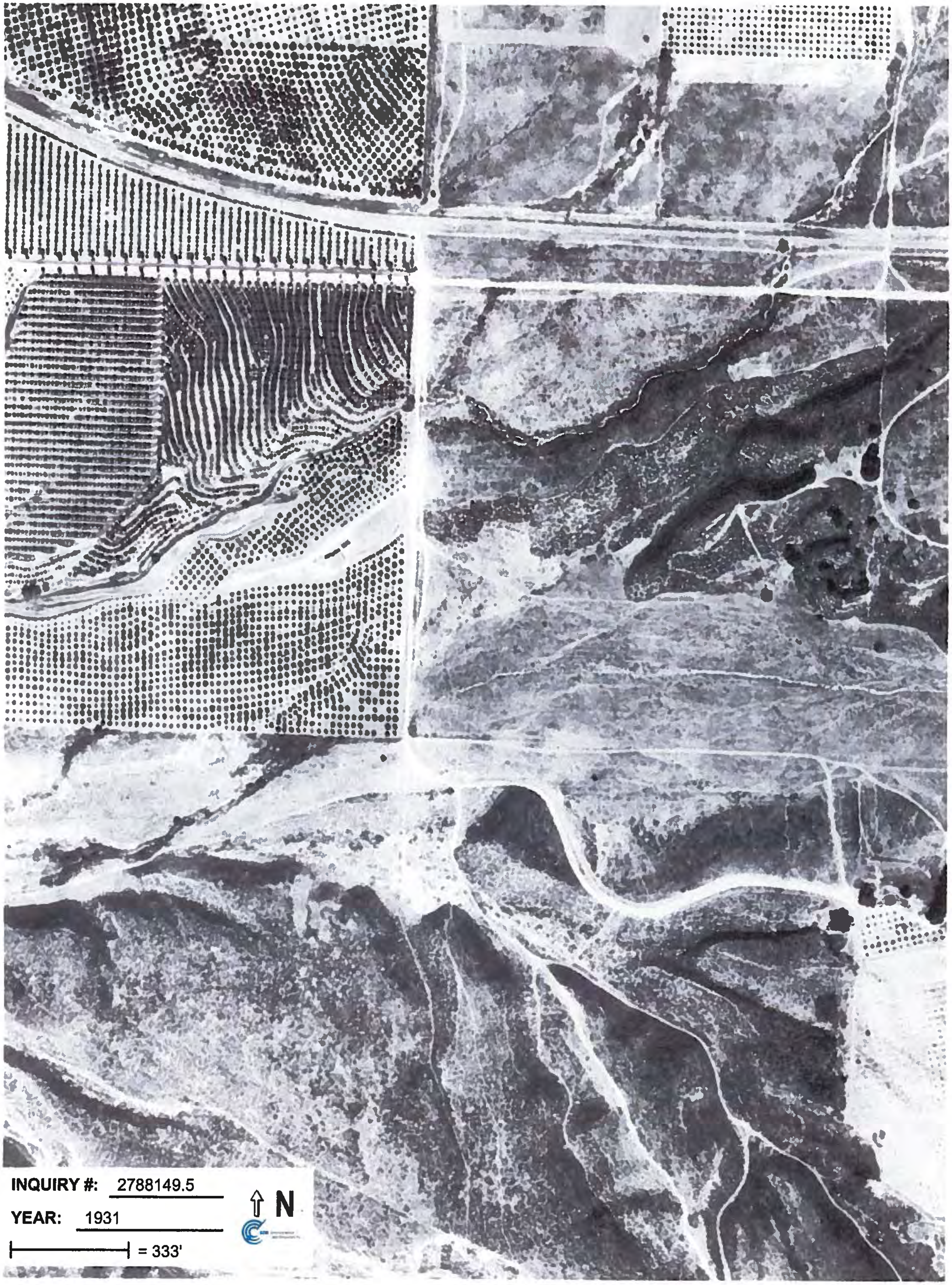
When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

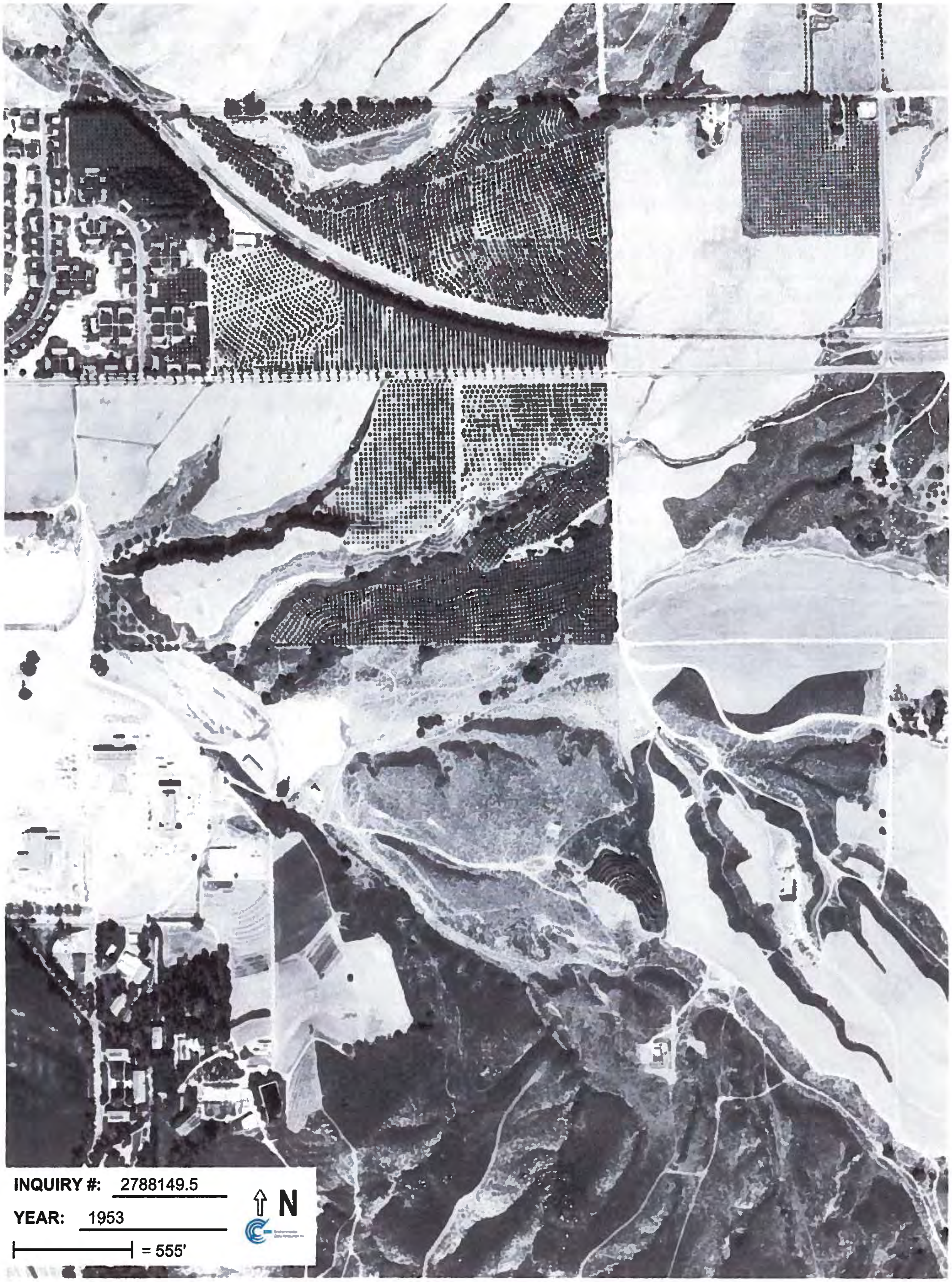
Date EDR Searched Historical Sources:
Aerial Photography June 10, 2010

Target Property:
UCR Glen Mor 2
Riverside, CA 92507

Year	***Scale***	***Details***	***Source***
1931	Aerial Photograph. Scale: 1"=333'	Flight Year: 1931	Fairchild
1938	Aerial Photograph. Scale: 1"=555'	Flight Year: 1938	Laval
1953	Aerial Photograph. Scale: 1"=555'	Flight Year: 1953	Pacific Air
1963	Aerial Photograph. Scale: 1"=333'	Flight Year: 1963	Mark Hurd
1977	Aerial Photograph. Scale: 1"=666'	Flight Year: 1977	Teledyne
1989	Aerial Photograph. Scale: 1"=666'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=666'	Flight Year: 1994	USGS
2002	Aerial Photograph. Scale: 1"=666'	Flight Year: 2002	USGS
2005	Aerial Photograph. Scale: 1"=604'	Flight Year: 2005	EDR

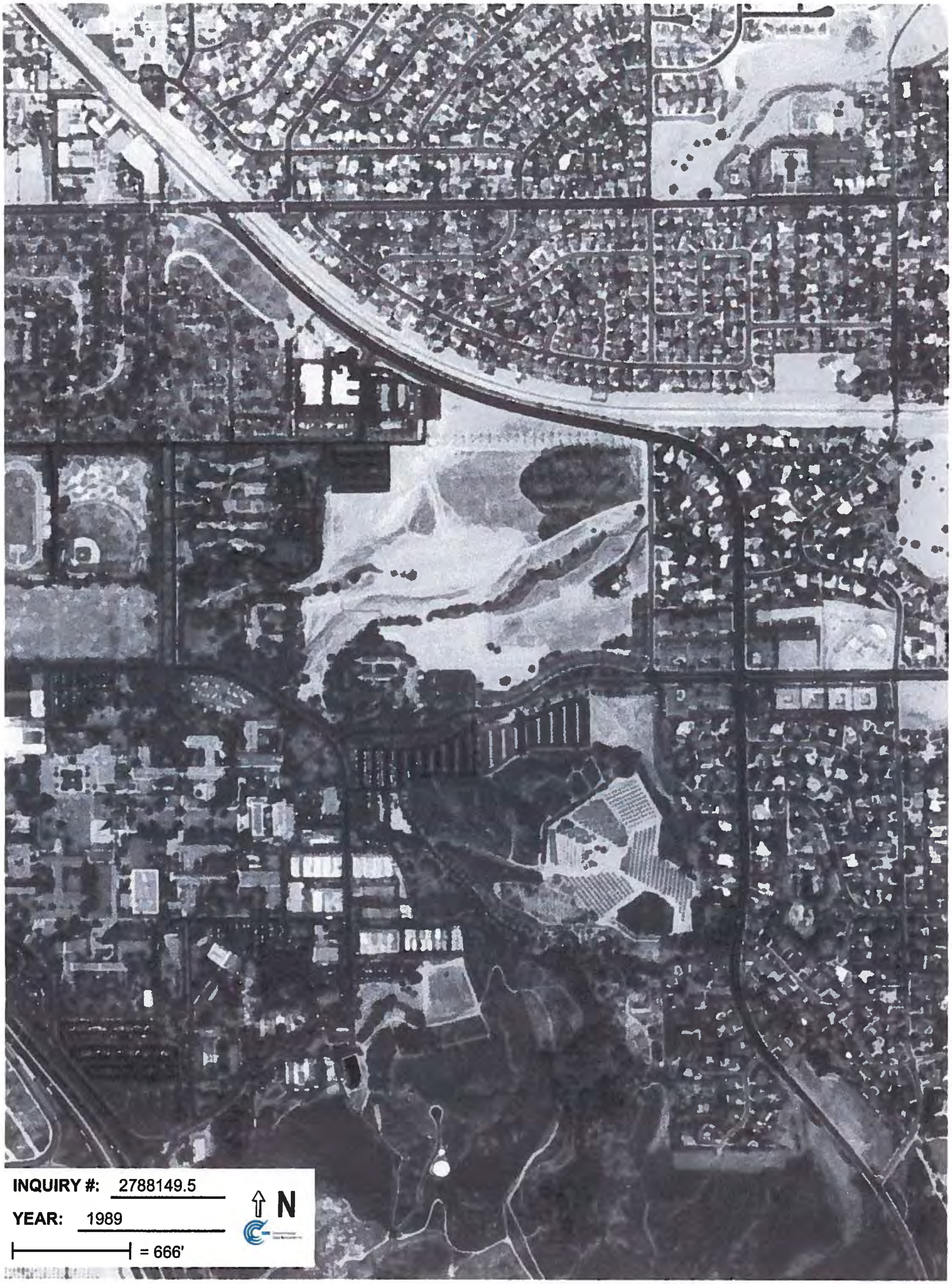

INQUIRY #: 2788149.5
YEAR: 1931
= 333'
N


INQUIRY #: 2788149.5
YEAR: 1938
N
= 555'


INQUIRY #: 2788149.5
YEAR: 1953
= 555'
N


INQUIRY #: 2788149.5
YEAR: 1963
= 333'
N


INQUIRY #: 2788149.5
YEAR: 1977
= 666'
N


INQUIRY #: 2788149.5
YEAR: 1989
= 666'
N


INQUIRY #: 2788149.5
YEAR: 1994
= 666'
N


INQUIRY #: 2788149.5
YEAR: 2002
N
= 666'

INQUIRY #: 2788149.5

YEAR: 2005

= 604'

N

Appendix J
Historical Resources Evaluation

-REVISED-
Historic Resources Evaluation:
Assessor Parcel Numbers 251-180-005-6
City of Riverside, Riverside County, California

Prepared For:
University of California, Riverside
Riverside, California

Prepared By:
Chambers Group, Inc.
Redlands, California

November 2010

-REVISED-
Historic Resources Evaluation:
Assessor Parcel Numbers 251-180-005-6
City of Riverside, Riverside County, California

Prepared For:
University of California, Riverside
Office of Design and Construction
3615-A Canyon Crest Drive
Riverside, CA 92521-0322
Prepared By:

Shannon L. Loftus, M.A.H.P, RPA/RPH (2010)
Jessica J. Auck M.A. (2008)
Chambers Group, Inc.
302 Brookside Avenue
Redlands, California 92373

November 2010

U.S. Geological Survey 7.5’ Quadrangle:

Riverside East, California (1980)

Resources Identified:

3671 Valencia Hill Drive / 680 Linden Street

Keywords: Architectural Survey, University of California at Riverside (UCR), East Riverside, History, Historic Structures, Project Area, Riverside County, Citrus

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1.0 INTRODUCTION

This revised report addendum provides the results of a follow-up to a prior cultural resources inventory (Auck 2008) for the proposed demolition of the structure located on Assessor's Parcel Number (APN) 251-180-005-6 in the City of Riverside, Riverside County, California. State law, as set forth in the California Environmental Quality Act (CEQA), requires that a cultural resources evaluation of the project area be completed before demolition and redevelopment work can proceed.

In 2008, in compliance with CEQA, the University of California, Riverside retained Chambers Group, Inc. (Chambers Group) in to perform a records/literature review of cultural resources known to exist in the project area, as well as an architectural survey of the property to determine any potential significant historical or architectural factors related to the property. The cultural resources inventory presented here consists of the results of the cultural resources record search/literature review, and the results of the architectural survey and evaluation of the historical structure located on the property.

Recently (August 2010), Chambers Group was presented with newly identified potential Primary Source information pertaining to the subject property. Specifically, the late Primary Source information resulted in the need for additional investigation into the possible historical association of the subject property with activities related to March Air Field and/or Camp Haan, circa World War II. Therefore, Chambers Group undertook additional investigation into this aspect of the subject property.

The cultural resources records search/literature review of the database maintained at the Eastern Information Center revealed that no prior cultural resources studies have been performed on the property, and that 15 previously recorded cultural resources have been identified or evaluated within a one-mile radius of the property. The records search indicated that there is one historic era structure located on the property.

The cultural resources field survey of the property was performed November 25 and 26, 2008 and again September 21, 2010 by Chambers Group cultural resources specialists. As a result of the field survey, one previously unrecorded historic-age structure was recorded on the property. This structure is a single-family (capable of use as a multi-family) residence constructed in 1925. This structure does not appear to be eligible for inclusion to the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or for local listing by the City of Riverside..

2.0 PROJECT DESCRIPTION

The University of California, Riverside proposes the development of a campus student housing complex on the property located along Valencia Hill Drive between Watkins Drive and Big Springs Road. This will involve the potential demolition of one historic-era single-family residence..

3.0 LOCATION AND ENVIRONMENTAL SETTING

The property designated as APN 251-180-005-6 is located in the City of Riverside, Riverside County, California. The property surveyed in 2008 and again in 2010 is bounded to the north by Watkins Drive and a student housing development called Glen Mor Apartments, to the south by Big springs Road, by Valencia Hill Drive to the east, and by a student housing development called Lothian Residence Hall to the west. Interstate 215/CA-60 is one mile west of the project area. The property is within the south one-half of Section 20 of Township 2 South, Range 4 West, of the San Bernardino Base Meridian, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Riverside East (1980) topographic quadrangle. The elevation of the property is approximately 2,850 feet above mean sea level (see Figure 2). The property is located on hummocky terrain with the structure cutting into the precipice of a hillside.

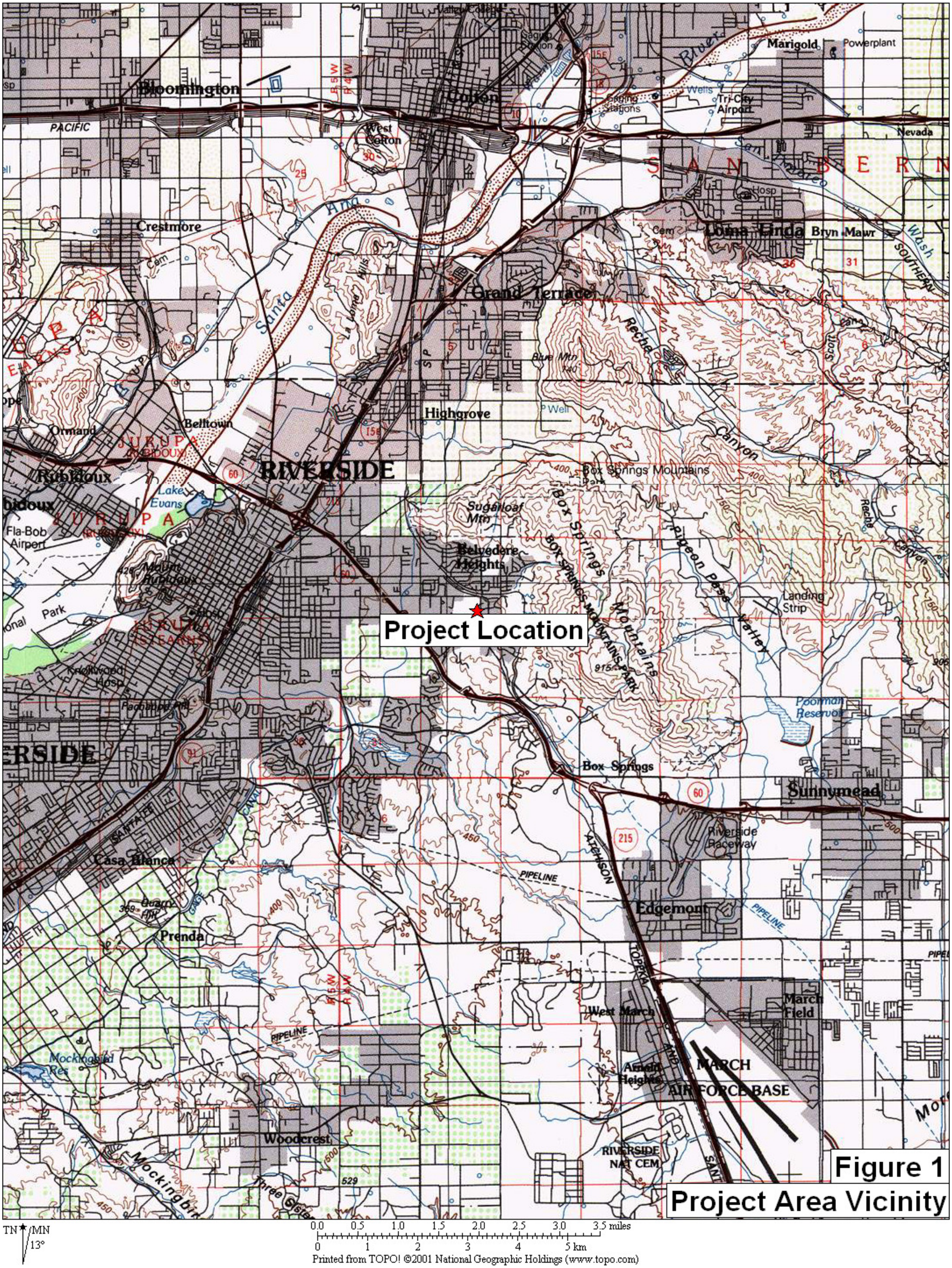


Figure 1

Project Area Vicinity

Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

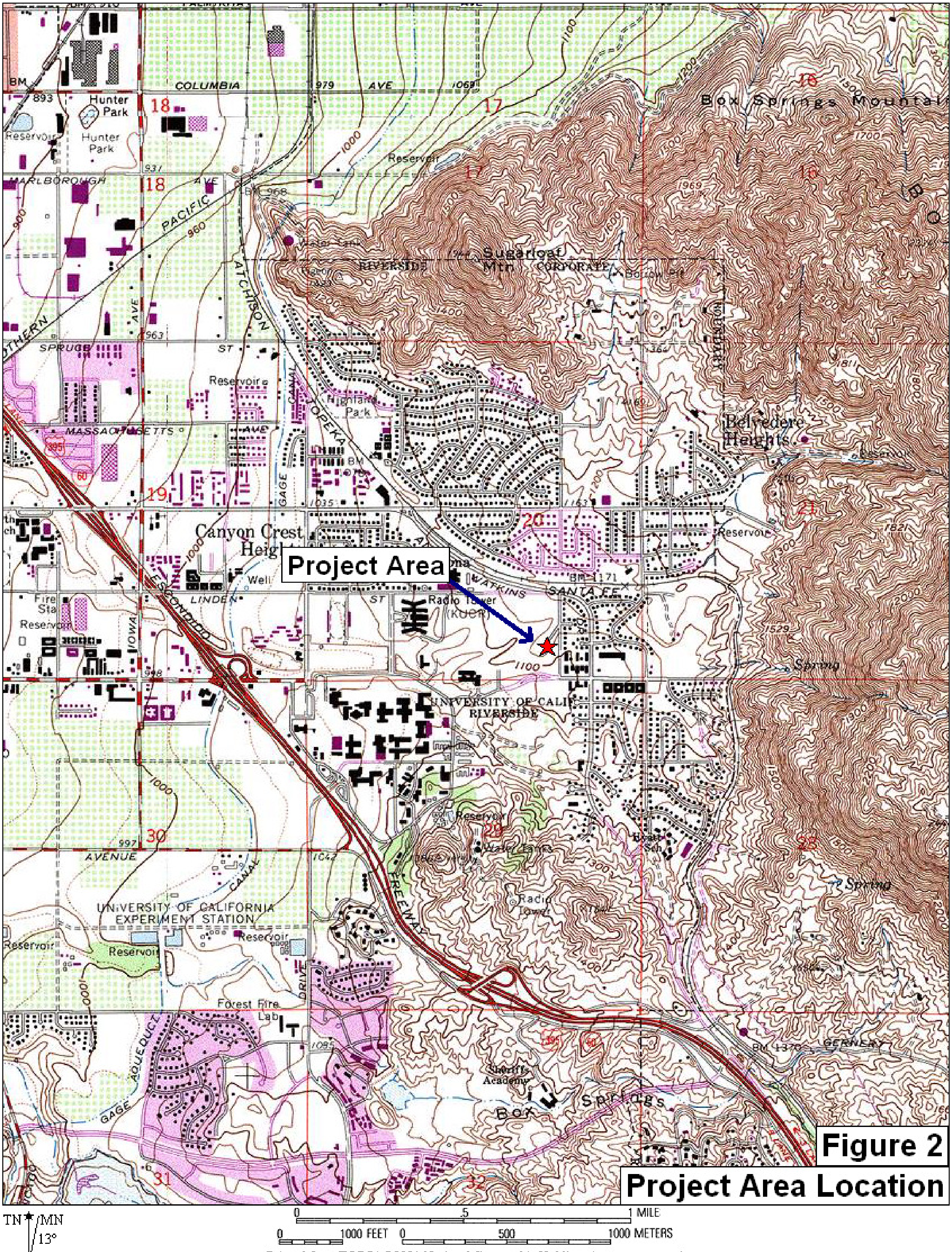
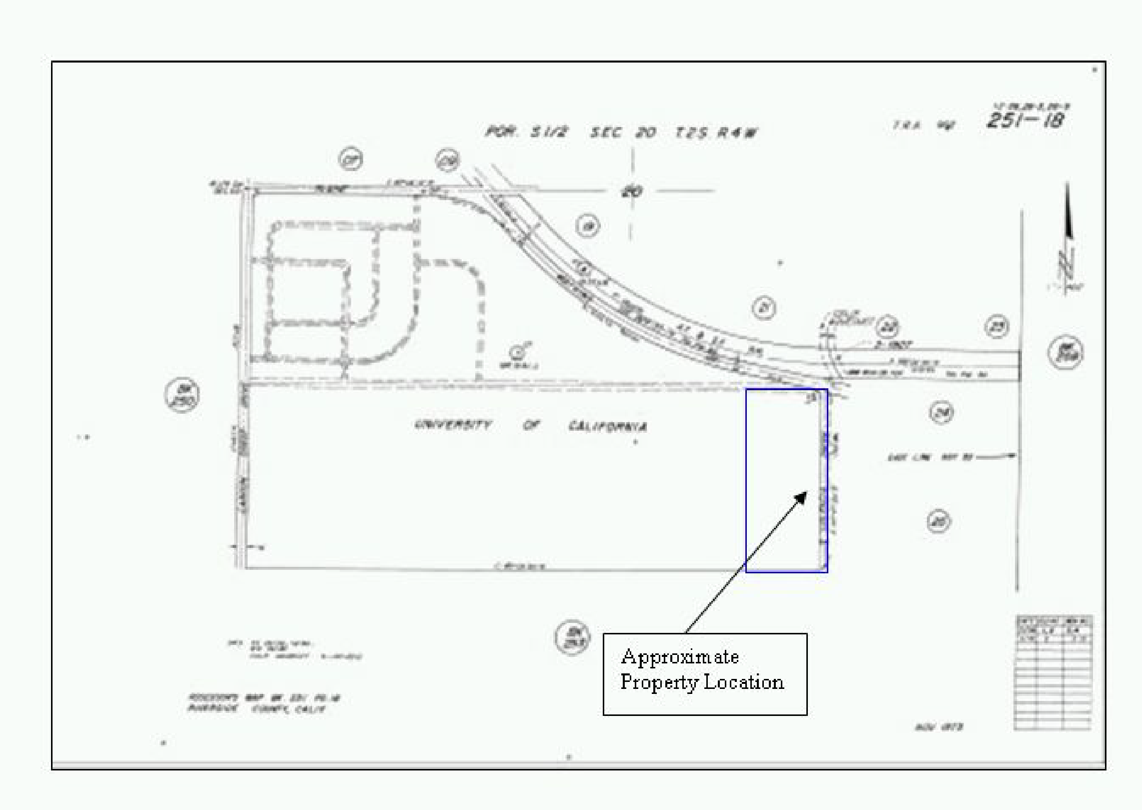


Figure 2

Project Area Location

Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

Figure 3 Assessor's Office Parcel Map, Riverside County, California



4.0 HISTORY

The following represents the historical development of the area, as prepared in 2008, and is inclusive of added historical information pertaining to the subject property, as amended per this 2010 Addendum.

4.1 Regional History

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and 4 presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the majority of the California region during this period. The purpose of the missions was primarily Indian control, along with economic support to the presidios, forced assimilation of the Indians to Hispanic society, and conversion of the native population to Spanish Catholicism. The Mexican Period (1821 to 1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers.

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold the same year sparked the 1849 California Gold Rush, bringing thousands of miners and settlers to California, most of whom settled in the north. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s as a result of severe floods and droughts, which put many ranchos into bankruptcy.

La Placita (Agua Mansa) was the earliest community to be founded in what was later to become Riverside County. Hispanicized Indian settlers from Abiquiu, New Mexico, traveled the Old Spanish Trail following an invitation from the Lugo family of Rancho San Bernardino. In exchange for land, the New Mexican immigrants were to protect the rancho's cattle and other assets from theft by local Indians and others. The settlers formed a colony in 1843, but disputes soon arose with the Lugos over water and irrigation rights. In 1844 or 1845, Don Juan Bandini of Rancho /Jurupa offered the settlers better land and water rights on the south bank of the Santa Ana River. The New Mexicans, disappointed in their dealings with the Lugos, accepted the offer, known as the Bandini Donation. Led by Lorenzo Trujillo, the settlers formed the community of La Placita (Gunther 1984; Harley 1991; Waitman 1991). The riverbank location proved to be ill-chosen, however, when the adobe town was destroyed during the disastrous flood of 1862 (Clark 1978/1979; Ahlborn 1982).

In 1870, a few years after La Placita was rebuilt, the community of Riverside was founded 2 miles to the south. First referred to as a colony, the area became one of the first citrus growing centers in the country, an activity stimulated by the arrival of the Southern Pacific Railroad in the 1870s and the Atchison, Topeka, and Santa Fe Railroad in the 1880s. The railroads opened communications, travel, and shipping between the Riverside/San Bernardino area and Los Angeles, as well as other regions of the country. A land boom brought about by cheap rail fares and aggressive real estate promotions was in progress by the late 1880s. Irrigation was expanded with construction of the Riverside Upper and Lower Canals, dug in the 1870s, and the Gage and Riverside-Warm Creek Canals, opened in the 1880s. Arlington Heights, situated in a former arid region just southwest of the project area, developed into a leading citrus-producing area when Matthew Gage extended his canal there and began irrigation in 1888. In 1893, Riverside became the seat of government when Riverside County was formed from portions of San Bernardino and San Diego Counties (Gunther 1984; Brown 1985).

In the following decades, the local citrus industry grew and agriculture became the predominant economy of the area. The Great Depression in the 1930s, however, brought hardships to the region and some farmers were forced to sell their groves. During the United States' involvement in World War II (1942-1945), the San Bernardino area was made headquarters of the Western Defense Command because of its safe distance from the threat of an aircraft-carrier-based aerial attack and its status as a regional rail, highway, and communications hub. The economy of the Riverside/San Bernardino area was boosted by military establishments such as the U.S. Army Air Depot (Norton Air Force Base) and the U.S. Army Base General Depot (Camp Ono) in San Bernardino, and March Field (March Air Force Base) south of Riverside (Belden 1963; Brown 1985), and the Camps Anza and Haan, with the latter partially located on property currently held by UCR as evinced by existent World War II era military family housing or Bachelor Officer Quarters..

In 1940, a Coast Artillery Anti-Aircraft Replacement Training Center was established in the immediate vicinity of UCR. Camp Haan consisted of 8,058 acres of land (4-miles long and 3-miles wide), inclusive of the arid and flat plains often associated with March Air Field, as well as the rolling hills dotted with citrus and groves associated with the historical landscape of portions of the UCR campus.

> "At first it was mostly a tent camp, but permanent wooden barracks and other buildings were added. By October of 1941, the Camp had 353 buildings, 2,459 floor tents, 6 exchanges, 5 chapels, a hospital, 18 miles of sewers, and 28 miles of streets. By November 1941 most of the men who trained here had been assigned to coastal defenses in the Los Angeles and San Francisco Bay area. When the attack came on Pearl Harbor a month later, and fears of an invasion of the U.S. west coast were at their height, it would have been these men who would have been our first line of defense had it happened" (California State Military Museum website: http://www.militarymuseum.org/cphaan.html).

The following year (1942) Camp Haan was transformed into an Army Service Depot and a Prisoner of War (POW) Camp was built to house Italian POWs. The POWs were utilized to work the citrus groves on the facility. "At its peak, Camp Haan had a population of 80,000 people. After the war the camp became a separation center and on August 31, 1946 was closed. Many of the wooden buildings were sold and moved to other locations and the land was divided. Parcels went to March Field and to create the Riverside National Cemetery on Van Buren Boulevard" (California State Military Museum website: http://www.militarymuseum.org/cphaan.html).

Following World War II, agriculture in the Riverside area declined as industrial and suburban development increased. In the 1950s and 1960s, construction of State Highways 60 and 91 through the area stimulated new housing and commercial growth, and Riverside stretched southward and northward along the freeway (Brown 1985). Near the intersection of Highways 60 and 91 lies an area originally named *Riverside Heights*. The name *Riverside Heights* was first applied in 1883 to describe 2,100 acres of territory riding along the western edge of the Box Springs Mountain Range reaching towards the eastern edge of Riverside's original colony. Land prospectors intended to utilize the nearby Box Springs for water, however, the spring failed to supply adequate water to support the township and development of *Riverside Heights* never came to fruition (Gunther 1984).

4.2 Property Specific History

The following represents the historical development of the area, as prepared in 2008, and is inclusive of added historical information pertaining to the subject property, as amended per this 2010 Addendum.

By the early 20th century, the *Riverside Heights* area came under the ownership of the East Riverside Land Company which subdivided the belt of land for agricultural purposes. Some of the earliest settled properties were utilized for poultry farming, however citrus became the primary agricultural resource. Few homes were built in the area, with most belonging to citrus growers and their crews. The Citrus Experiment Station, an agricultural research depot was moved from near Mount Rubidoux to the western edge of *Riverside Heights* in 1918. The station was comprised of a sprawling complex built in Spanish Mission style, but was surrounded by little more than the citrus groves it was situated in to study. By the 1940s, the only substantial housing development within the area was a plot of housing built for families of men or as Bachelor Officer Quarters, stationed at nearby March Field/Camp Haan.

Camp Haan was constructed on property adjacent to March Field, and, it would seem, on property presently belonging to UCR as evinced by the aforementioned military style housing. Camp Haan existed circa 1941-1946, and upon closure the property and buildings were sold to the surrounding community. A moderate-sized complex of single-family and duplex residences identified as likely Camp Haan family housing or Bachelor Officer's Quarters is located on property owned by UCR. This military housing complex is situated southeast of Canyon Crest Drive and Blaine Street and comprises the Canyon Crest Family Student Housing at UCR.

Development came quickly to the area when, in 1948, the University of California regents approved the College of Letters and Science in association with the Citrus Experiment Station. Classes commenced in 1954 and by 1959, the Riverside campus was declared a General Campus within the University of California system (University of California, Riverside). Meanwhile, a great deal of Riverside Heights land covered in citrus groves were sold, sub-divided and razed for the construction of mass-plan single family residential homes intended to house the booming population following World War II. In 1950, the city organized zoning for the area, setting aside approximately 1,000 acres for campus development and 4,500 acres for surrounding single family homes (Los Angeles Times 1950). A pathway used through the area since at least the 1940s was given the name Watkins drive after a university provost and became a main corridor with housing on either side primarily developed as the Sungold Highlands No. 1 tract by Sungold Homes, a housing developer renowned for aesthetic façade variations in mass planned residential communities.

The neighborhood was incorporated into the City of Riverside in 1961. The earliest resident and property owner associated with the immediate area and likely with the construction of the structure itself was a poultry farmer-come-citrus orchardist named Charles E. Dunlap who, according to county deed records, purchased his land in 1922 (Riverside County Assessor's Office). Building permits and plans for the house were not available through county or city archives, and the builder and/or architect are unknown. The building appears to have undergone two episodes of reconstruction including the addition of a second story and addition of a rear portion to the original structure. Both episodes appear to have occurred prior to 1950. City Directory listings dated to the early 1950s associate the area with the Rich family (a family of mechanics), a Mr. H.M. Brownen and wife Stella who were orchardists, and a Mr. G.A. Sinclair and wife Ethel (City Directory Listings 1926-1963). The property was acquired by U.C. Riverside in 1955 University of California Office of Architects & Engineers) and was subsequently used to house the family of groundskeeper and craft foreman J.A. Chalmers (City Directory and oral history accounts, circa 2008 and 2010).

5.0 METHODS

5.1 Cultural Resources Record Search/Literature Review/Oral Interview Methods

A record search/literature review was conducted on November 25, 2008 at the Eastern Information Center, located at the University of California, Riverside. The purpose of this review was to examine any existing cultural resources survey reports, archaeological site records, and historic maps to determine whether previously documented prehistoric or historic archaeological sites, architectural resources, cultural landscapes, or ethnic resources exist within or near the property. The record search/literature review was also conducted to determine whether any historic properties listed on or determined eligible for listing on the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) exist within a one-mile radius of property.

Additional archival research was conducted to determine the historical significance of the structures. Sources included:

- University of California, Riverside: Special Collections Archives;
- Riverside Central Library Local Archives;
- Riverside County Assessor's Office;
- Historic news articles from the Los Angeles Times, regional newspaper;
- Review of Riverside's historic Citrus Industry;
- Review of the development of the University of California campus at Riverside
- Tom Patterson Collection at the Riverside Municipal Museum (via oral interview with Kevin Hallaran)

Research focused on identifying the dates of community development and local settlement patterns, and significant events, themes and persons that may be associated with the City of Riverside, specifically the eastern portion incorporated into the city in 1961, or with the property surveyed that might qualify it for inclusion in the CRHR or the as a local historical resource on the City of Riverside's Historical Resource Inventory. Secondary sources of historical information pertaining to the City of Riverside were also reviewed to develop a historic context for evaluation of the building.

In 2010, all of the previous research conducted by Chambers Group was re-reviewed and determined to be sufficient given the depth and breadth of investigation, not withstanding a lack of available historical information at the City and County offices, as well as at UCR. The Riverside Municipal Museum was queried as to a purported collection pertaining to Camp Haan, but the Tom Patterson Collection pertains to Camp Anza, unaffiliated with UCR (personal communication with Mr. Hallaran, November 1, 2010). Additionally, oral interviews were conducted with Mr. Mike Terry (Assistant Director of Facilities and Maintenance, UCR), a former occupant of the subject property and the identified potential Primary Source of additional information pertaining to an associated of the subject property with March Field/Camp Haan. Mr. Terry was interviewed by Ms. Loftus, via telephone call in late September 2010.

Mr. Terry provided information that can be described as tertiary. Mr. Terry indicated that a former UCR employee, Mr. Lee Smith occupied the subject property circa 1983-1987. During his tenure as occupant, Mr. Smith relayed to Mr. Terry the following information; one afternoon Mr. Smith noticed an elderly couple walking to the south of the subject property and pointing towards it. Mr. Smith took the time to approach the elderly couple and introductions were made all around. Mr. Smith invited the elderly couple up to the residence in question for a cup of tea. During this informal visit between Mr. Smith and the elderly couple it was discerned that he elderly gentleman identified himself as a former commander at the March Air Field or Camp Haan facility. The subject property was the elderly gentleman's residence while in command of the March Air Field or Camp Haan facility. The elderly gentleman's name is a mystery as Mr. Terry lacks this knowledge. Mr. Smith left the employ of UCR in the mid 1980s and his whereabouts are unknown. Mr. Terry indicated Mr. Smith was an electrician. Attempts were made to locate Mr. Smith, but proved unsuccessful.

Therefore, given the oral-history as presented above, it can be described as tertiary; the elderly gentleman who identified himself as a military commander of March Air Field or Camp Haan would be considered the Primary Source of information. Mr. Smith can be considered as a Secondary Source of information, and finally Mr. Terry as a Tertiary Source of information.

Following the oral interview with Mr. Terry, it was determined that clarification was needed as to the likelihood of a commanding officer associated with either March Field or Camp Haan residing at the subject property. Review of historic aerials available on-line at www.historicaerials.com was undertaken. Additional telephone interview between Ms. Loftus and March Field Museum resulted in an inquiry to the California State Military Museum in Sacramento, CA. Mr. William Davies, *Chief Librarian of the Major General Walter P. Story Memorial Library and Research Center*, was provided copies of photos of the subject property, along with photos of the identified military housing down-slope and to the west-northwest of the subject property, and a synopsis of the study herein. Mr. Davies and Ms. Loftus discussed the likelihood of a commanding officer residing the subject property, its position in terms of geographical position atop a small hill overlooking the aforementioned military housing, and the surrounding land formerly developed with citrus groves. Ms. Loftus and Mr. Davies determined that that at best it is likely that a connection can be made with a person identifying themselves as a commanding officer having resided at the subject property during the existence of Camp Haan, given the former developed orchard/hilltop location of the residence, overlooking what appears to be military housing, and the utilization of POWs within the groves.

An inquiry to March Air Field Museum resulted in referral to Master Sergeant John P. Hale, Base Historian, at March Joint Air Reserve Base. Ms. Loftus interviewed Sergeant Hale late September. Sergeant Hale indicated that no commanding officer for March Air Field would have resided at the subject property location on UCR property as a commanding officer's residence is located on March Joint Air Reserve Base property. Interestingly, the subject property and that of the commanding officer's residence at then March Field are contemporaneous in terms of era of construction an architectural style. However, this is strictly coincidental. Sergeant Hale had no historical information pertaining to Camp Haan. Sergeant Hale referred Chambers Group to the Air Force Historical Research Agency (www.afhra.af.mil).

Review of available data on-line at the Air Force Historical Research Agency (www.afhra.af.mil) resulted in the following contextual information pertaining to architectural style of March Air Field and Camp Haan only, and one citation pertaining to a Brigadier General Edward Barber having overseen the 36th Army Air Artillery Group (as Commanding Officer prior to promotion as Brigadier General) and the 59th Army Air Artillery Brigade between 1942-1945 at Camp Haan (http://www.af.mil/information/bios/bio_print.asp?bioID=4600&page=1). The *Draft Environmental Assessment for Proposed Military Construction and Total Force Integration at March Air Reserve Base California, 2010* (http://www.march.afrc.af.mil/shared/media/document/AFD-100618-072.pdf), provided the following historical insight;

> "The World War II-era saw March Field become one of the largest USAF bases in the country, with its primary mission being to provide facilities for the testing of new aircraft. Camp Haan, an anti-aircraft artillery camp, was constructed nearby by the War Department in 1940 and later merged with the main facility, which greatly increased the overall size of the Base. The construction of most of the wood-frame "700 Series" barracks, warehouses, supply buildings, and administrative buildings in 1941 and 1942 represented the apex of the construction period at March ARB. In an effort to rapidly provide shelter for incoming troops, the Quartermaster Corps

> developed a set of standardized plans for the buildings that would be produced for the new cantonment area and the dozens of new bases that were being built across the country.
>
> These "mass produced" buildings differ greatly from the Mission Revival style of the original March Field buildings, as they were designed to be erected as quickly as possible, at the lowest cost possible, with no concern for style or aesthetics (March ARB 2004).
>
> The addition of a 7,000-foot runway parallel to the original 1928 runway in 1943 required the acquisition of approximately 950 acres, as the Base mission grew to include providing support for an aviation engineer training center and the development of a B-24 training Base. Following the end of World War II, deactivated bomber groups were stationed at the Base under the command of the 58th Bomb Wing (March ARB 2004), as the USAF became the most important arm of the U.S. strategic position at the beginning of the Cold War.
>
> The Air Force Architectural Services Branch developed standardized designs for the various building types that were needed to accommodate USAF squadrons in the years following World War II. These diagrammatic plans were used by local architectural firms to prepare and develop site plans for new construction at USAF installations around the country. Again, these buildings were intended to be quickly and economically erected, and no effort was made to conform to the Mission Revival style of the early March Field buildings. As a result, the buildings constructed after the end of World War II at March ARB differ from both the Mission Revival buildings and the "700 Series" buildings of the World War II era, and reflect the simple contemporary architectural trends that typically characterize post-World War II installations in the U.S. (March ARB 2004)" (Air Force Reserve Command 2010: Chapter 3.8.2.1. Base History, Page 3-44).

Brigadier General Barber died in 1955, and therefore is not the Primary Source. However, it is possible that General Barber may have resided in the residence, the subject property given his tenure as commander at Camp Haan, but this is entirely speculative.

No additional information could be gleaned as to ensuing commanding officers stationed at Camp Haan. Therefore, the Primary Source encountered by Mr. Smith remains unknown. However, it is important to note that no persons of historical significance with respect to either military or civilian life were identified in association with Camp Haan. At best, the new historical information acquired and incorporated within the historic context statement of the subject property (2010) is anecdotal. At best, it fleshes out the local historical setting of the UCR campus and the subject property, but adds nothing substantial to that which was already researched by CGI in 2007.

5.2 Cultural Resources Field Survey Methods

On November 25 and 26, 2008, and again in September 21, 2010 a Chambers Group cultural resources specialist conducted an architectural survey of the structure that is slated for possible demolition. Field documentation of the historic age structure included detailed notes on the architectural characteristics of the buildings as well as building materials, modifications, and integrity. The exteriors of all extant structures and auxiliary structures were examined, documented, and digitally photographed. Notes were taken on the environmental setting and surrounding areas. California Department of Parks and Recreation (DPR) 523 Primary Record and Building, Structure, and Object Record forms were completed for the historic structure as required by the Office of Historic Preservation (see Appendix A).

5.3 Cultural Resources Evaluation Methods

The historical structure was evaluated for historical and architectural significance under the criteria of both the CRHR and the City of Riverside Historic Resource Inventory. The four standard eligibility criteria (Table 1) and seven elements of integrity (Table 2) were applied for making this evaluation.

California Register Eligibility Criteria. The California Register was legislated in 1992 and was put into effect by California Code of Regulations (CCR) Title 14, Chapter 11.5 and Public Resources Code (PCR) Sections 5020.1, 5020.4, 5020.7, 5024.1, 5024.5, 5024.6, 21084 and 21084.1. The purpose of the California Register is to act 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 §4850.1). A historical resource as defined by the PCR "includes, but is not limited to, 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" (PCR §5020.1 q). A substantial adverse change as defined by the PCR constitutes "demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired" (PCR §5020.1 q).

CEQA further establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). Therefore, the resource needs to be evaluated to determine its significance as a historic resource and whether impacts to it should be considered significant on the environment. There are four criteria for determining eligibility to the CRHR for historic significance. These criteria are presented in Table 1 (California Department of Parks and Recreation 1998a, b).

Table 1
Criteria for Inclusion of a Property on the
California Register of Historical Resources

Criterion	Association	Characteristic
1	Event	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	Person	It is associated with the lives of persons important to local, California, or national history.
3	Design/ Construction	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.
4	Information Potential	It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Source: California Code of Regulations

Table 2
Qualities of Integrity Related to Eligibility for the California Register of Historical Resources

Quality	Description
Location	The place the historic property was constructed or the historic event occurred.
Design	The combination of elements creating the property's form, plan, space, structure, and style.
Setting	The physical environment of the historic property.
Materials	The physical elements combined at a particular period of time and in a particular pattern or configuration to form a historic property.
Workmanship	The physical evidence of the craft of a particular culture or people during any given period.
Feeling	The property's expression of the aesthetic or historic sense of a particular period of time.
Association	The direct link between an important historic event or person and the property.

In addition to historical significance, a property must have integrity to be eligible to the CRHR. Integrity consists of the property's ability to convey its demonstrated historical significance. Seven individual elements comprise integrity (see Table 2). It is not required that a historic property display all of these qualities. A property must display only two of these aspects of integrity to be considered CRHR-eligible. Some resources are listed on the California Register automatically (California Department of Parks and Recreation 1998a). These include:

- Properties that are listed on the NRHP;
- Properties that have been determined eligible for listing in the NRHP whether by the Keeper of the National Register or through a consensus determination; and
- California Historical Landmarks from Number 777 on.

6.0 RESULTS

6.1 Cultural Resources Record Search/Literature Review Results

The review of survey reports and site records obtained from the Eastern Information Center indicate that one previous cultural resources investigation (Report No. RI-07816) was conducted adjacent to the property in preparation for the construction of the extant Glen Mor student housing complex. The record search also revealed that there are no previously recorded historic or prehistoric sites on the property. The nearest previously recorded site is located approximately 0.80 mile due west. That site (P-39-000090) was recorded in 1994 in order to determine eligibility for the National Register of Historic Places (NRHP) as a portion of the California Aqueduct. The California Aqueduct was constructed in the 1970s and results of the nomination deemed the aqueduct too recent for inclusion on the NRHP.

Archival research indicates that no prominent individuals, either at a local level or otherwise are recorded as having been residents of the structure located on APN 251-180-005-6 (per the 2008 and 2010 studies). Historic significance associated with the area is primarily linked to Riverside's historic Citrus Industry and to the development of the University of California, Riverside. Although the property may be linked to both, it does not appear to have played a significant role in either of the two locally significant historical themes.

6.2 Cultural Resources Survey Results

The building located on APN 251-180-005-6 has been associated with multiple street addresses throughout the development of the area. Most recently, it has held the street address of 3671 Valencia Hill Drive, however for County Assessor purposes it is referred to as 680 Linden Street. The property is located on the west side of Valencia Hill Drive between Watkins Drive to the north and Big Springs Road to the south. The structure is a detached two-story single-family (capable of multi-family use) residence constructed in 1925. It comprises approximately 1760 square feet including three bedrooms and one full and one three-quarter bathroom.

The house is a split level stuccoed Spanish Eclectic style single-family residence. The roof is flat with decorative clay scuppers consisting of three circular channels stacked in a pyramid configuration placed along the roof line for drainage. The front elevation is one story with the back elevation containing two stories set into the down slope of a hill setting the second story below the first.

The building is constructed as a front-facing U-plan facing north containing an open tiled porch area approximately 13.5 feet wide and recessed approximately five feet. Two wood framed single hung windows are set into the recessed wall. A tile covered mission style arching parapet is set above the porch with a American-Spanish ceramic tiled cantilevered eave sheltering the porch area. Two entrances, one southerly entry and one on the westerly wall of the U-shape formation are accessible from the porch. Moorish influenced parapets line the façade of the northern elevation along the recessed porch line and along the two northern elevation walls of the U-shape formation, wrapping around a portion of the eastern and western elevations. The two northern elevation walls of the U-shape formation are asymmetrical, the westerly side measuring approximately 16 feet and the easterly side measuring approximately 18 feet. Craftsmen styled fixed wooden framed windows are sheltered from the scuppers above by tile covered eaves centered on each of those two walls. Concave tiled parapets adorn both sides.

A chimney rides alongside the upper story of the westerly wall approximately four feet from the northern elevation. Three scuppers are set along the roofline. Two wood framed single hung windows are inset on either side of the chimney. A third window and an entry door way are located along the western elevation along what appears to be an addition to the original structure. A walk way with a balcony runs alongside the added portion. The garage entrance is below the walkway and balcony as part of the lower story set against the hillside.

The rear (southern) elevation consists of two stories. Two scuppers are set along the roofline. Eleven windows are set into the southern elevation including eight that are single hung and wooden framed. The remaining three are modern horizontal-sliding single hung windows framed in aluminum. An eave is set above the three modern windows providing shelter from the scupper above.

The eastern elevation, like the western elevation, is split level with the rear portion consisting of two stories and the front portion consisting of only one story. Five wooden-framed single hung windows are set into the rear two-story portion along with an entry doorway sheltered by a tiled eave. Two wooden-framed single hung windows are set into the single-story portion including a small window that appears to provide ventilation for a bathroom. Three scuppers are set along the roof line and electrical wires lead to an electrical box set on the wall of the eastern elevation.

The building appears to have undergone two episodes of reconstruction including the addition of the second story and an addition of the first story rear portion. Stylistic features and construction materials used in remodeling efforts date to the 1930s and 1940s indicating that additions to the original structure occurred prior to 1950. The lower story is inaccessible from the upper level through interior means. The lower level appears to function a self contained single-family dwelling, therefore it is likely that the structure has operated as both a single-family and multifamily residence.

It would appear that although constructed circa 1925 for private residential dwelling use, the subject property was possibly rented/utilized, or acquired by the federal government as part of Camp Haan. Specifically, the subject property appears to have been utilized as a commanding officer's quarters. The subject property position, atop a then citrus orchard hillside, overlooked, and continues to overlook, former military housing, represented at present by the Canyon Crest Family Student Housing. Given its location atop a hill, the subject property can be said to be suggestive of a likely candidate for the residence of a commanding officer. The UCR indicates that the campus acquired the property circa 1934-1955 from sources unknown. The period of time given for acquisition of the property is twenty-one years. This is an extensive period of time during which Camp Haan came into being and was dismantled, circa World War II, during which the subject property may have been retained privately, or acquired by the government, re-attained privately, or acquired by UCR by any number of means. Information pertaining to UCR's acquisition of the property is not available at the City of County level. As of the time of preparation of this Revision, UCR was searching its historical files to try and ascertain how it acquired the subject property, and from whom; the federal government, or via private sale.

6.3 Evaluation Results

The historic-age structures identified within the project area are evaluated below for eligibility to the CRHR using the criteria presented in Table 1. The CRHR Criteria utilized to evaluate a historic resource for its significance also encompass the local criteria utilized by the City of Riverside (Riverside County n.d.). The evaluation is based on the level of documentation completed during the 2008 study inclusive of the original field survey, and the 2010 re-review of the study, the second site visit, results of the oral interviews conducted in support of the study (Mr. Terry, Assistant Director of Facilities and Maintenance-UCR; Master Sergeant Hale-March Joint Air Reserve Base Historian; and , Mr. Davies, Chief Librarian-California State Military Museum), and review of the Air Force Historical Research Agency. Each of the four criteria (CRHR) is discussed below with respect to the subject property, and in conjunction with the City of Riverside Municipal Codes 20.20.010 (Landmark Designation criteria), and 20.21.010 (Structure of Merit criteria), that are, by default, subsumed within the CRHR criteria.

- Criteria 1: It is associated with events that have made a significant contribution to the broad patters of local or regional history, or the cultural heritage of California or the United States.

The subject building was extensively researched in 2008 by CGI and was determined to not be associated with an event of historical significance at the local, state, and national level, given available records at the City and County offices, such as Assessor Parcel Maps and City Directories. In 2010, CGI undertook re-investigation of the property given a recent Tertiary Source of information coming forward with information pertaining to the utilization of the subject property as the residence of a commander overseeing the Camp Haan facility. Unfortunately, no substantiated documentation supporting the claim of a commander of the Camp Haan facility having resided in the subject property was identified.

Regardless, the potential association of the subject property with Camp Haan is incidental and anecdotal at best. The subject property was constructed in the late 1920s, by a private citizen identified to likely be Mr. Charles Dunlap a citrus orchardist. This placed construction of the subject property approximately two decades prior to its potential occupancy by a commander at Camp Haan. The role of the subject property, as a commander's residence, were that the case, and if supporting documentation arises in the future, is incidental. The functionality of Camp Haan as an anti-aircraft training facility, and Italian POWs host facility, has no specific association with the subject property. The characterization of the Camp Haan facility and its mission cannot be tied to the subject property.

The association of the subject property with citrus orchard development in the local area is a more close association given the time of its construction, circa late 1920s, and the developing citrus boom of the Riverside area. However, UCR's own Citrus Experiment Station is better example of this era within the local, state, and national context.

Therefore, the subject property is not recommended as eligible for the CRHR or local inventory listing, given its failure to satisfy Criteria 1.

- Criteria 2: It is associated with the lives of persons important to local, California, or national history.

In terms of its earliest history, circa late 1920s, the subject property is associated with the land holdings of Charles Dunlap; a local citrus orchardist. Review of local historic resources (identified above) does not indicate an association of Mr. Dunlap with the Citrus Experiment Station at UCR, or as a locally significant person. Therefore, there is no indication that Mr. Dunlap was historically significant at the state or national level.

An association with a commander at Camp Haan is speculative at best, as no substantiated documentation can be garnered. Only one commander was identified within the historical research, Brigadier General Barber. General Barber died in 1995, and thus is not the source of the claim of residency within the property, as that source made his claim in the mid-1980s to a Mr. Lee Smith who reported this claim to Mr. Terry (Tertiary informant). There is no documentation to suggest that General Barber ever occupied the subject property, as City Directories do not support this speculation. The circa mid-1980s claimant remains unidentified at this time, and the lack of information pertaining to a different commander at Camp Haan who may have resided at the subject property is lacking, thus suggesting such a person, the commanders, is not a person of historical significance at the local, state or national level, with respect to Camp Haan and the subject property.

Review of the City Directories (indicated in the above study), evince no connection with a person of historical significance at the local, state or national level. It is not, therefore, recommended eligible for CRHR listing under Criterion 2.

- Criteria 3: It embodies the distractive characteristics of a type, period, regions, or method of construction, or represents the work of a master or possesses high artistic values.

The house is currently in fair condition, however more recent additions to the building have impacted its historical integrity. The house is a typical example of Spanish Eclectic and Mission Revival architecture and does not represent the architectural work or influence of a master architect or builder. The house does not embody the distinctive characteristics of a period, type, or method of construction. The building is not, therefore, recommended eligible for listing on the CRHR under Criterion 3. The property is not an archaeological site, and the building has little or no potential to yield further data about their architecture or construction. It is not, therefore, recommended eligible for CRHR listing under Criterion 3.

- Criteria 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.

The property is not an archaeological site. The subject property was constructed circa mid-1920s and subsequently remodeled at least two times within the last 60 years. The remodels have resulted in a change of character to the residence given the installation of the garage door, modern windows in the upper stories to the rear, and conduit and lighting collocations for the purposes of modern utility operation. The subject property was a readily available and habitable residence that may have been utilized by a commander of the Camp Haan facility by the 1940s. However, the subject property pre-dates the facility and thus was not constructed for the purposes of utilization by a commander of Camp Haan, thus lacks any significant role with respect to military architectural styles, practices, and methods of construction. As a result, the subject property does not appear to possess the potential to yield data with respect to the role of Camp Haan within the local community, or at the state and national levels, or in regard to architectural styles and methods of construction. It is not, therefore, recommended eligible for CRHR listing under Criterion 4.

In conclusion, the subject property fails to satisfy any of the four criteria of the CRHR, as well as the local criteria set forth within the City of Riverside Municipal Codes 20.20.010 (Landmark Designation criteria) and 20.21.010 (Structure of Merit criteria). Therefore, the subject property has been assigned a recommended CRHR Status Code of 6Z/6Y (found ineligible for NR, CR or local designation through survey valuation) has been applied to the building.

7.0 MANAGEMENT SUMMARY AND RECOMMENDATIONS

The cultural resources record search/literature review of the database maintained at the Eastern Information Center revealed that no prior cultural resources studies have been performed on the property. As a result of the 2008 architectural survey, and follow-up 2010 archival research undertaken in support of the study, one additional historic-era structure was identified on the property. The structure is located 154-feet/47.13-meters down-slope to the west and appears to be the remains of a cesspool, in the vicinity of the property leach field (as discussed with Mr. Terry, September 2010). This structure is incidental and to be expected given the age of the subject property. As such, no further cultural resources work is required.

8.0 REFERENCES

Ahlborn, William O.
1982 Santa Ana River Basin Flood Hazard. Quarterly of the San Bernardino County Museum Association 29(2).

Belden, L. Burr
1963 "World Wars I and II Brought Major Gains to Rialto." San Bernardino Sun-Telegram, California, February 3, B-10.

Brown, James T.
1985 Harvest of the Sun: An Illustrated History of Riverside County. Windsor Publications, Inc., Northridge, California.

Burden, Ernest
2002 *Illustrated Dictionary of Architecture.* McGraw-Hill, New York.

California State Military Museum
n.d. *Historic California Posts: Camp Haan, Quartermaster Depot.* http://www.militarymuseum.org/cphaan.html, Accessed September 2, 2010

City Directories
1926-1963 *City of Riverside.* Multiple Publishers.

City of Riverside
n.d. City of Riverside Community Development Department Planning Division. Accessed remotely at http://www.riversideca.gov/planning/default.asp

Clark, Anthony O.
1978/79 Quaternary Evolution of the San Bernardino Valley. Quarterly of the San Bernardino County Museum Association 26(2 & 3), Winter/Spring.

County of Riverside
n.d. Riverside County Assessor's Office. Research conducted on site 11/25/08 and remotely at http://riverside.asrclkrec.com/

Gunther, Jane Davies
1984 *Riverside County, California, Place Names: Their Origins and Their Stories*. Rubidoux Printing Co., Riverside.

Harley, R. Bruce
1991 Abiquiu, New Mexico: Ancestral Home of the Agua Mansa Pioneers. In *The Agua Mansa Story: A Collection of Papers Compiled on the Occasion of the 150th Anniversary of the Settlement of Agua Mansa*. Compiled by R. Bruce Harley. San Bernardino County Museum Association *Quarterly*, Vol. 39, Number 1. Winter.

Historic Aerial Photographs
1949 Historic Aerials http://www.historicaerials.com/

Los Angeles Times [Los Angeles, California]
1950 *Zoning Mapped for Riverside University Area [UC Riverside development]* 3 September: A3. Los Angeles, California.

1955 *Model Home Near Whittier Attracting Many Viewers [Sungold, Inc. developers]* 23 October: E18. Los Angeles, California

McAlester, Virginia and Lee
2006 *A Field Guide to American Houses*. Alfred A. Knopf, New York.

Riverside County
n.d. http://www.riversideca.gov/historic/pdf/CR_Designation_Applications.pdf Accessed November 1, 2010

United States Air Force Historical Research Agency
2010 www.afhra.af.mil
n.d. Brigadier General Edward Barber, http://www.af.mil/information/bios/bio_print.asp?bioID=4600&page=1, Accessed October 4, 2010

United States Air Force Reserve Command
2010 *Draft Environmental Assessment for Proposed Military Construction and Total Force Integration at March Air Reserve Base California, 2010* (http://www.march.afrc.af.mil/shared/media/document/AFD-100618-072.pdf), Accessed October 4, 2010

United States Department of Commerce
1920-30 *Bureau of the Census: Census Records*. www.ancestry.com

University of California
2006 *UC Riverside marks a century of agricultural innovation—still thriving in an urban empire.* http://calag.ucop.edu/0604OND/crc_aes.html accessed 11/19/08

ORAL INTERVIEWS

Mr. Mike Terry, Assistant Director of Facilities and Maintenance, UCR. September 27, 2010.

Mr. William Davies, Chief Librarian, California State Military Museum, Sacramento. September 28, 2010

Master Sergeant John P. Hale, Base Historian, March Joint Air Reserve Base, September 28, 2010.

Mr. Kevin Hallaran, Researcher, Riverside Municipal Museum, November 1, 2010

9.0 REPORT AND FIELD PERSONNEL

9.1 Report Preparer-2008

Jessica J. Auck, Staff Archaeologist
2008 Historical Archaeology, Bristol University, UK
2005 B.A. History, Anthropology, California State University, Long Beach
Years of experience: 3

9.1a Report Preparer-2010

Shannon L. Loftus, Senior Cultural Resources Specialist
2007 M.A. Historic Preservation, Savannah College of Art and Design
2002 B.A. Anthropology, Union Institute and University, Cincinnati, OH
Years of experience 11

9.2 Field Personnel-2008

Jessica J. Auck, Staff Archaeologist
2009 Historical Archaeology, Bristol University, UK
2005 B.A. History, Anthropology, California State University, Long Beach
Years of experience: 3

9.2a Field Personnel-2010

Shannon L. Loftus, Senior Cultural Resources Specialist
2007 M.A. Historic Preservation, Savannah College of Art and Design
2002 B.A. Anthropology, Union Institute and University, Cincinnati, OH
Years of experience 11

APPENDIX A – DPR RECORDS FORMS

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION PRIMARY RECORD	Primary # HRI # Trinomial NRHP Status Code 6Y	
Other Listings Review Code	Reviewer	Date

 ***Resource Name or #:** APN 251-18-005-6

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted** ***a. County:** Riverside

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Riverside East **Date:** 1980 **T** 2S ; **R** 4W ; S ½ **of Sec** 20 **;** M.D. **B.M.**

c. Address: 3671 Valencia Hill Dr. City: Riverside Zip: 92507

d. UTM: Zone: 11S ; 3759660 mE/ 0470542 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Parcel # 251-18-0005: From the highway 60E/215S, exit 3rd St./Blaine St. and turn left on Blaine St. Turn right onto Watkins Drive then right on Valencia Hill Drive. The building is located on the west (right) side of the road, approximately one-tenth of a mile south of the corner at Watkins and Valencia Hill.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The structure is a detached two-story single family residence capable of use as a multi-family residence constructed in 1925. It comprises approximately 1760 square feet including three bedrooms and one full and one three-quarter bathroom.

The house is a split level stuccoed Spanish Eclectic style residence. The roof is flat with decorative clay scuppers consisting of three circular channels stacked in a pyramid configuration placed along the roof line for drainage. The front elevation is one story with the back elevation containing two stories set into the down slope of a hill setting the second story below the first.

The building is constructed as a front-facing U-plan facing north containing an open tiled porch area approximately 13.5 feet wide and recessed approximately five feet. Two wood framed single hung windows are set into the recessed wall. A tile covered mission style arching parapet is set above the porch with a American-Spanish ceramic tiled eave sheltering the porch area. Two entrances, one southerly entry and one on the westerly wall of the U-shape formation are accessible from the porch. Moorish influenced parapets line the façade of the northern elevation along the recessed porch line and along the two northern elevation walls of the U-shape formation, wrapping around a portion of the eastern and western elevations. The two northern elevation walls of the U-shape formation are asymmetrical, the westerly side measuring approximately 16 feet and the easterly side measuring approximately 18 feet. Craftsmen styled fixed wooden framed windows are sheltered from the scuppers above by tile covered eaves centered on each of those two walls. Concave tiled parapets adorn both sides.

A chimney is set on the upper story of the westerly wall approximately four feet from the northern elevation. Three scuppers are set along the roofline. Two wood framed single hung windows are inset on either side of the chimney. A third window and an entry door way are located along the western elevation along what appears to be an addition to the original structure. A walk way with a balcony runs alongside the added portion. The garage entrance is below the walkway and balcony as part of the lower story set against the hillside.

The rear (southern) elevation consists of two stories. Two scuppers are set along the roofline. Eleven windows are set into the southern elevation including eight that are single hung and wooden framed. The remaining three are modern horizontal-sliding single hung windows framed in aluminum. An eave is set above the three modern windows providing shelter from the scupper above.

The eastern elevation, like the western elevation, is split level with the rear portion consisting of two stories and the front portion consisting of only one story. Five wooden-framed single hung windows are set into the rear two-story portion along with an entry doorway sheltered by a tiled eave. Two wooden-framed single hung windows are set into the single-story portion including a small window that appears to provide ventilation for a bathroom. Three scuppers are set along the roof line and electrical wires lead to an electrical box set on the wall of the eastern elevation.

The building appears to have undergone two episodes of reconstruction including the addition of the second story, addition of the rear portion. Features and construction materials used in remodeling efforts date to the 1930s and 1940s indicating that additions to the original structure occurred prior to 1950. The lower story is inaccessible from the upper level through interior means. The lower level appears to function a self contained single-family dwelling, therefore it is likely that the structure has operated as both a single-family and multi-family residence.

***P3b. Resource Attributes:** (List attributes and codes)
HP 2 – Single Family Residence; HP 3 - Multiple Family Residence ; HP39: Cess pool structure

***P4. Resources Present:** ☑Building ☑Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____
HRI # ____
Trinomial ____

Resource Name or #: (Assigned by recorder) APN 251-18-005-6

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)
The photo shows the northern elevation (front) of the property facing south. The photo was taken November 25, 2008.

***P6. Date Constructed/Age and Sources:** ☑Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
University of California
1111 Franklin Street 6th Floor
Oakland, CA 94607

***P8. Recorded by:** (Name, affiliation, and address)
Jessica J. Auck, M.A. and Shannon. L. Loftus
Chambers Group, Inc.
302 Brookside Avenue
Redlands, CA 92373

***P9. Date Recorded:**
November 24, 2008 and October 8, 2010

***P10. Survey Type:** (Describe)
An architectural survey was conducted including detailed notes on the architectural characteristics of the buildings as well as building materials, modifications, and integrity. The exteriors of all extant structures and auxiliary structures were examined, documented, and digitally photographed. Notes were taken on the environmental setting and surrounding areas

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
2010 Auck, Jessica and Shannon Loftus-*ADDENDUM-Historic Resources Evaluation: Assessor Parcel Numbers 251-18-005-6 City of Riverside, Riverside County, California Cultural Resources Inventory: APN 251-18-005-6, City of Riverside, Riverside County, California*

***Attachments:** ☐NONE ☑Location Map ☐Sketch Map ☑Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):
DPR 523A (1/95)

***Required information**

P3. Description

This information pertains to the follow-up 2010 Addendum inclusive of the archival research undertaken in support of the study. One additional historic-era structure was identified on the property. The structure is located 154-feet/47.13-meters down-slope to the west and appears to be the remains of a cesspool, in the vicinity of the property leach field (as discussed with Mr. Terry, September 2010). This structure is incidental and to be expected given the age of the subject property

P5a and b. Photos

View to southwest at cesspool structure

View to south at cesspool structure

Appendix K

Native American Heritage Commission (NAHC) Letters

ICF INTERNATIONAL

September 23, 2010

San Manuel Band of Mission Indians
Ann Brierty, Policy/Cultural Resources Director
26569 Community Center Dr.
Highland, CA 92346

Dear Ms. Brierty,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

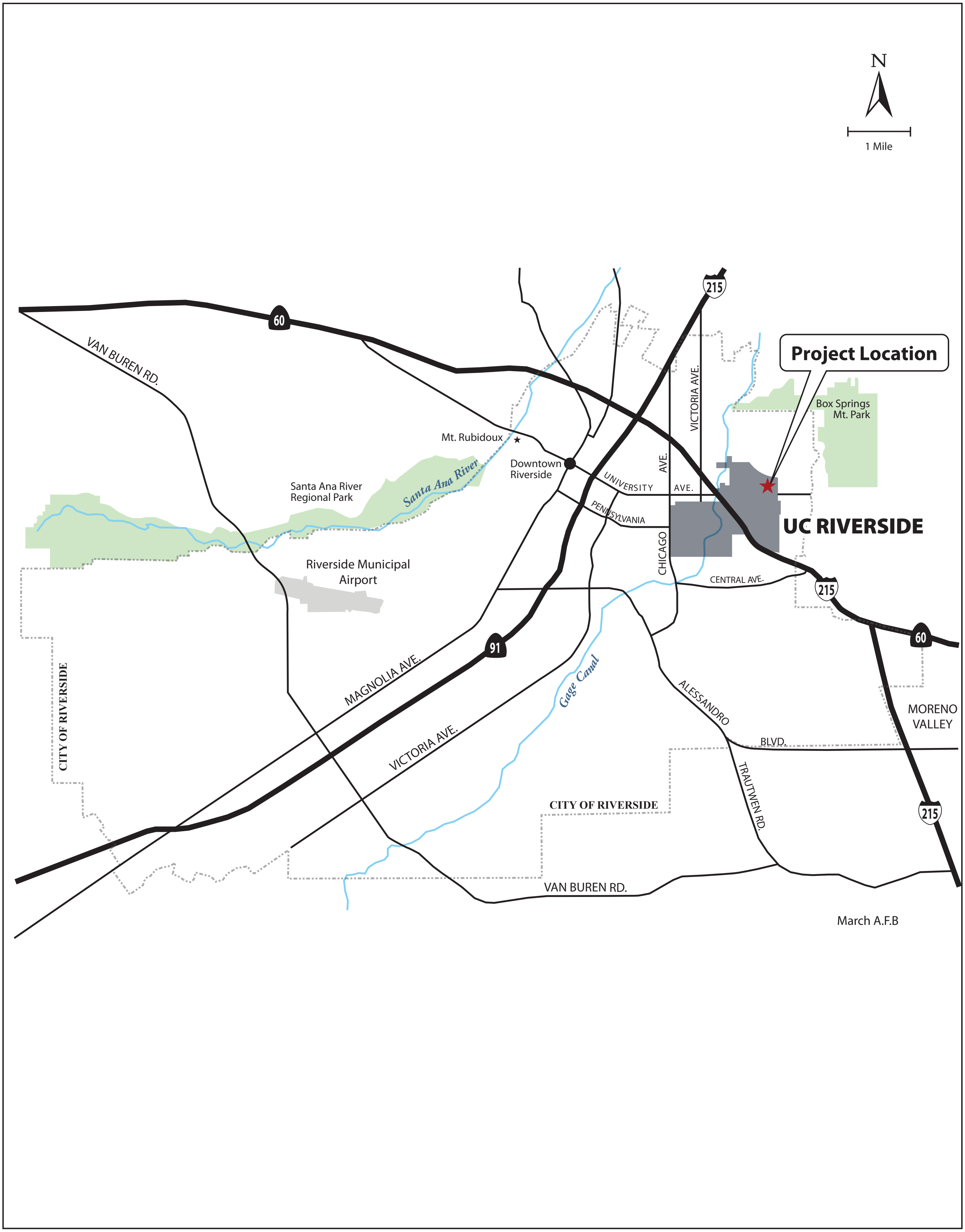


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Figure 1
Regional Location
UCR Glen Mor 2 Student Apartments

Graphics/Projects/00374.10_UCRGlenMor2/NOP (06-10) SS

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Figure 2
Project Setting
UCR Glen Mor 2 Student Apartments

September 23, 2010

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road
Banning, CA 92220

Dear Mr. Contreras,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

ICF INTERNATIONAL

September 23, 2010

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
PO BOX 86908
Los Angeles, CA 90086

Dear Mr. Dunlap,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director
35008 Pala-Temecula Rd.
PMB Box 445
Pala, CA 92059

Dear Shasta Gaughen,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being performed pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

ICF INTERNATIONAL

September 23, 2010

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
PO Box 391670
Anza, CA 92539

Dear Mr. Hamilton,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being performed pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

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If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Pechanga Cultural Resource Department
Anna Hoover, Cultural Analyst
PO Box 2183
Temecula, CA 92593

Dear Ms. Hoover,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

ICF INTERNATIONAL

September 23, 2010

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resource Center
PO Box 1477
Temecula, CA 92593

Dear Mr. Macarro,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being performed pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Santa Rosa Band of Mission Indians
John Marcus, Chairperson
PO BOX 609
Hemet, CA 92546

Dear Mr. Marcus,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being performed pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
PO BOX 693
San Gabriel, CA 91778

Dear Mr. Morales,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being performed pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

ICF INTERNATIONAL

September 23, 2010

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
PO Box 487
San Jacinto, CA 92581

Dear Mr. Ontiveros,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

UC Riverside filed a notice of preparation for the EIR in August 2010 and received a reply from the Native American Heritage Commission identifying several potentially interested groups that might have concerns or knowledge of cultural resources in the area. You were identified on that list, and we are contacting you to inform you of the proposed project and to request any information you have pertaining to cultural resources on the project site that you might be willing to share with UC Riverside.

If you have any information to share or if you would like to participate in the environmental review for this project, please respond to this letter so we can incorporate any relevant information into the EIR. As required by state law, all site data and other culturally sensitive information will not be released to the general public and will be kept strictly confidential.

If you have any questions or would like additional information, please feel free to contact me at your earliest convenience. Thank you very much for your assistance in this matter.

Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Willie J. Pink
48310 Pechanga Road
Temecula, CA 92592

Dear Mr. Pink,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

San Manuel Band of Mission Indians
James Ramos, Chairperson
26569 Community Center Drive
Highland, CA 92346

Dear Mr. Ramos,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

ICF INTERNATIONAL

September 23, 2010

Cahuilla Band of Indians
Luther Salgado, Sr., Chairperson
PO Box 391760
Anza, CA 92539

Dear Mr. Salgado,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Sincerely,

Michael R Bever, PhD, RPA
(858) 578-8964 x321
mbever@icfi.com

Enclosure: Location maps

September 23, 2010

Serrano Nation of Indians
Goldie Walker
6588 Valaria Drive
Highland, CA 92346

Dear Ms. Walker,

I am writing to inform you that the University of California, Riverside (UC Riverside), is preparing an Environmental Impact Report (EIR) for a project which proposes the construction of a student housing community on approximately 21 acres of University-owned property in the northeastern portion of campus. The project entails construction and long-term operation of five residential buildings, a food emporium, a resident services office, a community building, and an executive retreat center. The project would house 810 students in 232 apartment style units. The attached figures show the project area. The EIR is being prepared pursuant to the California Environmental Quality Act. A detailed project description and the initial study supporting ODC's scoping of the project EIR are available for viewing or downloading on the ODC website at http://odc.ucr.edu/ceqnotices.html.

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Enclosure: Location maps