

**FINAL**  
**INITIAL STUDY**  
**&**  
**MITIGATED NEGATIVE DECLARATION**

**Verano Place Apartments**  
**Unit Four Redevelopment**  
**Project**

UCI Project #996268  
State Clearinghouse #2010031090

**University of California, Irvine**  
**Office of Campus & Environmental Planning**

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May 18, 2010



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## PROJECT INFORMATION

**1. Project title:**

Verano Place Apartments Unit Four Redevelopment Project

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

University of California, Irvine  
Office of Campus & Environmental Planning  
750 University Tower  
Irvine, CA 92697-2325

**3. Contact person and phone number:**

Alex Marks, AICP, Associate Planner  
949.824.8692

**4. Project location:**

As shown on Exhibit 1 (page 3), the University of California, Irvine is located in south-central Orange County, about five miles inland from the Pacific Ocean. The proposed project site comprises about 17.40 acres of land developed as a student apartment complex adjacent the western edge of California Avenue, in the eastern part of the campus, as shown on Exhibit 2 (page 5).

**5. Project sponsor's name and address:**

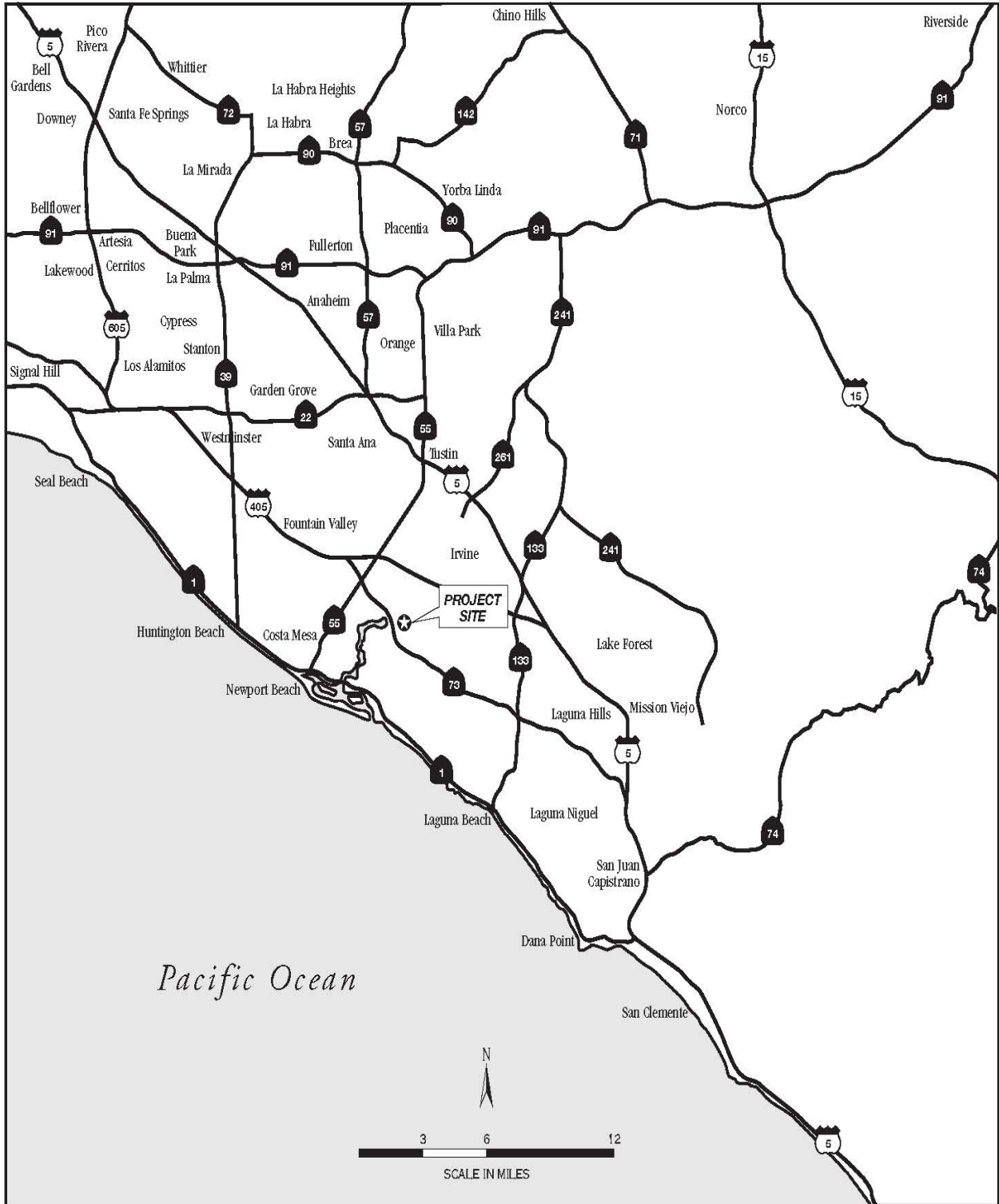
University of California, Irvine  
Office of Campus & Environmental Planning  
750 University Tower  
Irvine, CA 92697-2325

**6. Custodian of the administrative record for this project (if different from response to item 3 above):**

(See item 3)

**7. 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.)**

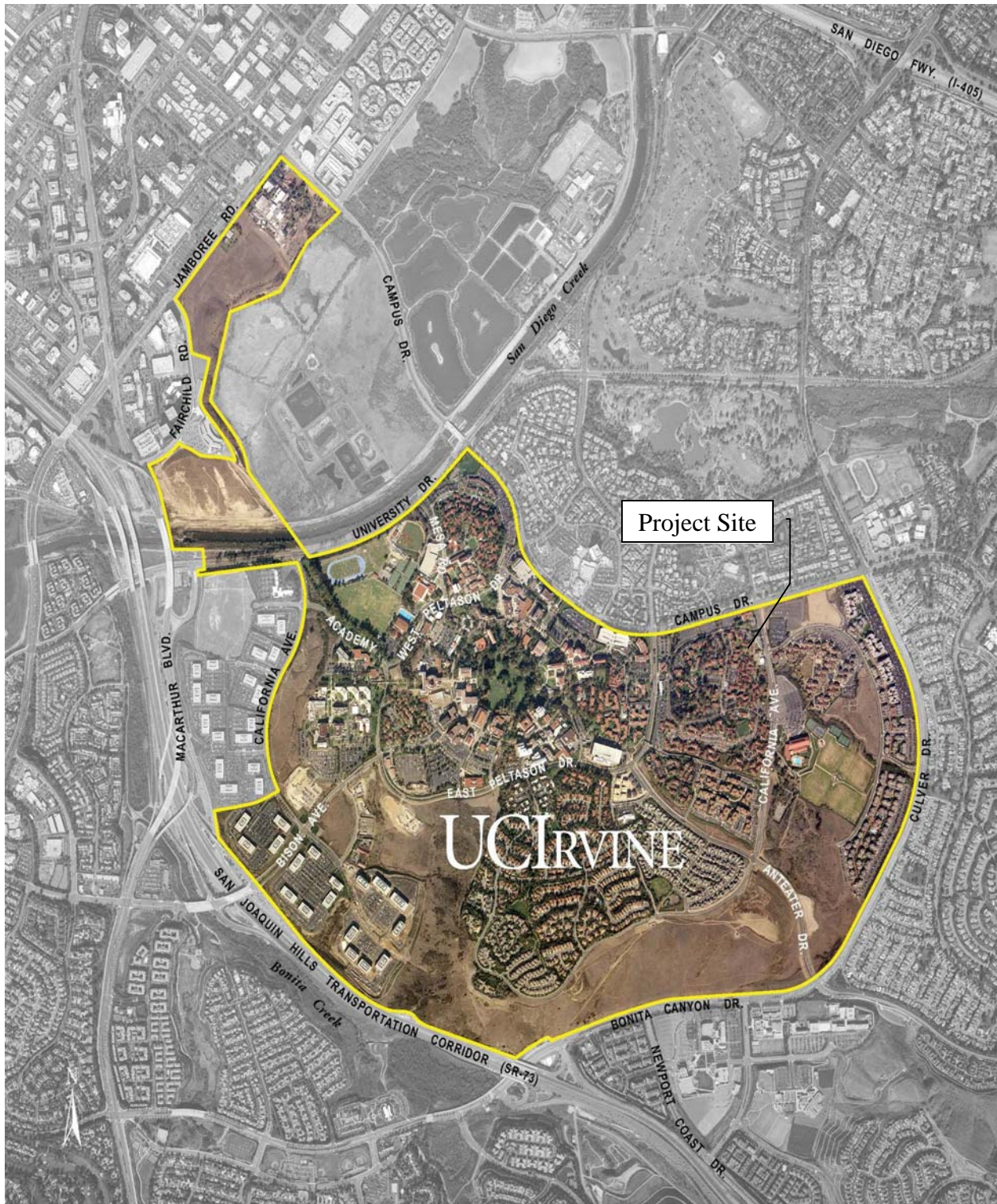
UCI 2007 Long Range Development Plan (LRDP) Final Environmental Impact Report (FEIR) (State Clearinghouse No. 2006071024), certified by the Regents of the University of California, November 2007. This document, including all four volumes, is available for public inspection at the Office of Campus & Environmental Planning, 750 University Tower, Irvine, CA 92697-2325.



Source: UCI January 2010



Exhibit 1  
Regional Location Map



Source: UCI January 2010



Exhibit 2  
UCI and Local Vicinity

Verano Place Apartments Unit Four Redevelopment Project  
University of California, Irvine





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## PROJECT DESCRIPTION AND LOCATION

### 1. Description of Project

The proposed project would replace the aging apartment buildings in the University of California, Irvine's (UCI) Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. Originally constructed in 1976, VPU-4 houses graduate students, students with children, and undergraduate students age 25 or older in 21 buildings each with ten 2-bedroom/1-bathroom apartments for a total capacity of approximately 400 student beds. The project site encompasses approximately 17.4 acres in UCI's East Campus Sector.

The replacement project would include approximately 225,000 gross square foot (GSF) of new student apartment buildings at a building height of four to six stories. The project would include approximately 200 apartment units at approximately 885 assignable square feet (ASF), to accommodate approximately 400 students. Each unit would include two-bedrooms, two-bathrooms, common living space, and a kitchen. The proposed project also includes an approximately 9,000 GSF community building with office, conference, and community rooms, a kitchen, restrooms, and other support uses, and demolition and replacement on site of existing child-care facilities and freestanding laundry buildings.

Site redevelopment would include demolition and replacement of the existing apartment buildings and surface parking (new spaces to accommodate residents and visitors). Existing site improvements including pedestrian paths, bike paths, landscaping, and site lighting would also be demolished and new improvements constructed as part of the project. The existing Verano Community Garden located adjacent California Avenue on the eastern edge of VPU-4 may be relocated within the project site.

VPU-4 would be implemented consistent with the University of California (UC) Policy on Sustainable Practices. The project would incorporate measures resulting in significant energy savings, construction waste reduction, recycled material use, and water conservation. Such features would include an overall energy efficiency that exceeds California Title 24 criteria by at least 20%. To achieve this goal, the project would include building features such as high-performance glazing, insulation and radiant barrier, high reflectance roofing materials, high efficiency natural gas water heaters, low flow hot-water faucets and showers, low flow shower heads, energy efficient lighting, Energy Control Systems, efficient exhaust fans, and high efficiency air conditioning equipment where applicable. Individual building component features will contribute to overall building annual energy savings, allowing the project to exceed the Code required minimum energy performance.

Exhibit 3 (page 11) illustrates the project's site boundary. The design/build project team selected by the University to design and construct this project will develop a final project design. Exhibit

4 (page 14) provides the conceptual elevations of the proposed 5-story apartment building option. Other buildings constructed in the project would be similar in character. The exterior finishes of all buildings constructed would be consistent with campus design standards and compatible with the adjacent Verano Place Units One, Two, Three, and Six, which would remain in place. Site lighting would be provided to meet University lighting standards using pole-mounted streetlight, parking lot lighting and pole-mounted and building-mounted area lighting.

Vehicle access to the redeveloped project site would occur from California Avenue on the east and East Peltason Drive on the west as depicted on Exhibit 3. These campus collector roads serve local streets within the project including Adobe Circle North, Adobe Circle South, and Verano Road. These local streets will provide access to project surface parking lots.

Utility infrastructure sufficient to serve the proposed project are available in the site vicinity and would be modified, upgraded, or relocated within the project areas as needed. Existing site stormwater drainage patterns would be maintained with site stormwater collected on site and conveyed to an existing 84-inch UCI storm drain, which conveys flows to an 84-inch City of Irvine storm drain under Campus Drive. In-line structural stormwater filtration or other Best Management Practices (BMPs) would be included in the project to satisfy water quality control standards established in the countywide Drainage Area Master Plan.

## **2. Project Objectives**

- To provide an adequate supply of quality affordable on-campus housing for graduate students, in support of Long Range Development Plan student housing goals;
- To contribute to fulfillment of the UCI's Graduate Housing Guarantee and recruitment/retention objectives;
- To improve efficiency of use of the University land dedicated to student housing;
- To Limit traffic impacts on neighboring communities and impacts on the local housing market by providing sufficient affordable on-campus housing for UCI students;
- To support UCI's teaching and research missions by providing students with an academic residential experience on campus.

## **3. Project Phasing/Construction Schedule**

As stated above, the proposed project would demolish and replace VPU-4's existing student apartment buildings, accessory structures, child-care facilities, surface parking, and community garden. Construction of the project is anticipated to commence in approximately September 2010 and be complete in approximately November 2014. Table 2-1 on the following page summarizes the project's proposed two-phase implementation schedule.

Table 2-1: Proposed Project Phasing

<b>Project Phasing Schedule</b>	<b>Project Activity</b>	<b>Student Beds Available</b>
<b>Phase I</b>		
August 2010	<ul style="list-style-type: none"> <li>• Final month of operation for 100% of original beds</li> </ul>	400
Sept 2010	<ul style="list-style-type: none"> <li>• Demolish approximately 200 beds.</li> <li>• Begin construction of new apartment buildings.</li> <li>• Continue operating approximately 200 beds.</li> </ul>	200
Sept 2012	<ul style="list-style-type: none"> <li>• Complete construction of all new buildings, accessory structures, and Phase I site improvements.</li> <li>• Occupation of 400 new beds.</li> <li>• Continue operating approximately 200 beds.</li> </ul>	600
<b>Phase II</b>		
Sept 2014	<ul style="list-style-type: none"> <li>• Demolish remaining pre-existing 200 original beds and complete Phase II site improvements.</li> </ul>	400

As Table 2-1 indicates, prior to the completion of Phase II and the demolition of the approximately 200 original beds, the project would temporarily increase the number of beds available in VPU-4 to 600. The project, including the temporary increase in the number of beds is consistent with the number of on-campus student beds analyzed in the LRDP FEIR, as described below in Section 5, Consistency with the LRDP.

The anticipated construction schedule includes an initial demolition phase of two months; site grading would be approximately one month, and construction approximately 24 months. The second demolition phase in 2014 would be approximately two months. The overall grading program would result in a general balance of cut and fill, and entail roughly 78,000 cubic yards (CY) of earthwork. One-half of the total square footage of the existing VPU-4 apartments, approximately 216,650 GSF, would be demolished during each project phase. Demolition of existing concrete paving (approximately 75,354 GSF), asphalt roadways and parking lots (approximately 120,302 GSF), and asphalt bike trails (approximately 16,689 GSF) would be split between the two construction phases. The order of demolition of existing VPU-4 apartment buildings, accessory structures, child-care centers, parking surfaces, site improvements, and community garden, and their subsequent reconstruction/replacement would be determined by the Design/Build Team in coordination with UCI. All residents of VPU-4 that are displaced by construction would be housed within other campus housing facilities as necessary. Depending

on the final project-phasing program, child-care programs may be accommodated within other buildings on-site or in the project vicinity to ensure the continuous provision of these services to the campus community.

#### **4. Surrounding Land Uses and Environmental Setting**

The project site is bordered on the east by California Avenue, north and south by Adobe Circle Road, and west by South Verano Road. The Arroyo Vista student housing facility and Anteater Recreation Center are located opposite the site on the eastern side of California Avenue. The American Heart Association and Puerta del Sol student apartments (currently under construction and scheduled to be completed and occupied in fall 2010) are located north of the site on Adobe Circle Road North. The Early Childhood Education Center is adjacent the project site's northeastern corner. Neighboring facilities across from the site along Adobe Circle South and South Verano Road include Verano Units One, Two, Three, and Six, the Extended Day Center, Children's Center, and Verano housing administrative offices. There are no rock outcroppings, water bodies, or other distinctive natural features on site; however, an approximately 300 linear foot drainage channel is located on the site's southeastern corner. The channel would be replaced with a storm drainpipe as part of this project. An aerial view of the project site and surrounding land uses is shown in Exhibit 5 (page 16). Ground level photographs of the project site and surroundings (taken in February 2010) are presented in Exhibits 7-11 (pages 20-28); a map showing photo locations is provided as Exhibit 6 (page 18).

#### **5. Consistency with the LRDP**

The project site is located within UCI's East Campus Sector, designated in the 2007 Long Range Development Plan (LRDP) for Student Housing. Permitted uses within this land use designation include student housing facilities, parking, child-care, pre-school, recreation facilities, community meeting space, and other residential support uses (LRDP pages 61-64). The proposed redevelopment of the site as described above with new student apartment and support uses is thus consistent with the LRDP Student Housing land use policies

The 2007 LRDP accommodates 12,610 student-housing beds in the East Campus (LRDP page 49). As stated above, the project would result in no net change to the number of student beds with the exception of a short-term increase of 200 student beds prior to the completion of Phase II. The project, including the short increase of 200 beds, would not exceed the total number of beds accommodated in the 2007 LRDP and analyzed in the LRDP Final Environmental Impact Report (FEIR).

#### **6. Discretionary Approval Authority And Other Public Agencies Whose Approval Is Required (E.G., Permits, Financing Approval, Or Participation Agreement.)**

As a public agency principally responsible for approving or carrying out the proposed project,

the University of California is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental document and approving the proposed project. Pursuant to authority delegated from the Board of Regents of the University of California (The Regents), the UC Irvine Chancellor would consider approval of the proposed project in June 2010.



Source: UCI January 2010



Exhibit 3  
Project Site Boundary

Verano Place Apartments Unit Four Redevelopment Project  
University of California, Irvine



Source: UCI January 2010

Exhibit 4  
Five Story Apartment Building Option Conceptual Elevation

Verano Place Apartments Unit Four Redevelopment Project  
University of California, Irvine



Source: UCI January 2010



Exhibit 5  
Project Site and Adjacent Land Use

Verano Place Apartments Unit Four Redevelopment Project  
University of California, Irvine





Source: UCI January 2010



Exhibit 6  
Site Photographs Location Key

Verano Place Apartments Unit Four Redevelopment Project  
University of California, Irvine



1. South into project site along South Verano Road



2. South into project site from Adobe Circle Road South



3. Northern site boundary along Adobe Circle North towards the west



4. Southwest into project site from Adobe Circle Road South



5. View south into project site showing The Nest child care center in foreground



6. Eastern site boundary along California Avenue towards the north



7. Northwest towards project site from California Avenue



8. Southern site boundary along Adobe Circle South towards the west



9. Southern site boundary along Adobe Circle South towards the east



10. Northeast towards the project site from South Verano Road



11. Western site boundary along South Verano Road towards the north



12. Northeast toward the project site from South Verano Road



13. Western site boundary along South Verano Road towards the north



14. Western site boundary along South Verano Road towards the south

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

	Aesthetics		Air Quality		Biological Resources
	Cultural Resources		Geology/Soils		Hazards/Hazardous Materials
	Hydrology/Water Quality		Land Use/Planning		Noise
	Population/Housing		Public Services		Recreation
	Transportation/Traffic		Utilities/Service Systems		Mandatory Findings of Significance

**DETERMINATION:**

On the basis of the initial evaluation that follows:

	I find that the proposed project WOULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
✓	I find that although the proposed project could have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

[Handwritten Signature]

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Signature

3/22/10

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Date

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Printed Name

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For

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## EVALUATION OF ENVIRONMENTAL IMPACTS

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

- (A) “Potentially Significant Impact” is appropriate if there is substantial evidence that the project’s effect may be significant. If there are one or more “Potentially Significant Impacts” a Project EIR will be prepared.
  
- (B) “Project Impact Adequately Addressed in LRDP EIR” applies where the potential impacts of the proposed project were adequately addressed in the LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross references (including section/page numbers) the relevant analysis in the LRDP EIR.
  
- (C) “Less Than Significant With Project-level Mitigation Incorporated” applies where the incorporation of project specific mitigation measures will reduce an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” All project-level mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less than significant level.
  
- (D) “Less Than Significant Impact” applies where the project will not result in any significant effects. The effects may or may not have been discussed in the LRDP Program EIR. The project impact is less than significant without the incorporation of LRDP or Project-level mitigation.
  
- (E) “No Impact” applies where a project would not result in any impact in the category or the category does not apply. Information is provided to show that the impact does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer may be based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).



**1. AESTHETICS**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
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?		✓			

**1.a) Scenic Vistas: No Impact**

---

**Relevant Elements of Project**

As stated in the Project Description, the proposed project site is an existing student housing facility located in the UCI campus interior, surrounded by other student housing, recreation facilities, offices, and child-care centers. The LRDP FEIR did not identify any scenic vistas on the campus (LRDP FEIR VI page 4.1-6); as such, no scenic vistas are located on or adjacent to the project site.

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**Discussion of Potential Project Impacts**

Since the LRDP FEIR did not identify any scenic vistas on the campus this project would have no impact on such resources.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

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**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

**1.b) Scenic Resources Within a State Scenic Highway: No Impact**

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**Relevant Elements of Project**

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As stated in the Project Description, the proposed project site is an existing student housing facility located in the UCI campus interior, surrounded by other student housing, recreation facilities, offices, and child-care centers. The project site is not located near a State scenic highway.

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**Discussion of Potential Project Impacts**

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The IS for the LRDP indicated that development on the campus, including the project site, would not substantially damage scenic resources such as trees, rock outcroppings, and historic buildings within a State scenic highway; therefore, the issue was not addressed in the LRDP FEIR (LRDP FEIR page 4.1-18). No changes have occurred to the campus or the project site with respect to scenic resources within a state scenic highway since the LRDP FEIR's certification. Thus, as the LRDP FEIR did not identify any scenic resources within a state scenic highway on the campus, including the project site, no impact on such resources would occur.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

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**1.c) Visual Character: Project Impact Adequately Addressed in LRDP EIR**

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**Relevant Elements of Project**

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The project site is located within the highly urbanized campus interior, blocked from off-campus views by development along Campus Drive, and as stated in the Project Description the site is already developed as a student housing facility.

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**Discussion of Potential Project Impacts**

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The LRDP FEIR concluded that because the existing Vista del Campo and Vista del Campo Norte student apartments occupy the majority of the eastern edge of the campus designated for development, the viewshed over the East Campus would not be significantly impacted by future 2007 LRDP development, such as the project. The LRDP FEIR determined that much of the viewshed in the East Campus would be limited by existing landscape buffers or obstructed by existing development. The East Campus viewshed was not considered a visually sensitive area and impacts to the visual quality or character would be less than significant (LRDP FEIR page 4.1-8). Additionally, the project design, as stated in the Project Description, would be consistent with campus design standards and compatible with adjacent campus developments.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**1.d) Light or Glare: Project Impact Adequately Addressed in LRDP EIR**

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**Relevant Elements of Project**

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The project site is an existing student-housing complex, which contains sources of light including building lighting, site lighting, parking lot lighting, and street lighting. As described in the project description, various lighting sources would be included in the project within the new apartment buildings, accessory structures, parking lots, landscaped areas, and other site improvements and would meet University lighting level standards.

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## **Discussion of Potential Project Impacts**

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The LRDP FEIR concluded that implementation of the 2007 LRDP would result in the development of new structures that would have the potential to increase sources of light from exterior building illumination, parking lots, and landscaped areas and glare from reflective building surfaces or vehicle headlights. The proposed project would include both interior and exterior light sources. The LRDP FEIR also concluded that campus development projects implemented under the LRDP could result in localized distraction or nuisance by interfering with daytime visibility (LRDP FEIR page 4.1-16).

The project would comply with the restrictions set forth in LRDP FEIR Mitigation Measures (MM) Aes-2A and Aes-2B and as stated in the Project Description University lighting level standards in order to reduce potential significant impacts associated with daytime glare and nighttime lighting and headlights to a less than significant level. Measure 2A requires the use of non-reflective materials for lighting fixtures, low-reflectance windows, other glazing, and exterior surfaces that could otherwise produce glare and would be enforced through project design specifications, which state that non-reflective glass must be used on all exterior surfaces, and that no reflective surfaces, treatments or coatings would be permitted. Measure Aes-2B requires pre-construction approval of an outdoor lighting plan for the project that includes lighting design, shielding, orientation, and intensity limitations to prevent light spillage off site and avoid off-site glare impacts. Compliance with these measures would ensure that this project does not produce significant light or glare impacts (LRDP FEIR VI page 4.1-16/17).

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## **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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**Aes-2A:** Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (e.g., double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare.

**Aes-2B:** Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with UCI's Campus Standards and Design Criteria for outdoor lighting, the plan shall include, but not be limited to, the following design features:

- i. Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light sensitive receptors;
- ii. Appropriate intensity of lighting to provide campus safety and security while

- minimizing light pollution and energy consumption; and
- iii. Shielding of direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping

**Significance Determination after LRDP EIR Mitigation Measures**

Less than significant

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Less than significant

**2. Air Quality**

	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Issues					
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?					✓

f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				✓	
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?					✓

## 2.a) AQMP Consistency: Project Impact Adequately Addressed in LRDP EIR

### Relevant Elements of Project

The VPU-4 housing facility and the entire UCI campus are located in the South Coast Air Basin (SCAB), a region covering Los Angeles, Orange, San Bernardino and western Riverside Counties. Air quality in the SCAB is governed by a regional air quality management plan (AQMP), based on population projections developed by the Department of Finance (DOF) for California on a county-by-county basis, which is administered by the South Coast Air Quality Management District (SCAQMD) to achieve compliance with state and national air quality standards. The Southern California Association of Governments (SCAG) uses the projections to determine regional growth and related vehicular transportation patterns. The SCAQMD bases its predictions of future criteria pollutants, including mobile and area source emissions on these population projections. Likewise, UCI's long term enrollment planning is based on population growth projections from DOF. As a result, the 2007 AQMP accounts for future growth within the Educational Services Sector (Sector 82) at the county level, which includes all educational facilities within Orange County (LRDP FEIR VI 4.2-11). As stated in the Project Description, although the proposed project would temporarily increase the number of student beds available on the campus prior to completion of Phase II, it would not result in more student beds or greater population than analyzed in the LRDP FEIR.

### Discussion of Potential Project Impacts

Because the AQMP is based on population growth projections and the 2007 LRDP is consistent with SCAG projections for regional growth, implementation of the 2007 LRDP was found to not conflict with, or obstruct implementation of the AQMP (LRDP FEIR VI page 4.2-11). As the proposed project is consistent with the LRDP, it would thus not conflict with implementation of the 2007 AQMP.

### Applicable LRDP EIR Mitigation Measures Incorporated in Project

None required

### Significance Determination after LRDP EIR Mitigation Measures

Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

**2.b) Air Quality Standards: Project Impact Adequately Addressed in LRDP EIR**

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**Relevant Elements of Project**

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The LRDP FEIR states that construction activities associated with implementation of the LRDP, including those associated with the proposed project, would result in temporary increases in air pollutant emissions generated in the form of fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) and exhaust (NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and PM<sub>2.5</sub>) (LRDP FEIR VI page 4.2-12 ) emissions. As noted in the Project Description, the anticipated construction schedule includes an initial demolition phase of two months; site grading would be approximately one month, and construction approximately 24 months. The second demolition phase anticipated to occur in 2014 would be approximately two months. The order of demolition of the existing VPU-4 complex, as stated in the Project Description, would be determined by the Design/Build Team in coordination with UCI.

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**Discussion of Potential Project Impacts**

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The LRDP FEIR concluded that although construction on the campus would result in temporary adverse impacts to the ambient air quality, actual project related emissions may be lower and impacts would be short term and dependent on construction schedules and level of activity on a maximum daily basis (LRDP FEIR VI page 4.2-14). The operational impacts associated with the 2007 LRDP would involve incremental emissions of air pollutants (NO<sub>x</sub>, VOC, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) resulting from three emission source categories: area, stationary, and vehicular sources (LRDP FEIR VI page 4.2-15).

Consistent with LRDP FEIR MM Air-2A, an air quality assessment (see Appendix A) was prepared in conjunction with this environmental review to assess the project's anticipated construction and operation related emissions. The assessment was prepared utilizing software recommended by the California Air Resources Board (URBEMIS 2007 v. 9.2.4) and assumed implementation of construction control measures specified in LRDP FEIR MM Air-2B, which provide significant reductions in emission levels compared to levels without such measures (LRDP FEIR VI pages 4.12-18 to 20) and SCAQMD Rule 403 regarding site watering. The air quality assessment concluded that construction of the project, with implementation of Rule 403 and LRDP FEIR MM Air-2B, would not result in any significant short term construction related impacts and no project specific mitigation measures are required. The air quality assessment

also modeled emissions associated with the project's anticipated long-term operations. Results of this modeling determined that the operation of the project would not result in any significant long-term air quality impacts (Appendix A page 40).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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***Air-2A:*** During project level environmental review of future projects that implement the 2007 LRDP and that could result in a significant air quality impact from construction emissions, UCI shall retain a qualified air quality specialist to prepare an air quality assessment of the anticipated project-related construction emissions. The assessment shall quantify the project's estimated construction emissions with and without implementation of applicable Best Management Practices (BMPs) listed in mitigation measure Air-2B and compare them with established SCAQMD significance thresholds. In addition, the air quality assessment shall include analysis of temporal phasing as a means of reducing construction emissions.

If the estimated construction emissions are under SCAQMD's significance thresholds or if mitigation measure Air-2B would reduce emissions to below established thresholds, then the project's direct impact to air quality would be less than significant and no additional mitigation would be required. If the project's construction emissions would exceed established thresholds with implementation of applicable BMPs listed in mitigation measure Air-2B, and no additional mitigation to reduce the emissions below the threshold is feasible, then the project's direct impact to air quality would remain significant following mitigation.

***Air-2B:*** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall ensure that the project construction contract includes a construction emissions mitigation plan, including measures compliant with SCAQMD Rule 403 (Fugitive Dust), to be implemented and supervised by the on-site construction supervisor, which shall include, but not be limited to, the following BMPs:

- i. During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, non-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor.
- ii. During windy days when fugitive dust can be observed leaving the construction site, additional applications of water shall be required at a rate to be determined by the onsite construction supervisor.
- iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities.
- iv. Areas of the construction site that will remain inactive for three months or



- longer following clearing, grubbing and/or grading shall receive appropriate BMP treatments (e.g., revegetation, mulching, covering with tarps, etc.) to prevent fugitive dust generation.
- v. All exposed soil or material stockpiles that will not be used within 3 days shall be enclosed, covered, or watered twice daily, or shall be stabilized with approved nontoxic chemical soil binders at a rate to be determined by the on-site construction supervisor.
  - vi. Unpaved access roads shall be stabilized via frequent watering, non-toxic chemical stabilization, temporary paving, or equivalent measures at a rate to be determined by the on-site construction supervisor.
  - vii. Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered.
  - viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites.
  - ix. Where visible soil material is tracked onto adjacent public paved roads, the paved roads shall be swept and debris shall be returned to the construction site or transported off site for disposal.
  - x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.
  - xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable.
  - xii. Heavy duty diesel trucks and gasoline-powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.
  - xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.
  - xiv. Heavy construction equipment shall use low NOx diesel fuel to the extent that it is readily available at the time of construction.
  - xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines.
  - xvi. The construction contractor shall develop a construction traffic management plan that includes the following:
    - Scheduling heavy-duty truck deliveries to avoid peak traffic periods
    - Consolidating truck deliveries
  - xvii. Where possible, the construction contractor shall provide a lunch shuttle or

on-site lunch service for construction workers.

- xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible.
- xix. Project constructions plans and specifications will include a requirement to define and implement a work program that would limit the emissions of reactive organic gases (ROG's) during the application of architectural coatings to the extent necessary to keep total daily ROG's for each project to below 75 pounds per day, or the current SCAQMD threshold, throughout that period of construction activity to the extent feasible. The specific program may include any combination of restrictions on the types of paints and coatings, application methods, and the amount of surface area coated as determined by the contractor.
- xx. The construction contractor shall maintain signage along the construction perimeter with the name and telephone number of the individual in charge of implementing the construction emissions mitigation plan, and with the telephone number of the SCAQMD's complaint line. The contractor's representative shall maintain a log of any public complaints and corrective actions taken to resolve complaints.

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### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than Significant

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### **Additional Project-Level Mitigation Measures**

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None Required

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### **Significance Determination after All Mitigation**

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Less than Significant

## **2.c) Criteria Pollutants: Project Impact Adequately Addressed in LRDP EIR**

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### **Relevant Elements of Project**

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As noted in the 2007 LRDP FEIR (VI page 4.2-2), the air basin in which UCI is located, including the project site, is currently in non-attainment status with respect to California standards for ozone (O<sub>3</sub>) and visibility-reducing particulates (PM<sub>10</sub>), and non-attainment with respect to federal standards for ozone, carbon monoxide (CO), PM<sub>10</sub> and PM<sub>2.5</sub>.

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**Discussion of Potential Project Impacts**

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As discussed in the preceding response, with implementation of MMs Air-2A and 2B the project's construction related emissions would not exceed SCAQMD thresholds and unavoidable significant impacts would not occur (Appendix A pages 38-40).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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Air-2A and Air-2B, included in the response to item 2b

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**Significance Determination after LRDP EIR Mitigation Measures**

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Less than Significant

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Less than Significant

**2.d) Sensitive Receptors: Project Impact Adequately Addressed in LRDP EIR**

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**Relevant Elements of Project**

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A health risk assessment (HRA) was prepared for the LRDP FEIR to identify risks associated with increased development anticipated to occur under the 2007 LRDP, including the proposed project. The HRA included toxic air contaminant emissions associated with laboratory operations, cogeneration operations, natural gas and diesel operation of medium and large boilers, gasoline storage and recovery, and diesel-fueled emergency engines and generators. Additionally, the LRDP FEIR included an analysis of carbon monoxide impacts associated with vehicular traffic (LRDP FEIR VI pages 4.2-21/24).

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**Discussion of Potential Project Impacts**

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As stated in response to Issue 2a, the project would not result in construction or operational related air quality related impacts. The LRDP FEIR determined that implementation of the LRDP (including the VPU-4 project) would not exceed significance standards regarding the probability of a maximally exposed individual contracting cancer; exposure of ground-level concentrations of non-carcinogenic toxic air contaminants that would result in a hazard index greater than one for the maximally exposed individual; a violation of National Ambient Air Quality Standards or California Ambient Air Quality Standards for carbon monoxide; or exposure to substantial carbon monoxide concentrations associated with vehicle traffic. Thus, no mitigation measures are required (LRDP FEIR VI pages 4.2-26).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Less than Significant

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**2.e) Objectionable Odors: No Impact**

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**Relevant Elements of Project**

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Once inhabited the proposed project would not create any unusual or objectionable odors. The LRDP FEIR identifies that odors would be generated from vehicles and/or tailpipe exhaust emissions during construction and operational phases of the 2007 LRDP (LRDP FEIR VI page 4.2-26).

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**Discussion of Potential Project Impacts**

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The LRDP FEIR stated that the UCI campus is not considered a land use that would generate significant odor impacts and that any odors generated would be temporary in nature and concluded that implementation of the 2007 LRDP, including the project, would not create objectionable odors affecting a substantial number of people (LRDP FEIR VI pages 4.2-26/27).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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Not applicable

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**Significance Determination after All Mitigation**

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Not applicable

**2.f-g) Greenhouse Gas Emissions: Less Than Significant**

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**Relevant Elements of Project**

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Implementation of the proposed project, like all other projects implemented under the 2007 LRDP, would increase greenhouse gas (GHG) emissions associated with the campus as a result of project construction. Unlike many projects, however, the proposed project would not increase emissions associated with operation of the project because the project would replace existing housing. A greenhouse gas assessment (GHGA) was completed as a component of the air quality analysis for the VPU-4 project (See Appendix B), which evaluated the project's construction and operational related GHG emissions. The assessment notes that motor vehicles (including construction equipment) would be the primary source of GHG emissions generated by the proposed project. Other emissions from the project would be generated from fuel combustion for space and water heating, as well as off-site GHG emissions resulting from the generation of electricity consumed by the project (Appendix B pages 25 & 28). GHGs emitted from these sources would include carbon dioxide, nitrous oxide, hydrofluorocarbons, ozone, and aerosols (LRDP FEIR VI page 5-8).

As stated in the Project Description, the project would be constructed consistent with the University's Policy on Sustainable Practices (the "Policy"). The GHGA confirms that compliance with the Policy would minimize GHG emissions associated with the operation of the project and would ensure that the project not interfere with California's ability to achieve its GHG reduction requirements (Appendix B pages 30/31). Measures from the Policy incorporated into the project would result in significant energy savings, construction waste reductions, recycled material use, and water conservation. Such features, as described in the Project Description, would include an overall energy efficiency that would exceed the standards of California Title 24 criteria by at least 20%. To achieve this goal, the Design Builder would include building features such as high-performance glazing, insulation and radiant barrier, high reflectance roofing materials, high efficiency natural gas water heaters, low flow hot-water faucets and showers, low flow shower heads, energy efficient lighting, Energy Control Systems, efficient exhaust fans, and high efficiency air conditioning equipment where applicable. Individual building component features will contribute to overall building annual energy savings, allowing the project to exceed the Code required minimum energy performance. For information on Title 24 energy performance the following website should be consulted: <http://www.energy.ca.gov/title24/>.

Consistent with UC Policy, in June 2009 UCI adopted a climate action and sustainability plan entitled "Achieving Net Zero: Climate Change & Sustainability." The goals presented in the

plan include the university achieving 2000 GHG emissions levels by 2012, 1990 GHG emissions levels by 2020, and 80% below 1990 GHG emissions levels by 2050 with a commitment to achieve climate neutrality as soon as possible. This commitment goes beyond the goals of AB 32 and the Governor's Executive Order S 3 05, both of which set goals to achieve 1990 levels of GHG emissions by 2020. The University of California is also a signatory of the American College and University Presidents' Climate Commitment, which requires development of a comprehensive plan to achieve climate neutrality as soon as possible.

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**Discussion of Potential Project Impacts**

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The GHGA prepared for the project calculated the total anticipated daily construction-related CO<sub>2</sub> emissions. The project's total construction CO<sub>2</sub> emissions are set forth in Table 4. Annual construction emissions would be slightly less than half of the total emissions as construction is projected to occur over a 2.25-year period (Appendix A.2 page 28). The GHGA analysis indicates that there would be no difference in operational emissions with and without the project. The project's total estimated emissions in 2014, after commencement of Phase 2 construction and the removal of the remaining existing buildings on the project site, are set forth in Table 6. As shown in that table, the project is estimated to increase CO<sub>2</sub> emissions by 59.4 metric tons per year, substantially less than the SCAQMD suggested significance factor of 3,000 metric tons per year (Appendix A.2 page 29). Thus, the GHGA concluded that the project would not result in a significant impact due to GHG emissions and no mitigation measures are required (Appendix A.2 page 30).

As noted above, the proposed project is not expected to generate enough GHGs individually to influence global climate change. Accordingly, also stated above, the GHGA concluded that the project would not result in a significant impact due to GHG emissions and no mitigation measures are required. Combined with all other sources of GHGs associated with implementation of the 2007 LRDP, the proposed project would incrementally contribute to cumulative effects on global climate change resulting from the production of GHG emissions (LRDP FEIR VI pages 5-8/9); however, it would not result in new or substantially more severe significant sources of GHGs than anticipated in the LRDP FEIR nor interfere with California's ability to achieve its GHG reduction requirements (Appendix A.2 page 31). As such, the Project's contribution to the existing significant cumulative effects associated with global climate change would not be cumulatively considerable.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable






**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**3. BIOLOGICAL RESOURCES**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
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 CA 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?					
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### 3.a) Species Impacts: No Impact

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#### Relevant Elements of Project

As explained in the Project Description, the project site is located in the UCI East Campus planning sector and the site is already developed with student housing and associated uses.

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#### Discussion of Potential Project Impacts

In order to estimate direct impacts, areas anticipated for development under the 2007 LRDP were compared to mapped biological resources, as shown in Figures 4.3-2A through 4.3-2D in the LRDP FEIR. Future growth anticipated in previously developed areas of the campus, including the project site, is not depicted on these figures, as there would be no direct biological resource impacts (LRDP FEIR VI page 4.3-35). The project would comply with applicable federal and state regulations pertaining to construction during the nesting season; therefore, no impacts would occur to nesting birds.

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#### Applicable LRDP EIR Mitigation Measures Incorporated in Project

Not required

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#### Significance Determination after LRDP EIR Mitigation Measures

Not applicable

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#### Additional Project-Level Mitigation Measures

None required

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#### Significance Determination after All Mitigation

Not applicable

### 3.b) Riparian Habitat or Other Sensitive Natural Community: Project Impact Adequately Addressed in LRDP EIR

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#### Relevant Elements of Project

As noted in the Project Description, the project would fill an approximately 300-foot linear drainage channel located in the southeastern corner of the site. The feature would be replaced with a pipe located in approximately the same location.



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## **Discussion of Potential Project Impacts**

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Preliminary biological surveying, pursuant to LRDP FEIR MM Bio-3A, identified herbaceous wetland species within the drainage feature noted above. As stated in 3a, future campus growth anticipated in developed or urbanized portions of the campus, including the project site, would have no direct biological resource impacts (LRDP FEIR VI page 4.3-35). The LRDP FEIR states that because herbaceous wetlands are not a “covered” habitat in the Natural Communities Conservation Plan/Habitat Conservation Plan for the County of Orange Central and Coastal sub-regions direct impacts to these resources would be potentially significant, which would be reduced to a less than significant level with implementation of LRDP FEIR MMs Bio-3A through 3C and Bio-4A. Thus, as directed by LRDP FEIR MM Bio-3C a jurisdictional delineation shall be prepared pursuant to LRDP FEIR MM Bio-4A to determine if regulatory permits would be required to fill the feature. With implementation of Bio-3C and 4A the project’s impacts would be less than significant (LRDP FEIR VI page 4.3-44). Although, the project’s impacts to herbaceous wetlands would result in a cumulatively considerable contribution to a significant cumulative impact the impact as concluded by the LRDP FEIR would be mitigated via implementation of the measures described above (LRDP FEIR VI page 4.3-51).

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## **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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- Bio-3A** For future projects that implement the 2007 LRDP and are located on sites containing mule fat scrub or herbaceous wetland habitats, UCI shall retain a qualified biologist to conduct a survey of these habitats. If project-level surveys determine that mule fat scrub riparian habitat and/or herbaceous wetland habitat may be impacted by the project, then mitigation measures Bio-3B and 3C shall be implemented.
- Bio-3B** For future projects that implement the 2007 LRDP and could impact mule fat scrub riparian habitat and/or herbaceous wetland habitats as determined by mitigation measure Bio-3A, design features shall be considered to avoid and/or minimize direct impacts to these sensitive vegetation communities, to the extent feasible. If it is not feasible to avoid these impacts, then mitigation measure Bio-3C shall be implemented.
- Bio-3C** For future projects that implement the 2007 LRDP and would impact mule fat scrub riparian habitat and/or herbaceous wetland habitat, if these areas contain jurisdictional wetlands, all necessary regulatory permits shall be obtained and impacts shall be mitigated through implementation of Mitigation Measure Bio 4A. If no jurisdictional wetlands are present, impacts to mule fat scrub riparian habitat and/or herbaceous wetland habitat of greater than 0.1 acre shall be mitigated at ratios of 1:1 through habitat creation, restoration, or enhancement. Mitigation shall occur within dedicated
-

campus open space areas where feasible, or at off campus locations if on-site mitigation is not feasible. A qualified biologist shall be retained to assist in preparation, implementation, and monitoring of a habitat restoration plan, identifying the site preparation and installation requirements, establishment, monitoring, and long term management of the mitigation areas. Impacts to less than 0.1 acre of these habitat types, where no jurisdictional wetlands are present, would not require mitigation.

**Bio-4A** For future projects that implement the 2007 LRDP and are located on sites containing (or within 50 feet of) wetlands or other jurisdictional areas, or on sites containing (or within 25 feet of) a natural drainage course, UCI shall retain a qualified biologist to prepare a jurisdictional delineation. The jurisdictional delineation shall identify the presence of any areas that are subject to USACE, CDFG, or RWQCB jurisdiction and the potential for the project to affect them. If there is potential for the project to affect jurisdictional areas all necessary regulatory permits shall be obtained and impacts shall be avoided or mitigated through implementation of mitigation measures established through consultation with regulatory agencies and as specified in the final regulatory permits and conditions.

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Less than significant

### **3.c) Federally Protected Wetlands: Project Impact Adequately Addressed in LRDP EIR**

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#### **Relevant Elements of Project**

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As stated in the previous section, an approximately 300 foot linear drainage channel is located in the southeastern corner of the site adjacent California Avenue.

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#### **Discussion of Potential Project Impacts**

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The LRDP FEIR determined that jurisdictional delineations would be required for future projects that would impact areas of potential jurisdiction (LRDP FEIR VI page 4.3-46). As directed by LRDP FEIR MM Bio-4A a jurisdictional delineation shall be prepared to determine if the feature is subject to agency jurisdiction. With implementation of Bio-4A the project's impacts to

federally protected wetlands and other jurisdictional areas would be less than significant (LRDP FEIR VI page 4.3-46).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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Bio-4A as provided in response 3.b

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Less than significant

**3.d) Wildlife Corridors: No Impact**

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**Relevant Elements of Project**

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The 2007 LRDP FEIR determined that because the campus, including the project site, is bordered by off campus mixed use and residential areas there are limited wildlife movement corridors in the vicinity (LRDP FEIR VI page 4.3-48).

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**Discussion of Potential Project Impacts**

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Implementation of the 2007 LRDP was determined to not interfere with wildlife corridors or impede movement by native species (LRDP FEIR 4.3-48). Therefore, the project would have no impacts on wildlife corridors, nursery sites, or migratory fish resources.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**3.e) Conflict with Applicable Policies: No Impact**

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**Relevant Elements of Project**

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Other than as discussed above in 3.b, no LRDP, State, or federal policies for protection of biological resources apply to the East Campus or the project site.

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**Discussion of Potential Project Impacts**

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There would be no conflict with any biological protection policies, because none applies to this part of the campus.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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No mitigation measures are required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**3.f) Conflict with an Applicable Habitat Plan: No Impact**

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**Relevant Elements of Project**

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The East Campus Planning Sector is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat conservation plan.

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**Discussion of Potential Project Impacts**

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There would be no conflict with any biological protection policies, because none applies to this part of the campus.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**4. CULTURAL RESOURCES**

	(A)	(B)	(C)	(D)	(E)
Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					✓

**4.a) Historical Resources: No Impact**

**Relevant Elements of Project**

Cultural resources investigations conducted for previous LRDPs and for the 2007 LRDP FEIR did not find any historical resources on or adjacent to the project site. A comprehensive Historic Resources Assessment was performed at UCI in 1989, which identified five areas of potential historical significance (LRDP FEIR VI page 4.4-5). Four of these sites were determined not to have historical significance and the fifth, the UCI Ranch Building Complex, although also

located off California Avenue in the East Campus is approximately 600 feet south of the project site and would not be affected by the project.

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**Discussion of Potential Project Impacts**

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No historical resources exist on or adjacent to the project site; therefore, this project would not result in impacts to historical resources.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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No impact

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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No impact

**4.b) Archaeological Resources: Project Impact Adequately Addressed in LRDP EIR.**

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**Relevant Elements of Project**

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Recorded prehistoric resources located within the UCI campus are summarized in 2007 LRDP FEIR Table 4.4-1. According to the table, two resources were discovered in the East Campus and their data have been recorded (LRDP FEIR VI page 4.4-4).

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**Discussion of Potential Project Impacts**

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Although the site is currently developed, earth-moving activities could possibly uncover previously undetected archaeological remains associated with prehistoric cultures. A loss of a significant archaeological resource could result if such materials are not properly identified. Implementation of grading monitoring by a qualified archaeologist, as required by LRDP MM Cul-1C would avoid significant impacts to archaeological resources (LRDP FEIR VI page 4.4-14).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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***Cul-1C*** Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally-

affiliated Native American) to monitor these activities. In the event of an unexpected archeological discovery during grading, the on-site construction supervisor shall redirect work away from the location of the archeological find. A qualified archaeologist shall oversee the evaluation and recovery of archeological resources, in accordance with the procedures listed below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If an archeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- i. Perform appropriate technical analyses;
- ii. File any resulting reports with South Coastal Information Center; and
- iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Less than significant

#### **4.c) Paleontological Resources: Project Impact Adequately Addressed in LRDP EIR.**

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#### **Relevant Elements of Project**

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Paleontological investigations conducted for UCI in 1988 determined that the Topanga Formation geologic units under the campus are considered to be of high paleontological sensitivity for vertebrate and invertebrate fossils. As depicted on LRDP FEIR Figure 4.4-1, the project site is located within an area of the campus that is regionally considered to be of low to moderate sensitivity for vertebrate and invertebrate fossils (LRDP FEIR VI pages 4.4-19/20).

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#### **Discussion of Potential Project Impacts**

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According to the 2007 LRDP FEIR, development that occurs from implementation of the 2007 LRDP, including the proposed project, which involves earthwork, would have a significant impact on paleontological resources. These impacts would be reduced however to a less than

significant level through the project's implementation of LRDP FIER MMs Cul-4A to Cul-4C (LRDP FEIR VI page 4.4-19/20).

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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***Cul-4A*** Prior to grading or excavation for future projects that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontologist to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring.

***Cul-4B*** If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.

***Cul-4C*** For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- a. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI);
- b. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and
- c. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.

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### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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### **Additional Project-Level Mitigation Measures**

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None required

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### **Significance Determination after All Mitigation**

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Less than significant



**4.d) Human Remains: No Impact**

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**Relevant Elements of Project**

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No human remains have been identified on or adjacent to the project site and the recorded archeological resources recorded within the East Campus did not include human remains. Although the project site is already developed, because human remains are often found buried beneath the ground surface there is a possibility that remains could occur somewhere on site and be uncovered during the project's earthmoving activities.

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**Discussion of Potential Project Impacts**

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If human remains were discovered during grading, the contractor would be required to notify the County Coroner, in accordance with section 7050.5 of the California Health and Safety Code, who must then determine whether the remains are of forensic interest. If the Coroner, with the aid of a supervising archeologist, determines that, the remains are or appear to be of a Native American, he/she would contact the Native American Heritage Commission for further investigations and proper recovery of such remains.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**5. GEOLOGY AND SOILS**

Issues	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				✓	
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?					✓

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**5.a) i-iv: Fault Rupture, Strong Seismic Shaking, Liquefaction, Landslides: Less Than Significant Impact**

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**Relevant Elements of Project**

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No active or potentially active earthquake faults have been identified on the UCI campus through the State Alquist-Priolo Earthquake Fault Zoning Act program. A locally mapped fault trace, known as the “UCI Campus Fault” is located approximately 0.3 miles to the southwest of the project site, following a northeast to southeast alignment roughly along Anteater Drive. A Restricted Use Zone (RUZ), extending 50 feet beyond both sides of this fault has been established to protect new development near the fault (LRDP FEIR VI pages 4.5-8/9).

The entire campus, like most of southern California, is located in a seismically active area, where strong ground shaking could occur during movements along any one of several faults in the region. An earthquake of magnitude 7.5 on the Richter scale could occur along the Newport-Inglewood Fault, the nearest major fault located approximately 4.5 miles southwest of the campus. Earthquakes along the San Andreas Fault, about 35 miles northeast of the campus could generate an 8.0 magnitude level of energy, and movement along the San Jacinto Fault, about 30 miles away, could release ground motion energy estimated at 7.5 on the Richter scale (LRDP FEIR VI page 4.5-2).

The 2007 LRDP FEIR indicates that a majority of soils on the UCI campus are characterized as dense terraced deposits, which are unlikely to be subject to liquefaction. The majority of the campus, including VPU-4, is characterized as gentle sloping to flat terrain and not susceptible to potential earthquake-induced landslides (LRDP FEIR VI page 4.5-9).

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**Discussion of Potential Project Impacts**

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The project site is located well outside of the RUZ and not in the immediate vicinity of any known active faults and therefore would result in no impact involving a fault rupture (LRDP FEIR VI page 5.5-9). An earthquake along any number of local or regional faults could generate strong ground motions at the subject site that could dislodge objects from walls, ceilings, and shelves or even damage and destroy buildings and other structures. Residents of the new apartment buildings or occupants of the project’s other buildings could be exposed to these hazards; however, grading, foundation, and building structure elements would be designed to meet or exceed the California Building Code (CBC) seismic safety standards. In addition, UCI has adopted a number of programs and procedures to reduce the hazards from seismic shaking by preparing residents for emergencies including through compliance with the UC “Seismic Safety Policy.” As such, compliance with these regulatory standards would ensure that hazards associated with seismically induced ground shaking are reduced to less than significant (LRDP FEIR VI page 4.5-9). As noted earlier, the majority of soils on the UCI campus are terraced deposits comprised of dense materials with relatively deep groundwater. Compliance with the

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CBC, the UC Seismic Safety Policy, and implementation of recommendations in a site-specific geotechnical investigation would reduce any potential hazards associated with liquefaction or landslides to less than significant (LRDP FEIR VI 5.5-9).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**5.b) Soil Erosion: Less Than Significant Impact**

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**Relevant Elements of Project**

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As stated in the Project Description, the project site is an existing development and does not contain areas of exposed bare soil.

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**Discussion of Potential Project Impacts**

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Project demolition and earthwork would result in exposed soil conditions during construction. Following project completion, all exposed soil areas would be landscaped. Site grading and construction activities must comply with Chapters 29 and 70 of the CBC, which regulate excavation and grading activities respectively, and the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities, which requires that construction BMPs be implemented to prevent soil erosion. Such BMPs could include silt fences, watering for dust control, straw-bale check dams, and hydroseeding. These routine control measures would mitigate potential construction-related erosion impacts to below a level of significance (LRDP FEIR VI page 4.5-10). As a result, erosion potential would be significantly reduced and less than significant impacts involving soil erosion are anticipated.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**5.c) Unstable Soil: Less Than Significant Impact**

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**Relevant Elements of Project**

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As stated in the Project Description, the proposed project site is already developed. No instances related to soil stability such as subsidence, liquefaction, or collapse has occurred during the operation of VPU-4. Additionally, the LRDP FEIR indicates that no areas of land subsidence have occurred within the campus (LRDP FEIR VI page 4.5-5). The LRDP FEIR also indicates the majority of soils on the campus are terraced deposits and unlikely to be subject to liquefaction due to material denseness and depth to groundwater (LRDP FEIR VI page 4.5-9). Loose or compressible soils are found primarily in undeveloped areas of the campus primarily in the South Campus area bordering Bonita Canyon Drive, greater than a half mile away from the project site. The project site, as noted in previous sections, is relatively flat (not steeper than 25 degrees) and would thus not be susceptible to instability (LRDP FEIR VI pages 4.5-11/12).

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**Discussion of Potential Project Impacts**

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As noted in the LRDP FEIR, project compliance with the CBC and implementation of recommendations in a site-specific geotechnical investigation would reduce potential impacts associated with soil stability to a less than significant level (LRDP FEIR VI page 4.5-12).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**5.d) Expansive Soil: Less Than Significant Impact**

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**Relevant Elements of Project**

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Expansive soils are prevalent on campus and are generally a dark brown sandy clay, clayey sand, or lean clay, which can be detrimental to foundations, concrete slabs, flatwork, and pavement. Topsoil throughout the campus is highly expansive, ranging from eight to 12% swell with an underlying material generally consisting of non-expansive to moderately expansive terrace deposits with a swell ranging from zero to 8% (LRDP FEIR VI page 4.5-12).

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**Discussion of Potential Project Impacts**

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The CBC includes provisions for construction on expansive soils. Proper fill selection, moisture control, and compaction during construction can prevent these soils from causing significant damage. Expansive soils can be treated by removal (typically the upper three feet below finish grade) and replacement with low expansive soils, lime-treatment, and/or moisture conditioning. The LRDP FEIR concluded that compliance with the CBC would reduce impacts related to expansive soil on the campus to less than significant (LRDP FEIR VI pages 4.5-12/13).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**5.e) Alternative Waste Disposal Systems: No Impact**

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**Relevant Elements of Project**

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All wastewater generated by the proposed project would be conveyed in the same manner as is currently occurring on the site, via local sewers directly into the existing public sanitary sewer system maintained by the Irvine Ranch Water District (IRWD).

**Discussion of Potential Project Impacts**

As wastewater disposal for UCI utilizes the sanitary sewer system this issue was focused out of the LRDP FEIR (LRDP FEIR Vol II Appendix A page 15).

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**6. HAZARDS AND HAZARDOUS MATERIALS**

	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Issues					
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?					
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?				✓	

### 6.a-b) Hazardous Materials Transport, Disposal, Release: Less Than Significant Impact

#### Relevant Elements of Project

The LRDP FEIR determined that implementation of the 2007 LRDP, including the proposed project, would involve the continued transport, use, and disposal of hazardous material (LRDP FEIR VI page 4.6-21). Temporary and short-term hazards would be limited to transport, storage, use and disposal of fuels, solvents, paints and other coating materials used during the various construction stages of the project. Over its long-term operation, the proposed residential, child-care, and accessory uses, management, and maintenance of VPU-4 would likely continue to involve the storage, use and disposal of minor quantities of typical household hazardous materials, such as pesticides, fertilizers, interior and exterior paints, and cleaning supplies that are currently being used on site.

#### Discussion of Potential Project Impacts

Contractors on the campus are responsible for ensuring that hazardous materials and waste are handled, stored and disposed of in accordance with all applicable federal, state, and local laws and regulations and routine construction control measures would be sufficient to avoid significant impacts. Significant hazards due to minor household applications of typical hazardous material noted above are considered unlikely. The energy systems incorporated into the new apartment buildings and accessory structures would not generate any hazardous air



emissions. Compliance with all applicable federal and State laws, as well as established campus programs, practices, and procedures related to the transport and release of hazardous materials would minimize the potential for impacts to less than significant (LRDP FEIR VI pages 4.6-28 and 30).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**6.c) Proximity to Schools: No Impact**

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**Relevant Elements of Project**

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Two schools are located within 0.4 miles and 0.7 miles of the proposed project: University High School and Turtle Rock Elementary School. As discussed in Issues 6.a and b above, the proposed housing project would not generate any hazardous emissions or handle dangerous quantities of hazardous materials.

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**Discussion of Potential Project Impacts**

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Routine construction controls, as described in the preceding response, along with existing campus programs, practices, and procedures would ensure that no significant accidental releases of hazardous substances that could potentially threaten any local schools occur. As the University High School and Turtle Rock Elementary School are located greater than 0.25 miles from the project site, no impacts to schools are anticipated (LRDP FEIR VI pages 4.6-31/32).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**6.d) Hazardous Materials Sites: No Impact**

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**Relevant Elements of Project**

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The 2007 LRDP FEIR concluded that there are no recorded hazardous materials sites on or within the immediate vicinity of the project site, the closest UCI recorded hazardous materials site is located on the North Campus Corporation Yard, located more than one mile north away of the project site. According to the UCI Environmental Health and Safety Department no other known hazardous material sites exist on the campus (LRDP FEIR VI pages 4.6-32/33).

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**Discussion of Potential Project Impacts**

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Since there are no reported hazardous waste or substances sites within or near the project limits, this project would have no impact involving such a site.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**6.e-f) Airports: Less Than Significant Impact**

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**Relevant Elements of Project**

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The proposed project site is within the airport planning area for the John Wayne Airport (JWA), a public facility located approximately three miles to the northwest. There are no private airstrips located near the campus.

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### **Discussion of Potential Project Impacts**

The Airport Land Use Commission for Orange County has established Runway Protection Zones (RPZ) for JWA, also called Accident Potential Zones (APZ), which define those surrounding areas that are more likely to be affected if an aircraft-related accident were to occur. Those zones do not extend to the vicinity of the proposed project site. Because most aircraft accidents take place on or immediately adjacent to the runway it is unlikely that aircraft operating at JWA pose a safety threat to the UCI campus. Additionally, as reported in the 2007 LRDP FEIR, no accidents have occurred near the campus within the past 26 years. As such, it is considered unlikely that aircraft operating at JWA would pose a safety hazard to people residing or working at the proposed project site (LRDP FEIR page 4.6-33).

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

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### **Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

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### **Additional Project-Level Mitigation Measures**

None required

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### **Significance Determination after All Mitigation**

Not applicable

### **6.g) Emergency Response: Project Impact Adequately Addressed in LRDP EIR**

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#### **Relevant Elements of Project**

UCI has an Emergency Management Plan that addresses roles and responsibilities, communications, training and procedures to guide organized responses to various levels of human-made or natural emergencies for all campus staff, students, and visitors (LRDP FEIR VI page 4.6-34).

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#### **Discussion of Potential Project Impacts**

Construction-related lane or road closures are not anticipated to be necessary to construct the VPU-4 project. However, if the contractor determines that a temporary road closure is necessary during the project's construction, LRDP FEIR MM Haz-6A would be implemented to ensure that sufficient notification is provided to the UCI Fire Marshall to allow coordination of local emergency services that might be affected (LRDP FEIR VI page 4.6-34). The completed project would not affect access to any other developed or undeveloped campus land and would not interfere with the ability of residents to evacuate the housing complex along the roadways

surrounding the project site. Further, operational aspects of the proposed residential development would not interfere with an adopted emergency response plan or emergency evacuation plan.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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**Haz-6A** Prior to initiating on-site construction for future projects that implement the 2007 LRDP and would involve a lane or roadway closure, the construction contractor and/or UCI Design and Construction Services shall notify the UCI Fire Marshal. If determined necessary by the UCI Fire Marshal, local emergency services shall be notified of the lane or roadway closure by the Fire Marshal.

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**Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Less than significant

**6.h) Wildland Fires: Less Than Significant Impact**

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**Relevant Elements of Project**

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As noted in the LRDP FEIR, coastal sage scrub and grasslands are flashy fuels that can easily ignite during dry conditions (LRDP FEIR VI page 4.6-35). However, the project site is developed, surrounded by other campus development, and contains neither coastal sage scrub nor grasslands. Portions of the project to be landscaped would not include fire-prone habitat types.

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**Discussion of Potential Project Impacts**

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The proposed project would not expose people or structures to increased risks associated with wildland fires based on the implementation of fuel modification plans and other preventative measures. Thus, the LRDP FEIR concluded that impacts related to wildland fires would be a less than significant (LRDP FEIR VI page 4.6-36).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**7. HYDROLOGY AND WATER QUALITY**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
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?					✓

**7.a) Water Quality Standards: Project Impact Adequately Addressed in LRDP EIR**

**Relevant Elements of Project**

As noted in the Project Description, the project site is an existing student housing facility. Site runoff currently consists of overland flows during rainstorms, and the water quality is comprised of chemical elements present in rainwater and materials typically found in development related stormwater. The approximately 300-foot linear drainage channel discussed previously conveys stormwater runoff flows from development located to the south of the site across Adobe Circle Road South and the existing VPU-4 complex.

The proposed project would potentially generate water quality impacts related to construction and post-construction conditions. Construction of the project could result in additional sources of polluted runoff through site clearing and grading, stockpiling of soils and materials, painting, concrete pouring, and asphalt surfacing (LRDP FEIR VI page 4.1-21). Urban runoff resulting from the project would be similar to that currently being generated on-site from VPU-4’s streets, driveways, parking surfaces, roofs, patios and landscaped areas.

As stated in the Project Description, runoff from the project would be managed similar to existing conditions, collected on site and conveyed to an existing storm drain under Campus Drive, and in-line structural filtration mechanisms or other BMPs would be provided. Ultimately, drainage from the site would be transported via San Diego Creek to Upper Newport Bay, located approximately two miles west of the UCI campus. Runoff from the campus

accounts for less than one percent of all flows into the Bay (LRDP FEIR VI page 4.7-10). Applicable water quality standards developed by the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Board (RWQCB) which would control pollutants contained in runoff generated from campus properties for stormwater are set forth in applicable permits (which also serve as waste discharge requirements), including the General Construction Storm Water Permit, (LRDP FEIR VI page 4.17-19).

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### **Discussion of Potential Impacts**

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Potential water quality impacts during the project's construction phases would be the same type as those evaluated in the 2007 LRDP FEIR. Stockpiled soils and other construction materials for use during later construction phases would be stored outdoors during construction. Pollutants associated with these construction activities that could result in water quality impacts include soils, debris, other materials generated during site clearing and grading, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials. These pollutants could affect water quality if they are washed off site by storm water or non-storm water, or are blown or tracked off site to areas susceptible to wash off by storm water or non-storm water (LRDP FEIR VI page 4.7-21).

Landscaped areas within the completed project could also result in water quality impacts due to the use of fertilizers. If fertilizers are a component of the stormwater runoff discharged from the complete project site, they could adversely affect receiving waters by causing a reduction in oxygen levels and eutrophication (the process of over-enrichment of nutrients in a water body fostering an increase in biotic life that results in a significant loss of dissolved oxygen) (LRDP FEIR page 4.7-21). All construction activities would be carefully managed to prevent runoff containing soil and vegetation materials and construction wastes. In accordance with a Stormwater Pollution Prevention Plan (SWPPP) prepared to satisfy the conditions of the statewide General Construction Storm Water Permit stormwater management practices would mitigate the project's construction related impacts to less than significant (LRDP FEIR VI page 4.7-22).

This project would not generate any point sources of wastewater or other liquid or solid water contaminants. All of the residential wastewater that would be generated by the project would be discharged as is currently occurring into the local sanitary sewer system, which conveys the flows into Irvine Ranch Water District's regional wastewater collection and treatment system. No waste discharge permits are required to connect to the sewer system.

Implementation of the construction control measures to be specified in the project's SWPPP as required under the General Construction Storm Water Permit program, and installation/maintenance of the post-construction BMPs to be specified in the project's water quality management plan would ensure that runoff from the developed site does not violate any

water quality standards. Potential impacts to San Diego Creek related to the project's post-construction activities would be reduced to below a level of significance with implementation of FEIR MM Hyd-2B. With implementation of and compliance with the stormwater permits described above which serve to control pollutants in runoff from campus no impact would occur with regard to violation of stormwater standards or waste discharge requirements and with implementation of MMs Hyd-2A and 2B, construction and post construction impacts would be less than significant (LRDP FEIR VI pages 4.7-19 to 23).

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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**Hyd-2A:** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve an erosion control plan for project construction. The plan shall include, but not be limited to, the following applicable measures to protect downstream areas from sediment and other pollutants during site grading and construction:

- i. Proper storage, use, and disposal of construction materials.
- ii. Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter.
- iii. Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.
- iv. Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures.
- v. Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures.
- vi. Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures).
- vii. Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping.
- viii. Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.

**Hyd-2B:** Prior to project design approval for future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or more, the UCI shall ensure that the projects include the design features listed below, or their equivalent, in addition to those listed in mitigation measure Hyd-1A. Equivalent design features may be applied consistent with applicable MS4 permits (UCI's Storm Water Management



Plan) at that time. All applicable design features shall be incorporated into project development plans and construction documents; shall be operational at the time of project occupancy; and shall be maintained by UCI.

- i. All new storm drain inlets and catch basins within the project site shall be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCI standards.
- ii. Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment.
- iii. Permanent trash container areas shall be enclosed to prevent off-site transport of trash, or drainage from open trash container areas shall be directed to the sanitary sewer system.
- iv. At least one treatment control is required for new parking areas or structures, or for any other new uses identified by UCI as having the potential to generate substantial pollutants. Treatment controls include, but are not limited to, detention basins, infiltration basins, wet ponds or wetlands, bio-swales, filtration devices/inserts at storm drain inlets, hydrodynamic separator systems, increased use of street sweepers, pervious pavement, native California plants and vegetation to minimize water usage, and climate controlled irrigation systems to minimize overflow. Treatment controls shall incorporate volumetric or flow-based design standards to mitigate (infiltrate, filter, or treat) storm water runoff, as appropriate.

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### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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### **Additional Project-Level Mitigation Measures**

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None required

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### **Significance Determination After All Mitigation**

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Less than significant

### **7.b) Groundwater: No Impact**

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#### **Relevant Elements of the Project**

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No removal of groundwater is proposed; UCI, including the proposed project uses water supplied by the IRWD (LRDP FEIR VI page 4.7-27).

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**Discussion of Potential Impacts**

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As UCI does not obtain water service from groundwater sources, no impacts would occur. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the FEIR was not required (LRDP FEIR VI page 4.7-27).

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination After All Mitigation**

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Not applicable

**7.c) Erosion On or Off-Site: Less Than Significant Impact**

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**Relevant Elements of the Project**

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As stated in the Project Description, the project site is a developed student-housing complex. The project site is relatively flat and overland flows not absorbed into the ground or by surface vegetation flow into the existing storm drain system. As stated in previous sections the site contains an existing drainage channel, which the project would replace with a drainage pipe and place fill above to create additional developable land to construct the project.

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**Discussion of Potential Impacts**

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Although the project would reconfigure the site to create new building pads, parking surfaces, and other site improvements its topography would not substantially be altered and existing drainage patterns would generally be retained. Features that control run-off volumes and durations to minimize or eliminate erosion and siltation would be depicted on final construction plans. All common areas would be landscaped and flows not absorbed naturally would flow into the project's storm drain system. Energy dissipaters and other control devices would be incorporated as needed. Drainage control measures would be implemented during rough grading to ensure that discharge volumes and durations are controlled on newly graded channels. Strategies such as desiltation basins, riprap, sandbag chevrons, straw waddles, etc. would be incorporated into the project's Storm Water Pollution Prevention Plan (SWPPP) both during and after grading. Replacement of the drainage channel described above with a stormwater pipe would not result in on- or off-site erosion or siltation. Potential erosion or siltation impacts

during and following construction would be reduced to less than significant levels through compliance with the conditions of the General Construction Storm Water Permit and LRDP FEIR MMs Hyd-2A and 2B, as described in the response to item 7.a.

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#### **Applicable LRDP Measures Incorporated in the Project**

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Hyd-2A and Hyd-2B provided above in issue 7.a.

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination After All Mitigation**

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Less than significant

#### **7.d) Flooding On or Off-Site: Project Impact Adequately Addressed in LRDP EIR**

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##### **Relevant Elements of the Project**

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Following implementation of the project, similar to its current state, the majority of the site would be developed. Site areas that are not covered with impervious surfaces (rooftops, driveways, streets, etc.) would be landscaped. As stated previously, flows not absorbed into the ground or vegetation would be conveyed via VPU-4's internal drainage network to the existing off-campus storm drain system. The linear drainage feature previously discussed would be converted into an underground-piped conveyance.

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##### **Discussion of Potential Impacts**

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To avoid significant flooding impacts on or off site the proposed storm drainage system would be designed in accordance with the drainage criteria set forth in LRDP MM Hyd-1A. The drainage pipe that replaces the aforementioned drainage feature would be sized and constructed according to the drainage study. Additional hydrological analysis would be conducted as part of the final design process to specify the drainage control facilities required to satisfy flood control criteria, as well as site design, mechanical, structural and non-structural measures to filter pollutants from site runoff, prior to discharge into existing storm drainage networks. No additional mitigation measures would be required to provide an adequate level of protection from flooding.

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##### **Applicable LRDP Measures Incorporated in the Project**

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*Hyd-1A:* As early as possible in the planning process of future projects that implement the

2007 LRDP and would result in land disturbance of 1 acre or greater, and for all development projects occurring on the North Campus in the watershed of the San Joaquin Freshwater Marsh, a qualified engineer shall complete a drainage study. Design features and other recommendations from the drainage study shall be incorporated into project development plans and construction documents. Design features shall be consistent with UCI's Storm Water Management Program, shall be operational at the time of project occupancy, and shall be maintained by UCI. At a minimum, all drainage studies required by this mitigation measure shall include, but not be limited to, the following design features:

- i. Site design that controls runoff discharge volumes and durations shall be utilized, where applicable and feasible, to maintain or reduce the peak runoff for the 10-year, 6-hour storm event in the post-development condition compared to the pre-development condition, or as defined by current water quality regulatory requirements.
- ii. Measures that control runoff discharge volumes and durations shall be utilized, where applicable and feasible, on manufactured slopes and newly-graded drainage channels, such as energy dissipaters, revegetation (e.g., hydroseeding and/or plantings), and slope/channel stabilizers.

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination After All Mitigation**

---

Less than significant

#### **7.e) Create or Contribute Runoff Water: No Impact**

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#### **Relevant Elements of the Project**

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As noted in the Project Description, the project site is already developed as a student-housing complex. Stormwater on the site flows into catch basins, which drain to an existing 84-inch storm drain connecting to the off-campus drain system under Campus Drive.

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#### **Discussion of Potential Impacts**

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As stated in the project description, construction of the project would include stormwater improvements. Upon completion of the project, flows from VPU-4 would continue to drain to

the stormwater system under Campus Drive.

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination After All Mitigation**

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Not applicable

**7.f) Otherwise Substantially Degrade Water Quality: No Impact**

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**Relevant Elements of the Project**

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Please refer to the responses to items 7a-7e; no other project elements would affect the water quality of the site or its surroundings.

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**Discussion of Potential Impacts**

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Please refer to the responses to items 7a-7e; no other project impacts would substantially degrade the water quality of the site or its surroundings.

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination After All Mitigation**

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Not applicable

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**7.g) Place Housing within a 100-Year Flood Hazard Area: No Impact**

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**Relevant Elements of the Project**

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The entire UCI campus including the project site is within Flood Zone X outside the 100-year floodplain (LRDP FEIR VI page 4.7-27).

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**Discussion of Potential Impacts**

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Since there are no 100-year flood hazard areas on the UCI campus, this project would have no impact resulting from the construction of housing in such areas. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the FEIR was not required (LRDP FEIR VI page 4.7-27).

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination After All Mitigation**

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Not applicable

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**7.h) Place Structures within a 100-Year Flood Hazard Area: No Impact**

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**Relevant Elements of the Project**

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The entire UCI campus including the project site is within Flood Zone X outside the 100-year floodplain (LRDP FEIR VI page 4.7-27).

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**Discussion of Potential Impacts**

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Since there are no 100-year flood hazard areas on the UCI campus, this project would not place any structures in a manner that would impede or redirect flood flows. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the FEIR was not required (LRDP FEIR VI page 4.7-27).

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination After All Mitigation**

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Not applicable

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**7.i) Expose People or Structures to a Significant Risk Involving Flooding: No Impact**

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**Relevant Elements of the Project**

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There are no levees or dams anywhere on or near the UCI campus.

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**Discussion of Potential Impacts**

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Since the project site is not within a levee or dam inundation area, this project would not expose any people or any structures to such flood hazards. The LRDP FEIR determined that it is unlikely that flooding because of dam or levee failure would have an effect on the campus. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the FEIR was not required (LRDP FEIR VI page 4.7-27).

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**Applicable LRDP Measures Incorporated in the Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**7.j) Seiche, Tsunami, or Mudflow: No Impact**

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**Relevant Elements of the Project**

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A tsunami is the secondary effect of an earthquake that occurs as waves are generated in the ocean at a point near the earthquake source. Seiche, i.e. catastrophic release of water from a

water body, is typically associated with land locked bodies of water or water storage facilities, none of which occurs near the campus. No major hillsides are near the project site from which mudflow conditions could occur (LRDP FEIR VI pages 4.7-24/25).

**Discussion of Potential Impacts**

As UCI is more than three miles from the Pacific Ocean and sufficient evacuation notice would be provided by the West Coast and Alaska Tsunami Warning Center, it is unlikely that the project would be impacted by tsunami. Since the project site is not located in an area threatened by potential seiche conditions and does not contain topographic features that would be conducive to mudflows, this project would not expose any people or any structures to such hazards (LRDP FEIR VI pages 4.7-24/25).

**Applicable LRDP Measures Incorporated in the Project**

None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable


**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**8. LAND USE AND PLANNING**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
Would the project:					
a) Physically divide an established community?					



	(A)	(B)	(C)	(D)	(E)
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?					✓

**8.a) Divide an Established Community: No Impact**

**Relevant Elements of Project**

As stated in the Project Description, the project would redevelop an existing student-housing complex in an area of the campus designated by the 2007 LRDP Land Use Plan as Student Housing. Circulation and infrastructure systems, also described in the Project Description are in place to serve the project.

**Discussion of Potential Project Impacts**

This proposed housing project would have no effect on the land use pattern of the surrounding community, either on or off campus. No major streets would be built or removed as a part of this project. The proposed project would complement the existing adjacent student housing communities by introducing a consistent and similarly designed development within the East Campus. As such, the proposed project would have no effect on the physical framework of the surrounding community.

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

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**Significance Determination after All Mitigation**

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Not applicable

**8.b) Conflict with an Applicable Land Use Plan: No Impact**

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**Relevant Elements of Project**

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As stated above, the project site is entirely within an area designated for Student Housing in the 2007 LRDP. The University of California is the only agency with local land use jurisdiction over projects located on the campus; the applicable land use plan is the LRDP. No LRDP policies were adopted for this area of the campus with the intent of avoiding or mitigating an environmental effect (LRDP FEIR VI 4.8-15).

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**Discussion of Potential Project Impacts**

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Since this land is not governed by any policies or regulations adopted to avoid or mitigate an environmental effect, there would be no impact. UCI is not subject to municipal regulations such as the City of Irvine General Plan. The proposed housing project, as detailed in the Project Description, is consistent with the 2007 LRDP land use plan.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

**8.c) Conflict with an Applicable Conservation Plan: No Impact**

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**Relevant Elements of Project**

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The project site is not regulated by a Habitat Conservation Plan, Natural Community Conservation Plan, or any other land conservation plan.

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**Discussion of Potential Project Impacts**

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Because this part of the campus not regulated by any habitat or open space conservation plans,

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no conflict would result.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**8.d) Create other Land Use Impacts: No Impact**

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**Relevant Elements of Project**

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As previously noted, this project is consistent with the LRDP land use policies and would not affect the physical framework of the campus, or land use opportunities of any surrounding land.

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**Discussion of Potential Project Impacts**

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The proposed project is being designed as a compatible component of the existing Verano Place and East Campus sector student housing communities and would not create other land use impacts.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

**9. NOISE**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
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)?		✓			
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?					✓

**9.a) Noise Standards: Less Than Significant Impact**

**Relevant Elements of Project**

As discussed in the LRDP FEIR, land use/noise compatibility planning is guided primarily by the criteria developed by the California Department of Health Services (CDHS) to support development of the Noise Elements in local general plans (VI page 4.9-24). These criteria

indicate that high-density residential uses are normally acceptable in areas with exterior noise levels below 65 dBA. The LRDP FEIR states that vehicular traffic noise would be the primary noise source to affect implementation of the LRDP, including future residents of the project (LRDP FEIR VI page 4.9-24). As indicated on Figure 3 in the Project Description, California Avenue, a principle roadway in the East Campus sector, borders the eastern edge of the project site.

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**Discussion of Potential Project Impacts**

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The noise study prepared for the 2007 LRDP FEIR determined that the existing 65 dBA CNEL contour for California Avenue adjacent the project site occurs at 50 feet from the centerline of the street for its segment between Campus Drive and Arroyo Drive North (the LRDP FEIR did not include noise levels for the roadway section between Arroyo Drive North and Adobe Circle South). The proposed apartment buildings would be located at a distance greater than 60 feet from the street's centerline, outside its 65dBA CNEL noise contour line (LRDP FEIR VI page 4.9-15). Therefore, impacts related to noise standards would be less than significant.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**9.b) Groundborne Noise: Project Impact Adequately Addressed in LRDP EIR**

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**Relevant Elements of Project**

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As stated in the project description, the proposed project would redevelop an existing student apartment complex with new student apartment buildings, child-care centers, and accessory facilities, none of which would generate groundborne noise or vibration. There are no sources of groundborne noise or vibration near the project site.

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**Discussion of Potential Project Impacts**

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The project site is located in an area of the campus developed with existing student housing communities, which do not produce groundborne vibrations or groundborne noise. None of the proposed student apartments, accessory structures, or use of undeveloped lands within the completed project would produce groundborne vibrations or groundborne noise levels. Construction of the proposed project may require the use of demolition equipment such as

jackhammers that would generate groundborne noise or vibrations and may result in temporary daytime groundborne vibration. Implementation of LRDP FEIR MM Noi-2a(iii) would limit disturbances associated groundborne construction noise of vibration to surrounding residences by preventing such activities during any final exam week. Thus, the project's impacts related to groundborne noise would be less than significant level.

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

*Noi-2a(iii)* Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 600 feet of a residence or an academic building shall not be scheduled during any finals week of classes. A finals schedule shall be provided to the construction contractor.

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### **Significance Determination after LRDP EIR Mitigation Measures**

Less than significant

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### **Additional Project-Level Mitigation Measures**

None required

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### **Significance Determination after All Mitigation**

Less than significant

### **9.c) Permanent Ambient Noise: Less Than Significant Impact**

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#### **Relevant Elements of Project**

As stated in the Project Description, the proposed project is the redevelopment of an existing student housing facility with new apartment buildings and accessory structures. The project site is interior to the campus and surrounded by existing student housing complexes. Activities associated with residential uses occurring within the Project are expected to be the same as those currently existing within VPU-4. Implementation of the 2007 LRDP was determined to have a significant noise impact if it would result in noise levels in excess of State of California (applicable on campus) or City of Irvine (off campus) standards and a permanent increase of 3 dBA or more in ambient noise levels at sensitive receptors (2007 LRDP FEIR VI page 4.9-24).

---

#### **Discussion of Potential Project Impacts**

As stated in the (2007 LRDP FEIR page 4.9-24), permanent noise sources can be divided into vehicular and stationary sources, such as human activity. Noise associated with residential indoor activities would not typically result in significant impacts to neighboring homes and residents. Outdoor noise associated with vehicle parking areas and access ways (car doors slamming, cars starting, cars accelerating away from the parking stalls, etc.) would occur on a

regular basis within the housing development as residents arrive and depart. These temporary noises would have a minor and insignificant effect upon the local noise environment and currently occur on the site. Occasional events such as meeting or social events at the residences could potentially result in a public nuisance, particularly if they involve loud exchanges late at night or early in the morning, though these situations would typically be resolved by housing staff or the campus police. Recreational noise sources within the project's open space areas would typically consist of passive activities such as picnics, walking, sitting, and sports activities. Permanent noise impacts due to these normal residential and recreational activities would not be significant. Since this project is consistent with the program land use intensity policies for the Student Housing land use classification in the LRDP, it would not result in traffic volumes higher than analyzed in the LRDP FEIR and therefore would not result in significant permanent effects involving traffic noise

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#### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Not applicable

### **9.d) Temporary Ambient Noise: Project Impact Adequately Addressed in LRDP EIR.**

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#### **Relevant Elements of Project**

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Construction of the project would cause a temporary increase in ambient noise levels. As the project is the redevelopment of an existing student housing facility with new apartment buildings, noise generated from the completed project would be similar to that currently existing on the site.

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#### **Discussion of Potential Project Impacts**

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Project construction is projected to require conventional construction techniques and standard equipment such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous trucks. Specialized construction activities that generate unusually loud and repetitive noise such as pile driving are not anticipated. Construction activities, nonetheless, would generate noise that could temporarily increase noise levels affecting nearby student housing. The magnitude of

the impact would depend on the type and duration of the activity, type of construction equipment being used, distance between the noise source and receiver, and intervening structures, topography, and barriers. Noise levels generated by these types of construction equipment would range from 60 to 90dBA at 50 feet from the source. Noise from construction equipment propagates as a point source that decays at a rate of 6dB per doubling of distance from the source (assuming no ground interaction). For example, noise from construction equipment generating a 90dBA noise level at 50 feet could exceed 75dBA at a distance of 300 feet from the source (LRDP FEIR VI pages 4.9-31/32), a higher than ambient noise level that would be heard at the housing facilities adjacent the project site.

Because conventional construction equipment is powered, for the most part, by internal combustion engines, most already equipped with proper tuning and standard muffling devices, it is not practical to require specific noise limits on construction activities. Instead, UCI, like most cities and counties, restricts construction activities to daylight hours when the noise is considered least intrusive. LRDP FEIR MM Noi-2A, listed below, would limit construction operations to daytime hours, require separation between construction staging areas and nearby homes, require proper equipment maintenance and muffling devices, and place restrictions on weekend construction activities. This standard construction specification would reduce temporary noise impacts from construction activities to below a level of significance (LRDP FEIR VI page 4.9-32). Occasional noise associated with outdoor recreation and maintenance at the apartments and other facilities in VPU-4 would occur; however, these are considered minor sources that would not result in a substantial increase in ambient noise levels.

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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**Noi-2A** Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve contractor specifications that include measures to reduce construction/demolition noise to the maximum extent feasible. These measures shall include, but are not limited to, the following:

- i. Noise-generating construction activities occurring Monday through Friday shall be limited to the hours of 7:00 am to 7:00 pm, except during summer, winter, or spring break at which construction may occur at the times approved by UCI.
- ii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) off-campus land uses shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction occurring on Sundays or holidays.
- iii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-campus residential housing shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is



unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time.

- iv. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise.
- v. Stationary construction noise sources such as generators, pumps or compressors shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible.
- vi. Laydown and construction vehicle staging areas shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible.
- vii. All neighboring land uses that would be subject to construction noise shall be informed at least two weeks prior to the start of each construction project, except in an emergency situation.
- viii. Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 600 feet of a residence or an academic building shall not be scheduled during any finals week of classes. A finals schedule shall be provided to the construction contractor.

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### **Significance Determination after LRDP EIR Mitigation Measures**

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Less than significant

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### **Additional Project-Level Mitigation Measures**

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None required

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### **Significance Determination after All Mitigation**

---

Less than significant

### **9.e) Public Airport Noise: Less Than Significant**

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#### **Relevant Elements of Project**

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The proposed project site is located approximately three miles southeast of John Wayne Airport (JWA), a public facility. The Airport Land Use Commission for Orange County defined the planning area for John Wayne Airport (JWA) as all areas within the 60dB CNEL Noise Contour.

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**Discussion of Potential Project Impacts**

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As discussed in Section 4.9.3.3 of the 2007 LRDP FEIR (VI page 4.9-34), the airport's 60 CNEL contour does not extend to the UCI campus; therefore, the proposed project would not be subject to aircraft noise in excess of regulatory limits. Impacts due to aircraft noise would be less than significant.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**9.f) Private Airport Noise: No Impact**

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**Relevant Elements of Project**

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There are no private airstrips within the vicinity of the proposed project site.

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**Discussion of Potential Project Impacts**

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Since there are no private airstrips in this area, there would be no noise impact from such sources.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

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**10. POPULATION AND HOUSING**

	(A)	(B)	(C)	(D)	(E)
Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					✓

**10.a) Induce Substantial Population Growth: Less Than Significant Impact**

**Relevant Elements of Project**

As noted in the Project Description, the proposed project would redevelop an existing student housing facility located on land designated in the 2007 LRDP as Student Housing and would temporarily increase student bed availability on the campus prior to completion of Phase II. The project would not provide housing for the public. Circulation and infrastructure systems (wet and dry) have been built on campus to serve the project site. Other infrastructure, such as natural gas, water, sewer, telecommunications, and some electrical power are provided by off campus utility providers and distributed on campus by UCI (LRDP FEIR VI page 4.10-14). The project would not result in the extension of infrastructure beyond the project site.

**Discussion of Potential Project Impacts**

The proposed project is consistent with the 2007 LRDP’s goal to house 50 percent of students on campus. The temporary bed availability increase noted above is consistent with the population growth anticipated by the 2007 LRDP, which was circulated for public review to nearby jurisdictions and the Southern California Association of Governments. Upon completion of the project, the redeveloped VPU-4 would have the same number of student beds as presently exists

on site, approximately 400. Thus, the project, including the increased number of on-campus beds that would occur temporarily, is consistent with the amount of on-campus student housing analyzed in the LRDP FEIR, which was determined to not directly induce substantial population growth in the area and have a less than significant impact (LRDP FEIR VI page 4.10-11).

UCI does not provide utility service to off-campus areas; therefore, utility extensions and expansions as described above, would not lead to urban growth outside the boundary of the campus (LRDP FEIR VI page 4.10.14). Further, as the project would replace the existing VPU-4 structures and uses, no substantial changes to off-campus utilities provided to UCI by other entities are anticipated to be necessary to complete the project (LRDP FEIR VI page 4.10-14). Therefore, the proposed project would have a less than significant indirect impact on population growth in the area.

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#### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Not applicable

#### **10.b-c) Replacement Housing: No Impact**

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#### **Relevant Elements of Project**

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As stated in the Project Description the proposed project site is the redevelopment of an existing student housing facility with new apartments. In order to construct the new student beds the proposed project would demolish the existing beds.

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#### **Discussion of Potential Project Impacts**

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The project's two demolition phases would temporarily displace the beds in VPU-4. The project Design/Build Team in coordination with UCI would determine the order of existing apartment demolition during these phases prior to project construction. The residents would be accommodated within other housing facilities on the campus. As such, implementation of the proposed project would not require the construction of replacement housing on the campus or elsewhere within the community.

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**11. PUBLIC SERVICES**

Issues	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					✓

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## 11.a) Fire Protection: Less Than Significant Impact

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### Relevant Elements of Project

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Fire protection and emergency response services to VPU-4 are provided by the Orange County Fire Authority (OCFA). OCFA Fire Station #4, located just north of the campus on the corner of California and Harvard Avenues, is the primary responder serving the UCI main campus. The station was built in 1966 and there are no plans for its expansion. According to an analysis conducted by OCFA in November 2006, the capacity of service for Station #4, as determined by OCFA, is approximately 3,500 calls per year. During 2005, UCI generated 668 calls, accounting for 30 percent of the station's calls. Based on the small number of residents within VPU-4 (approximately 400) in comparison to the entire UCI population and development program (approximately 15,000 on campus residents and daytime population of approximately 40,000 people) existing VPU-4 is a minor percentage of the overall OCFA call volume. Additionally, UCI employs a Fire Marshal whom is responsible for the campus' fire prevention practices and provides services such as plan review and construction inspections (LRDP FEIR VI pages 4.11-6/7).

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### Discussion of Potential Project Impacts

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Full implementation of the 2007 LRDP would result in an approximately 53 percent increase in the on-campus population of students, faculty, and staff by 2025, compared to the 2005-06 on-campus population. The proposed project would result in the temporary potential for increased emergency calls prior to completion of Phase II. Assuming that the temporary increase in call generation for fire protection services prior to completion of that phase would be equivalent to the temporary increase in VPU-4's student bed spaces, the number of calls for such services can be expected to increase by approximately 50 percent prior to its completion. Thus, prior to the completion of Phase II, the project could result in a temporary minor increase in projected call volume. Upon completion of the project, emergency calls generated from VPU-4 would be anticipated to be the same as pre-project levels.

The LRDP FEIR concluded that no new fire stations or expansion of Fire Station #4 would be needed to maintain adequate levels of service to the main campus to serve LRDP development. Further, the UCI Fire Marshal reviews and approves all development plans or each new campus project in accordance with California building and fire codes (LRDP FEIR VI page 4.11-7). Although the proposed project would temporarily increase the number of student beds on the campus prior to completion of Phase II, it would not result in more student beds or greater population than analyzed in the LRDP FEIR or any change in demand for fire protection services. The project is consistent with the 2007 LRDP and long-term demand for fire department services would be within the levels projected in the 2007 LRDP FEIR; therefore, the project would not result in a significant impact on fire protection services.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**11.b) Police Protection: Less Than Significant Impact**

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**Relevant Elements of Project**

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The UCI Police Department provides all police services (all patrol, investigation, crime prevention education, and related law enforcement duties) for the campus, including VPU-4 and employs 30 sworn officers, which as the LRDP FEIR indicates meets the general goal of an acceptable level of service (one officer per 1,000 persons in the population). The Public Services Building, which houses the Department, is also in the East Campus, approximately 300 yards from the project site's western boundary on East Peltason Drive and was renovated prior to adoption of the 2007 LRDP (LRDP FEIR VI page 4.11-3).

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**Discussion of Potential Project Impacts**

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The LRDP FEIR determined that demands on police protection services for UCI are likely to increase with campus population growth and that some expansion or renovation of existing facilities or construction of new facilities may be required to maintain adequate service levels (LRDP FEIR VI page 4.11-8). No specific facilities plans are identified in the LRDP and any additional facilities would be subject to assessment of environmental impacts and mitigation measures, pursuant to the University's obligations under CEQA; no significant impacts associated with additional police facilities were anticipated in the LRDP FEIR. Although the proposed project would temporarily increase the number of student beds on the campus prior to completion of Phase II, it would not result in more student beds or greater population than analyzed in the LRDP FEIR or any change in demand for police department services. Impacts associated with maintaining adequate police services associated with the proposed project would be less than significant.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**11.c) Schools: Less Than Significant Impact**

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**Relevant Elements of Project**

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The Irvine Unified School District (IUSD) provides kindergarten through grade 12 (K-12) public education services for school age children residing on the UCI campus. The demand for grade K-12 public education facilities generated by the UCI on-campus population is associated primarily with married student households, faculty/researcher households, and staff households. Through IUSD's open enrollment program, UCI-based students may attend various schools in the district. Although the 1989 LRDP included land on-campus for an IUSD school, during the 2007 LRDP planning process, UCI and IUSD determined that a school on the campus would not be needed (LRDP FEIR VI page 4.11-10).

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**Discussion of Potential Project Impacts**

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As discussed in the LRDP FEIR, implementation of the campus development plan could result in an increase in the number of school age children on campus. Although it is possible that the replacement apartments could be occupied by families with school age children, a majority of whom would enroll in IUSD K-12 schools, the project would result in no increase in student housing units other than during the approximately two year period of the project's implementation when the number of beds would increase. The LRDP FEIR concluded that any new K-12 students on the campus as result of implementation of the LRDP would represent a small percentage of IUSD enrollments, which may not even be perceivable within its yearly student enrollment fluctuations. Additionally, two elementary schools and two middle schools are planned in the IUSD over the next several years and the additional capacity is expected to be sufficient to accommodate additional students living on campus. Thus, the project's impact would be less than significant and no mitigation is required. (LRDP FEIR VI page 4.11-10)

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required



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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**11.d) Parks: No Impact**

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**Relevant Elements of Project**

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As stated in the project description, the project is the redevelopment of an existing student-housing complex with new student apartments and accessory facilities. Recreation facilities readily available on campus include Aldrich Park, the Crawford Athletics Complex, and the Anteatr Recreation Center (ARC).

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**Discussion of Potential Project Impacts**

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As the proposed project would only temporarily increase the number of student beds within VPU-4, its effect on park services would essentially be equivalent to pre-project conditions. The demand for additional park facilities is not expected to increase because of the project. Thus, no impact would occur and no mitigation measures would be required.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**11.e) Other Public Facilities: No Impact**

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**Relevant Elements of Project**

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There are no public facilities within VPU-4 and none are planned as a component of the LRDP.

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**Discussion of Potential Project Impacts**

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As stated previously, the proposed project is the redevelopment of an existing student-housing complex with new student apartments and support facilities that is consistent with the land use policies contained in the 2007 LRDP and would not require physical alterations to any other UCI campus facilities or have an affect upon governmental facilities off campus. Thus, no impact to public facilities would occur and no mitigation measures would be required.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**11.f) Create Other Public Service Impacts: No Impact**

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**Relevant Elements of Project**

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No governmental or public service facilities are located on campus that is not operated as part of the UCI service network.

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**Discussion of Potential Project Impacts**

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As stated previously, the proposed project is the redevelopment of an existing student-housing complex with new student apartments and accessory facilities that is consistent with the land use policies contained in the 2007 LRDP and would not generate any unique demands for public services that could result in physical environmental impacts.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable



**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**12. RECREATION**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
Would the Project:					
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?					

**12.a) Physically Deteriorate Existing Facilities: Project Impact Adequately Addressed in LRDP EIR**

**Relevant Elements of Project**

As stated in the project description, the project is the redevelopment of an existing student-housing complex with new student apartments and support facilities, including recreation uses. Recreation facilities readily available on campus and available for use by the residents of VPU-4 include Aldrich Park, the Crawford Athletics Complex, and the Anteatier Recreation Center (ARC). Off-campus recreation opportunities are also available to the residents, including

numerous city, county, and state parks, and private health clubs located in the campus vicinity.

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### **Discussion of Potential Project Impacts**

As stated previously, although the proposed project would temporarily increase the availability of student beds on the campus prior to the completion of Phase II, it would not result in more student beds or greater population than analyzed in the LRDP FEIR. Thus, the project would not result in increased demand for recreation, either on or off campus, and no impacts would occur.

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### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

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### **Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

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### **Additional Project-Level Mitigation Measures**

None required

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### **Significance Determination after All Mitigation**

Not applicable

## **12.b) Construction of Recreational Facilities: No Impact**

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### **Relevant Elements of Project**

As stated in the Project Description, the project would replace existing recreational facilities and maintain VPU-4's walking/biking trail links to the campus trail network. The existing VPU-4 community garden may be relocated elsewhere within the community, to be determined by the Design/Build team in coordination with UCI.

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### **Discussion of Potential Project Impacts**

As discussed previously the proposed project would temporarily increase the number of student beds on the campus, but would not result in more student beds or greater population than analyzed in the LRDP FEIR. Thus, the project would not generate increased demand for recreation, which would require the construction or expansion of existing recreational facilities on or off-campus. As discussed in previous sections the project site is currently developed and includes recreational facilities and does not contain any significant biological or cultural resources (impacts related to the 300-foot linear drainage feature discussed in Topic 3 would be less than significant); therefore, redevelopment of VPU-4's existing recreational facilities would not have an adverse affect on the environment.

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None mitigation measures are required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**13. TRANSPORTATION/TRAFFIC**

Issues	(A) Potentially Significant Impact	(B) Project Impact Adequately Addressed in LRDP EIR	(C) Less Than Significant with Project-level Mitigation Incorporated	(D) Less Than Significant Impact	(E) No Impact
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?					✓

### **13.a) Conflict With An Applicable Plan, Ordinance Or Policy Establishing Measures Of Effectiveness For The Performance Of The Circulation System: No Impact**

#### **Relevant Elements of Project**

As stated in the Project Description, the proposed project would redevelop an existing student-housing complex with new apartments and support facilities. The completed project would also maintain VPU-4's bike and pedestrian trail connections to the existing campus trail network. The project would temporarily increase the number of student beds available on the campus prior to completion of Phase II but not result in more student beds or greater population than analyzed in the LRDP FEIR. Thus, the project would not be expected to affect the performance of either the on or off campus circulation systems.

A traffic evaluation was prepared for this Initial Study (Appendix C) to analyze the project's impact on the campus and surrounding transportation network. Consistent with the traffic study prepared for the 2007 LRDP (the applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system), this study derived data from the Irvine Transportation Analysis Model (ITAM) and the UCI Main Campus Traffic Model (MCTM). The ITAM is the principal tool used for transportation planning in the City of Irvine and was used in reference to off campus portions of the circulation network included in the LRDP traffic study. The MCTM is the model used for evaluating the on campus roadway system and is designed to forecast future traffic volumes on the UCI main campus roadway system and is based upon future land use as identified in the 2007 LRDP (LRDP FEIR VI page 4.13-27).

#### **Discussion of Potential Project Impacts**

The project traffic analysis considered the temporary increase in project traffic generation prior to the completion of Phase II when student beds available in VPU-4 would increase by approximately 200 beds to approximately 600 beds as the worst-case interim conditions. According to the evaluation, trips associated with these additional 200 beds would represent an increase of 425 daily trips, 23 AM peak hour trips, and 33 PM peak hour trips. As indicated in

the evaluation, these increases would be negligible, especially in the AM and PM peak hours. Consequently, the traffic evaluation concluded that the Project's worst-case interim conditions with 600 beds in VPU-4 are not expected to cause any adverse traffic impacts upon the on or off campus circulation system. Additionally, as discussed in the Project Description, the project is consistent with the LRDP and the analysis completed for this Initial Study has not identified any new impacts not anticipated in the LRDP FEIR related to an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system on or off campus.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**13.b) Congestion Management: No Impact**

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**Relevant Elements of Project**

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The nearest elements of the Orange County Congestion Management Plan (CMP) highways and arterials network are Jamboree Road and MacArthur Boulevard, located approximately 2.0 miles and 2.7 miles from the project site. CMP monitoring is conducted at the intersections of Jamboree Road/I-405 northbound and southbound ramps, and at Jamboree Road/ MacArthur Boulevard (LRDP FEIR VI page 4.13-23).

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**Discussion of Potential Project Impacts**

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As stated in 13.a, project-generated traffic would have no adverse impacts. Consequently, the proposed project would not affect any of the three nearest CMP intersections, and an assessment of impacts under CMP guidelines is not required.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**13.c) Air Traffic Patterns: No Impact**

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**Relevant Elements of Project**

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As stated previously, the proposed project site is located approximately 3 miles southeast of JWA. The initial study prepared for the 2007 LRDP concluded that the campus is not situated under the Preferred Arrival or Departure Tracks associated with the airport and that future campus buildings would not penetrate the 100:1 Imaginary Surface for designated flight patterns (LRDP FEIR VII page 25).

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**Discussion of Potential Project Impacts**

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Implementation of the 2007 LRDP was determined not to have an affect on existing air traffic patterns or volumes and the issue was adequately addressed in the IS for the LRDP (LRDP FEIR VI page 4.13-61).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable



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**13.d) Hazards Due to a Design Feature: No Impact**

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**Relevant Elements of Project**

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The proposed project may demolish and replace the housing complex' current access points. As stated in the Project Description, the Design/Build Team in coordination with UCI would determine demolition and reconstruction/replacement of the project's features.

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**Discussion of Potential Project Impacts**

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The IS for the LRDP indicated that design features associated with LRDP implementation projects, including the proposed project, would be compatible with existing campus transportation plans and adjacent land uses (LRDP FEIR VI page 4.13-61). Thus, the LRDP FEIR determined that no impacts would occur from hazards due design features or incompatible uses and the issue was adequately addressed in the IS for the LRDP. (LRDP FEIR VI page 4.13-61).

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**13.e) Inadequate Emergency Access: No Impact**

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**Relevant Elements of Project**

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The proposed project may demolish and replace the housing complex' current emergency access points. As stated in the Project Description, demolition and reconstruction/replacement of the project's features would be determined by the Design/Build Team in coordination with UCI.

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**Discussion of Potential Project Impacts**

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Development associated with implementation of the 2007 LRDP, including the proposed project, is subject to review by the UCI Fire Marshal to ensure that adequate emergency access is incorporated (LRDP FEIR VI page 4.13-61). The IS for the LRDP indicated that with review of

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the proposed project by the UCI Fire Marshal, no impacts related to emergency access would occur (LRDP FEIR VI page 4.13-61).

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#### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Not applicable

#### **13.f) Public Transit, Bicycle, or Pedestrian Facilities: No Impact**

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##### **Relevant Elements of Project**

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The proposed project would demolish and replace VPU-4's existing bike and pedestrian pathways and maintain links to the existing campus trail network. The existing campus bike and pedestrian pathways would not be adversely affected by construction or operation of the proposed project. New bike racks or other bicycle storage facilities would be provided to meet projected demand. Bus and shuttle service to and from VPU-4 would not be interrupted during construction and would continue after project completion.

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##### **Discussion of Potential Project Impacts**

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UCI implements a broad range of infrastructure to promote bicycle travel to and within the campus, including a network of existing and planned on-street bikeways, off-street trails, grade separated crossings, and bicycle parking facilities. Existing and proposed campus bike and pedestrian trails are depicted in the 2007 LRDP on Figure 5-5 (page 74) and Figure 5-6 and 5.7 (pages 76 and 77) respectively. UCI administers an extensive program of Transportation Demand Management (TDM) measures that encourage the use of alternate modes of transportation, including walking, bicycling, and riding the UCI shuttle, other local shuttle systems, train, or bus. As the project would maintain VPU-4's bike and pedestrian links to the existing campus trail network and not interrupt campus bus or shuttle service, no impacts related to conflicts with alternative transportation would occur.

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#### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**14. UTILITIES AND SERVICE SYSTEMS**

Issues	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					✓

**14.a) RWQCB Wastewater Treatment Requirements: No Impact**

**Relevant Elements of Project**

Wastewater from the proposed project would be discharged in the same manner as currently occurs on the project site, via the campus sanitary sewer network, which conveys flows to the Irvine Ranch Water District (IRWD) wastewater treatment system. Wastewater from this portion of the campus is treated at the Michelson Water Reclamation Plant (MWRP), which provides a tertiary level of treatment, in accordance with the wastewater treatment standards enforced by the Santa Ana Regional Water Quality Control Board (LRDP FEIR VI page 4.14-1).

**Discussion of Potential Project Impacts**

The quantity and character of wastewater flows from the proposed project would be the same as those currently generated from VPU-4 and would be consistent with outflows that are typical of residential development throughout the IRWD service area. No new kinds of wastewater collection or treatment systems or processes would be required to dispose of this project's wastewater. This project would have no effect with respect to the wastewater treatment requirements administered by the Regional Water Quality Control Board.

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

**Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

**Additional Project-Level Mitigation Measures**

None required

**Significance Determination after All Mitigation**

Not applicable

**14.b) Construction of New Water or Wastewater Treatment Facilities: No Impact**

### **Relevant Elements of Project**

Water and wastewater infrastructure services provided by IRWD are in place and operational to serve existing VPU-4. Wastewater infrastructure is provided as describe above in 14.b. Potable water is distributed to the campus from IRWD's transmission system through 8-, 10- and 12-inch water mains to UCI's distribution system and is served by five metered connections. The distribution system consists of two primary pressure zones, called IRWD Zones I and III. VPU-4 is served by the Zone III system 10-inch metered connection adjacent the East Campus (LRDP FEIR VI page 4.14-3).

### **Discussion of Potential Project Impacts**

As stated in the Project Description, the proposed project would temporarily increase the number of student beds available on the campus prior to completion of Phase II but would not result in more student beds or greater population than analyzed in the LRDP FEIR. Therefore, demand for water and wastewater would be within existing campus planning projections. The project would not require the construction or expansion of new mainline water or wastewater facilities that would result in significant environmental effects.

### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

None required

### **Significance Determination after LRDP EIR Mitigation Measures**

Not applicable

### **Additional Project-Level Mitigation Measures**

None required

### **Significance Determination after All Mitigation**

Not applicable

## **14.c) Stormwater Drainage Facilities: Less Than Significant Impact**

### **Relevant Elements of Project**

As stated previously, the proposed project site is an existing student housing complex, which already includes storm drainage conveyances. Construction of the project would likely result in demolition of elements of this system. The approximately 300-foot drainage channel discussed in previous sections would be converted to a storm drainpipe. Upon completion of the project, VPU-4 would reconnect to the existing off-site facilities, which would not require expansion to serve the project.

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**Discussion of Potential Project Impacts**

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Implementation of the proposed project would not result in a substantial increase in the amount of impervious surface on the site that would generate additional runoff compared to VPU-4's existing conditions. All of the proposed storm drainage improvements would be placed within previously developed areas and would not result in any additional significant impacts. The project would not require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities, which could cause significant environmental effects. Conversion of the drainage channel to a piped conveyance would not be anticipated to increase flows such that off-site receiver facilities would require expansion. Potential impacts with respect to this feature are discussed in previous sections. Thus, construction of the project's stormwater drainage components would not result in unique or more extensive environmental impacts than any other aspect of this project's infrastructure system, which would be less than significant. No mitigation measures would be required.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

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**14.d) Water Supplies: No Impact**

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**Relevant Elements of Project**

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As stated in the project description the proposed project would redevelop an existing student housing complex with new apartments. The proposed project would temporarily increase the number of student beds on the campus prior to completion of Phase II but not result in more student beds or greater population than analyzed in the LRDP FEIR. As an existing student housing facility on campus, VPU-4 is already connected to the campus potable water and reclaimed water supply and distribution system. UCI's water supply, including potable and reclaimed water is provided by the IRWD. UCI's 2006 average daily domestic water demand was 1.8 million gallons per day (mgd) and is projected to increase with full implementation of the 2007 LRDP, to 4.9 mgd. UCI's 2006 reclaimed water demand was 0.6 mgd and is projected

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to increase to 1.2 mgd with full implementation of the 2007 LRDP (LRDP FEIR VI page 4.14-17).

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**Discussion of Potential Project Impacts**

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The IRWD has developed an Urban Water Management Plan, which projects district-wide water supply availability and demand through 2030. IRWD staff in consultation with UCI reviewed projected water service demand related to implementation of the 2007 LRDP for consistency with the UWMP and concluded that water supply reliability would not be compromised (LRDP FEIR VI page 4.14-17). This conclusion presumes that irrigation needs throughout the campus would continue to be fully met through reclaimed water supplies. The project would replace the existing VPU-4 beds with approximately the same number of beds currently on site and as stated in the Project Description is consistent with the 2007 LRDP. Therefore, the project would not create demand for water not presently existing on-site and would result in less than significant impacts to water supplies.

---

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required.

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**14.e) Wastewater Capacity: No Impact**

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**Relevant Elements of Project**

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There are presently no wastewater collection or disposal/treatment facilities on the project site. As stated previously, the project would connect to existing sewer lines and convey wastewater for treatment at the MWRP located northwest of UCI and operated by the IRWD.

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**Discussion of Potential Project Impacts**

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The MWRP currently treats up to 18 million gallons per day (mgd) of wastewater. An additional upgrade to 33 mgd is scheduled to be completed in 2025. IRWD forecast a total service area demand for wastewater treatment of 26.11 mgd by 2025, including the projected increase associated with full implementation of the 2007 LRDP. With the 33-mgd upgrade, the MWRP

would have sufficient capacity to accommodate the 2007 LRDP's anticipated sewage generation, along with wastewater generated throughout the rest of the IRWD service area. Therefore, the impact to wastewater treatment capacity from implementation of the 2007 LRDP was determined to be less than significant (LRDP FEIR VI pages 4.14-12/13). The project would replace the existing VPU-4 beds with approximately the same number of beds currently on site and as stated in the Project Description is consistent with the 2007 LRDP. Therefore, the project would not be anticipated to create demand for water not presently existing on-site and would result in less than significant impacts to wastewater capacity.

---

**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**14.f) Landfill Capacity: No Impact**

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**Relevant Elements of Project**

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Non-hazardous solid waste generated in VPU-4 and throughout the campus is disposed of off-site at the County of Orange Frank R. Bowerman (FRB) Landfill, the primary disposal site for solid waste in the City of Irvine (LRDP FEIR VI page 4.14.-18). In 2005, a total of 2,238,050 tons of waste was disposed of at the FRB Landfill. UCI generated approximately 4,960 tons of solid non-hazardous waste in 2005, representing approximately 0.22 percent of the annual total deposited at the FRB Landfill. The FRB Landfill is currently permitted to operate and accept refuse approximately through the year 2022 with a daily maximum of no more than 8,500 tons per day. The County's Integrated Waste Management Department (IWMD) is proposing to expand the capacity of the landfill by 104 million cubic yards, to increase its daily limit to 11,500 tons. This added capacity is planned to handle Orange County's growing population, including an expanded UCI campus, and extend the life of the FRB Landfill to 2053 (LRDP FEIR VI pages 4.14-18/19).

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**Discussion of Potential Project Impacts**

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This project's construction program would recycle more than 50% of all construction wastes.



Refuse collected from the new apartments would be managed in accordance with UCI policy to divert residential wastes from landfill disposal. New apartment buildings, accessory structures, and child-care centers would be provided with centralized containers for trash and recyclable materials collection. As such, this project would not generate wastes that would exceed the permitted capacity of the FRB (LRDP FEIR VI page 4.14-19). The project would replace the existing VPU-4 beds with approximately the same number of beds currently on site and as stated in the Project Description is consistent with the 2007 LRDP. Therefore, the project is not anticipated to generate solid waste volume that exceeds the existing on-site generation and would result in no impacts related to landfill capacity.

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#### **Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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#### **Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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#### **Additional Project-Level Mitigation Measures**

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None required

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#### **Significance Determination after All Mitigation**

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Not applicable

#### **14.g) Solid Waste Regulations: No Impact**

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#### **Relevant Elements of Project**

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UC is not subject to Assembly Bill 939 or other local agency regulations pertaining to solid waste management; nonetheless, a sustainability policy, as described in Section 4.4.1.3 of the LRDP FEIR, has been adopted requiring campuses to undertake aggressive programs to reduce solid waste generation and disposal (LRDP FEIR VI 4.14-20).

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#### **Discussion of Potential Project Impacts**

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The proposed residences would generate a variety of typical household municipal wastes, which may be disposed of at permitted landfills. As noted in the previous response, new apartment buildings, accessory structures, and child-care centers would be provided with centralized containers for trash and recyclable materials collection. The project would not require any unique waste collection or disposal methods or facilities and would not conflict with or obstruct any federal, state or local programs to reduce solid waste generation and otherwise manage wastes; no impacts would occur.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

---

None required

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**Significance Determination after All Mitigation**

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Not applicable

**14.h) Other Utility and Service System Impacts: No Impact**

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**Relevant Elements of Project**

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Not applicable

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**Discussion of Potential Project Impacts**

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As stated in the project description the proposed project would redevelop an existing student housing complex with new apartments. The proposed project would temporarily increase the number of student beds on the campus prior to completion of Phase II but not result in more student beds or greater population than analyzed in the LRDP FEIR. Thus, the proposed project would not generate any unique demands for utilities or services, or require any unusual utilities construction practices that could result in other physical environmental impacts beyond those discussed in the preceding responses to items 14a-g.

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**Applicable LRDP EIR Mitigation Measures Incorporated in Project**

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None required

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**Significance Determination after LRDP EIR Mitigation Measures**

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Not applicable

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**Additional Project-Level Mitigation Measures**

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None required

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**Significance Determination after All Mitigation**

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Not applicable

**15. MANDATORY FINDINGS OF SIGNIFICANCE**

	(A)	(B)	(C)	(D)	(E)
	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Issues					
<p>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):</p>					
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?					✓
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?				✓	

**15.a) Degrade the Environment, Reduce Habitat or Wildlife Populations, Eliminate Examples of California History: Less Than Significant Impact**

The project site is an existing student housing facility in an urbanized area of the UCI East

Campus sector. No significant environmental impacts of any kind have been identified in the responses to questions regarding project effects organized under the preceding 14 topics. Compliance with previously mentioned LRDP FEIR Mitigation Measures Bio-3A, B, C and 4A would mitigate impacts related to the drainage channel located in the project's southeastern corner. There are no historic resources on the site and in the event of a discovery during grading; compliance with LRDP MM Cul-1C would ensure proper evaluation by a qualified archaeologist to recover any information of scientific importance.

#### **15.b) Disadvantage of Long-Term Environmental Goals: No Impact**

This project involves the redevelopment of an existing student residential community with replacement beds, in accordance with the land use policies established by the 2007 LRDP. It would accomplish key student housing objectives and support the University's sustainability policies through rehabilitation of on campus housing and incorporation of numerous green building elements to reduce energy consumption, greenhouse gas emissions, and water demand.

#### **15.c) Cumulatively Considerable Impacts: Less Than Significant Impact**

Long-term environmental consequences resulting from the cumulative effect of completing campus development through implementation of the 2007 LRDP were thoroughly evaluated in the 2007 LRDP FEIR. As discussed in the Project Description, the project is consistent with the land use policies of the LRDP. No new or more severe impacts not anticipated in the LRDP FEIR have been identified as a result of the analysis completed for this Initial Study.

The traffic evaluation prepared for this project concluded that even with worst-case interim conditions prior to completion of Phase II, no adverse traffic impacts would occur. Short-term and long-term air quality impacts were assessed relative to the significance thresholds recommended by the South Coast Air Quality Management District. These thresholds are intended to assess project level and cumulative effects, due to the complex chemical and atmospheric interactions that produce air pollution and the regional scale in which these interactions take place. As discussed in the responses to items 2.a-2f, no significant air quality impacts are projected during earth-moving or other construction activities or as a consequence of energy consumption, traffic, or property maintenance over the operating life of the project.

No other development or capital projects are currently planned within this area of the East Campus sector during the next four years while this project is under construction. Completion of the East Campus Student Apartments Phase 3 - Site 1 project located adjacent VPU-4 along Adobe Circle North and Site 2 project along Arroyo Drive are anticipated to be completed prior to Phase I commencing. The proposed project would not result in any significant impact that cannot be mitigated to level that is less than significant. The analysis in this IS/MND has

determined that the proposed project would have no impacts that are individually limited but that are nonetheless cumulatively considerable, that were not adequately addressed in the LRDP FEIR.

**15.d) Direct or Indirect Effects on Humans: Less Than Significant Impact**

No significant impacts on human beings have been identified in this Initial Study. Short-term adverse impacts involving construction phase dust, exhaust emissions, and noise would be less than significant with the incorporation and implementation of the identified routine control measures set forth in the LRDP FEIR and the project specific measures included herein. There is no evidence of site contamination with hazardous wastes or substances and this residential development project would not emit hazardous air emissions or involve consumption, generation, transport or disposal of dangerous quantities of hazardous materials or wastes. Access by emergency vehicles would be maintained throughout the construction phases and the developed site would not constrain emergency access.

## **SUPPORTING INFORMATION SOURCES**

UCI Campus & Environmental Planning, *University of California Irvine 2007 Long Range Development Plan*. November 2007.

UCI Campus & Environmental Planning, *University of California Irvine 2007 Long Range Development Plan, Final Environmental Impact Report*. November 2007.

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**APPENDIX A**  
**AIR QUALITY ANALYSIS**

**Air Quality Assessment For:**  
**VERANO PLACE HOUSING**  
**REDEVELOPMENT**

**Prepared For:**  
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**March 15, 2010**  
**Report #510901AQ0**

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## **1.0 Existing Air Quality**

### **1.1 Project Description**

Verano Place Housing is a graduate and family apartment community located on the east side of the University of California, Irvine campus bounded by Adobe Circle Road North to the north, Palo Verde Drive to the south, California Avenue to the east and East Peltason Drive to the west. Exhibit 1 presents a vicinity map showing the project location and Exhibit 2 shows a map of the Verano Place Housing and the portion proposed for redevelopment by the project. The project area includes approximately 400 bedrooms in approximately 21 two-story apartment buildings, an infant/toddler center of approximately 2,608 square feet, The Nest (building 4700) of approximately 4,320 square feet, and four laundry buildings with a total floor area of approximately 2,625 square feet. The project proposes removing these existing buildings and replacing them. The residential apartments would be replaced with four to six story buildings and the other existing buildings would be replaced with similar sized structures. A new approximate 8,931 square foot community building would be added to the site.

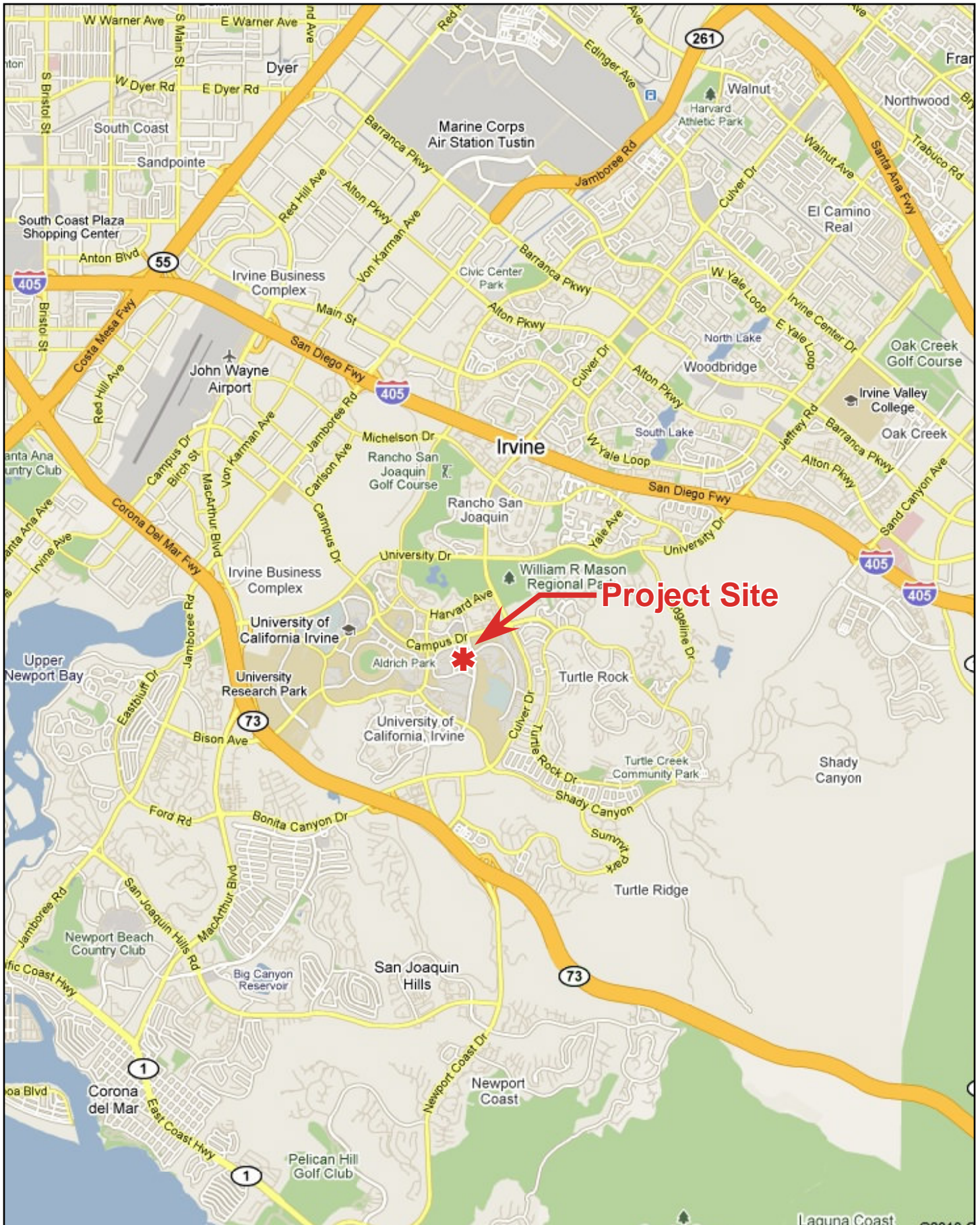
The project would be undertaken in two phases. In the first phase approximately half of the existing apartment buildings and associated hardscape would be demolished and the replacement apartment buildings and other structures would be constructed. This work is expected to begin in September 2010 and be completed in September 2012. During the second phase, the remaining existing structures would be demolished. This work is expected to begin in September 2014 and be completed in November 2014. Upon completion of the project the project site will contain the same uses (i.e., the same number of bedrooms and square footage of other uses) except for the added community building. For two years, between September 2012 and September 2014, the project site will contain 200 additional bedrooms over existing and ultimate conditions.

This report analyzes the potential air quality impacts associated with this project. Regional air quality impacts from construction and operation of the proposed project are analyzed, as are potential local air quality impacts.

### **1.2 Local, State, and Federal Air Quality Agencies**

The proposed project is located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. The basin is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains. To the north lie the San Gabriel mountains, to the north and east the San Bernardino Mountains, to the southeast the San Jacinto Mountains and to the south the Santa Ana Mountains. The basin forms a low plain and the mountains channel and confine air flow which trap air pollutants.

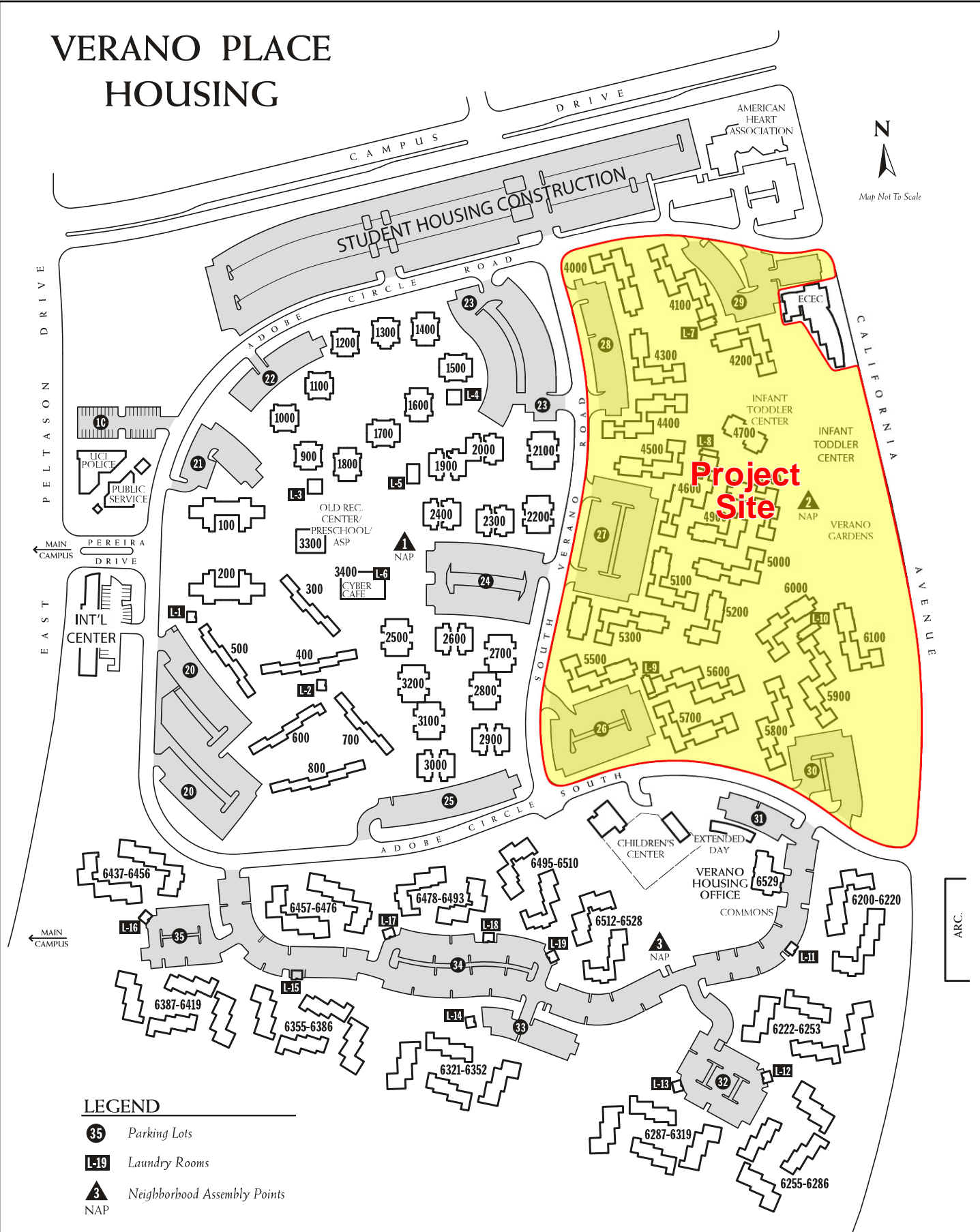
The primary agencies responsible for regulations to improve air quality in the SCAB are the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The Southern California Association of Governments (SCAG) is an important partner to the SCAQMD, as it is the designated metropolitan planning authority for the area and produces estimates of anticipated future growth and vehicular travel in the basin which are used for air quality planning. The SCAQMD sets and enforces regulations for non-vehicular sources of air pollution in the basin and works with SCAG to develop and implement Transportation Control Measures (TCM). TCM measures are intended to reduce and improve vehicular travel and associated pollutant emissions.



**Project Site**



# VERANO PLACE HOUSING



## LEGEND

- 35** Parking Lots
- L-19** Laundry Rooms
- ▲** Neighborhood Assembly Points  
NAP



CARB was established in 1967 by the California Legislature to attain and maintain healthy air quality, conduct research into the causes and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State. CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products. It sets the health based California Ambient Air Quality Standards (CAAQS) and monitors air quality levels throughout the state. The board identifies and sets control measures for toxic air contaminants. The board also performs air quality related research, provides compliance assistance for businesses, and produces education and outreach programs and materials. CARB provides assistance for local air quality districts, such as SCAQMD.

The U.S. Environmental Protection Agency (U.S. EPA) is the primary federal agency for regulating air quality. The EPA implements the provisions of the Federal Clean Air Act (FCAA). This Act establishes national ambient air quality standards (NAAQS) that are applicable nationwide. The EPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS.

The CCAA required all air pollution control districts in the state to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. The AQMP is incorporated into the SIP by CARB to satisfy the FCAA requirements discussed above. The AQMP is discussed further in Section 1.5.

### **1.3 Criteria Pollutants and Standards**

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone (O<sub>3</sub>), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

Under the California Clean Air Act (CCAA), the California Air Resources Board have established California Ambient Air Quality Standards (CAAQS) to protect the health and welfare of Californians. State standards have been established for the six criteria pollutants as well as four additional pollutants; visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 1 presents the state and national ambient air quality standards. A brief explanation of each pollutant and their health effects is presented follows.

**Table 1**  
**Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standards <sup>1,3</sup>	Federal Standards <sup>2</sup>	
			Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>
Ozone (O <sub>3</sub> ) <sup>8</sup>	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	--	--
	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> )	Same as Primary
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as Primary
	AAM <sup>6</sup>	20 µg/m <sup>3</sup>	--	Same as Primary
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>8</sup>	24 Hour	--	35 µg/m <sup>3</sup>	Same as Primary
	AAM <sup>6</sup>	12 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	None
	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )	--	--
Nitrogen Dioxide (NO <sub>2</sub> )	AAM <sup>6</sup>	0.030 ppm (56 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary
	1 Hour	0.18 ppm (338 µg/m <sup>3</sup> )	--	--
Sulfur Dioxide (SO <sub>2</sub> )	AAM <sup>6</sup>	--	0.030 ppm (80 µg/m <sup>3</sup> )	--
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm (365 µg/m <sup>3</sup> )	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m <sup>3</sup> )
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )	--	--
Lead <sup>7,9</sup>	30 day Avg.	1.5 µg/m <sup>3</sup>	--	--
	Rolling 3-Month Average	--	0.15 µg/m <sup>3</sup>	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km -- visibility 10 miles (0.07 per km -- 30 miles for Lake Tahoe)	<b>No Federal Standards</b>	
Sulfates	24 Hour	25 µg/m <sup>3</sup>		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )		
Vinyl Chloride <sup>7</sup>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )		

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

2. National standards (other than ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6. Annual Arithmetic Mean

7. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

8. On March 12, 2008 EPA lowered the 8-hour ozone standard to 0.075 ppm from 0.08 ppm. On January 19, 2010, EPA announced that it was delaying implementation of the 2008 ozone standard and considering adopting a revised primary ozone standard with an 8-hour average concentration in the 0.060 to 0.070 ppm range and a secondary standard based on a new cumulative seasonal standard. The final standard is anticipated to be adopted by August 31, 2010.

9. On October 15, 2008, EPA lowered the lead standard to 0.15 µg/m<sup>3</sup> from 1.5 µg/m<sup>3</sup>. Further the averaging time was changed from a calendar quarter to a rolling three-month average. Attainment designations are to be issued by October 2010 with attainment plans due 18 months later.

-- No Standard

### **1.3.1 Ozone (O<sub>3</sub>)**

Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between volatile organic compounds (VOC) (also referred to as reactive organic gasses (ROG)) and nitrogen oxides (NO<sub>x</sub>), which occur only in the presence of bright sunlight. Sunlight and hot weather cause ground-level ozone to form in the air. As a result, it is known as a summertime air pollutant. Ground-level ozone is the primary constituent of smog. Because ozone is formed in the atmosphere, high concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels are unhealthy. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breathe, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone can have detrimental effects on plants and ecosystems. These effects include:

- interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, national parks, and recreation areas; and
- reducing crop yields and forest growth, potentially impacting species diversity in ecosystems.

### **1.3.2 Particulate Matter (PM<sub>10</sub> & PM<sub>2.5</sub>)**

Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles smaller than 10 microns in size (PM<sub>10</sub>) and smaller than or equal to 2.5 microns (PM<sub>2.5</sub>). The size of the particulate matter is referenced to the aerodynamic diameter of the particulate. Smaller particulates are of greater concern because they can penetrate deeper into the lungs than large particles.

The principal health effect of airborne particulate matter is on the respiratory system. Short term exposures to high PM<sub>2.5</sub> levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long term exposures to high PM<sub>2.5</sub> levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposure to high PM<sub>10</sub> levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms and possible premature mortality. The EPA has concluded that available evidence does not suggest an association between long-term exposure to PM<sub>10</sub> at current ambient levels and health effects.

PM<sub>2.5</sub> is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides (NO<sub>x</sub>) sulfur oxides (SO<sub>x</sub>) and volatile organic compounds (VOC). PM<sub>10</sub> is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the re suspension of dusts most typically through construction activities and vehicular travels. PM<sub>2.5</sub> can remain suspended in the atmosphere for days and weeks and can be transported long distances. PM<sub>10</sub> generally settles out of the atmosphere rapidly and are not readily transported over large distances.

### **1.3.3 Carbon Monoxide (CO)**

Carbon monoxide is a colorless and odorless gas, which in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow-moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance (i.e., up to 600 feet or 185 meters) of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

### **1.3.4 Nitrogen Dioxide (NO<sub>2</sub>)**

Nitrogen gas, normally relatively inert (unreactive), comprises about 80% of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides (NO<sub>x</sub>). Nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide in the atmosphere. Nitrogen dioxide (NO<sub>2</sub>) is a red-brown pungent gas. Motor vehicle emissions are the main source of NO<sub>x</sub> in urban areas.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO<sub>2</sub> can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between NO<sub>2</sub> concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

NO<sub>x</sub> is a combination of primarily NO and NO<sub>2</sub>. While the NAAQS only addresses NO<sub>2</sub>, NO and the total group of nitrogen oxides is of concern. NO and NO<sub>2</sub> are both precursors in the formation of ozone and secondary particulate matter as discussed in Sections 1.3.1 and 1.3.2. Because of this and that NO emissions largely convert to NO<sub>2</sub>, NO<sub>x</sub> emissions are typically examined when assessing potential air quality impacts.

### **1.3.5 Sulfur Dioxide (SO<sub>2</sub>)**

Sulfur oxides (SO<sub>x</sub>) constitute a class of compounds of which sulfur dioxide (SO<sub>2</sub>) and sulfur trioxide (SO<sub>3</sub>) are of greatest importance. Ninety-five percent of pollution related SO<sub>x</sub> emissions are in the form of SO<sub>2</sub>. SO<sub>x</sub> emissions are typically examined when assessing potential air

quality impacts of  $\text{SO}_2$ . Combustion of fossil fuels for generation of electric power is the primary contributor of  $\text{SO}_x$  emissions. Industrial processes, such as nonferrous metal smelting, also contribute to  $\text{SO}_x$  emissions.  $\text{SO}_x$  is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing  $\text{SO}_x$  emissions from vehicles.

$\text{SO}_2$  combines easily with water vapor, forming aerosols of sulfurous acid ( $\text{H}_2\text{SO}_3$ ), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid ( $\text{H}_2\text{SO}_4$ ). Peak levels of  $\text{SO}_2$  in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of  $\text{SO}_2$  gas and particles cause respiratory illness and aggravate existing heart disease.  $\text{SO}_2$  reacts with other chemicals in the air to form tiny sulfate particles which are measured as  $\text{PM}_{2.5}$ . The health effects of  $\text{PM}_{2.5}$  are discussed in Section 1.3.2.

### **1.3.6 Lead (Pb)**

Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood-forming or hematopoietic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are not applied to transportation projects.

### **1.3.7 Visibility Reducing Particulates**

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The Statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

### **1.3.8 Sulfates( $\text{SO}_4^{2-}$ )**

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and / or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide ( $\text{SO}_2$ ) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of  $\text{SO}_2$  to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

### **1.3.9 Hydrogen Sulfide (H<sub>2</sub>S)**

Hydrogen sulfide (H<sub>2</sub>S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H<sub>2</sub>S at levels above the standard will result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for H<sub>2</sub>S is adequate to protect public health and to significantly reduce odor annoyance.

### **1.3.10 Vinyl Chloride (Chloroethene)**

Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans.

## **1.4 South Coast Air Basin Air Quality Attainment Designations**

Based on monitored air pollutant concentrations, the U.S. EPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS respectively. Table 2 lists the current attainment designations for the SCAB. For the Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or nonattainment.

Table 2 shows that the U.S. EPA has designated SCAB as Severe-17 non-attainment for ozone, serious non-attainment for PM<sub>10</sub>, non-attainment for PM<sub>2.5</sub>, and attainment/maintenance for CO and NO<sub>2</sub>. The basin has been designated by the state as non-attainment for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. For the federal designations, the qualifiers, Severe-17 and Serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is currently designated as in attainment of the Federal SO<sub>2</sub> and lead NAAQS as well as the state CO, NO<sub>2</sub>, SO<sub>2</sub>, lead, hydrogen sulfide, and vinyl chloride CAAQS. CARB has proposed redesignating the basin as non-attainment for state NO<sub>2</sub> AAQS and the Los Angeles County portion of SCAB as non-attainment for both the state and federal standards. These proposed redesignations are discussed further below.

In July 1997, U.S. EPA issued a new ozone NAAQS of 0.08 ppm using an 8-hour averaging time. Implementation of this standard was delayed by several lawsuits. Attainment/non-attainment designations for the new 8-hour ozone standard were issued on April 15, 2004 and became effective on June 15, 2005. The SCAB was designated severe-17 non-attainment, which requires attainment of the Federal Standard by June 15, 2021. As a part of the designation, the EPA announced that the 1-hour ozone standard would be revoked in June of 2005. Thus, the 8-hour ozone standard attainment deadline of 2021 supersedes and replaces the previous 1-hour ozone standard attainment deadline of 2010.

**Table 2**  
**Designations of Criteria Pollutants for the SCAB**

Pollutant	Federal	State
Ozone (O <sub>3</sub> )	Severe-17 Nonattainment (2021)	Nonattainment
Respirable Particulate Matter (PM <sub>10</sub> )	Serious Nonattainment (2006)	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Nonattainment (2014 or 2019 with extension)	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO <sub>2</sub> )	Attainment/Maintenance (1995)	Attainment*
Sulfur Dioxide (SO <sub>2</sub> )	Attainment	Attainment
Lead	Attainment*	Attainment*
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

\* Proposed for redesignation to non-attainment

The SCAQMD and CARB requested that U.S. EPA change the nonattainment status of the 8-hour ozone standard to extreme and this request was granted in August 2009. This change of classifications extends the attainment date by three years to 2024 but also requires the SCAQMD to incorporate more stringent air quality regulations such as lower permitting thresholds and implementing reasonably available control technologies at more sources. This change also allows for the use of undefined reductions (i.e. “black box”) based on the anticipated development of new control technologies or improvement of existing technologies in the attainment plan.

On March 12, 2008, U.S. EPA announced that it was lowering the 8-hour average NAAQS for ozone to 0.075 ppm. On September 19, 2009 the U.S. EPA announced that it would re-consider the revised standard to ensure that the standards are clearly grounded in science, protect public health with an adequate margin of safety, and are sufficient to protect the environment. On January 19, 2010, U.S. EPA announced that it was considering adopting a primary ozone standard with an 8-hour averaging time in the 0.060 to 0.070 ppm range. Further, a cumulative seasonal standard was proposed as the secondary standard to provide increased protection against ozone related adverse impacts on vegetation and forested ecosystems. The final revised standard is expected to be announced by August 31, 2010.

On April 28, 2005, CARB adopted an 8-hour ozone standard of 0.070 ppm. The California Office of Administrative Law approved the rulemaking and filed it with the Secretary of State on April 17, 2006. The standard became effective on May 17, 2006. California has retained the 1-

hour concentration standard of 0.09 ppm. To be redesignated as attainment by the state the basin will need to achieve both the 1-hour and 8-hour ozone standards.

The SCAB was designated as moderate non-attainment of the PM<sub>10</sub> standards when the designations were initially made in 1990 with a required attainment date of 1994. In 1993, the basin was redesignated as serious non-attainment with a required attainment date of 2006 because it was apparent that the basin could not meet the PM<sub>10</sub> standard by the 1994 deadline. At this time, the Basin has met the PM<sub>10</sub> standards at all monitoring stations except the western Riverside where the annual PM<sub>10</sub> standard has not been met. However, on September 21, 2006, the U.S. EPA announced that it was revoking the annual PM<sub>10</sub> standard as research had indicated that there were no considerable health effects associated with long-term exposure to PM<sub>10</sub>. With this change, the basin is technically in attainment of the federal PM<sub>10</sub> standards. SCAQMD has begun holding public hearings to consider a request to re-designate the basin as attainment for PM<sub>10</sub> and to develop a maintenance plan. In July 1997, U.S. EPA issued NAAQS for fine particulate matter (PM<sub>2.5</sub>). The PM<sub>2.5</sub> standards include an annual standard set at 15 micrograms per cubic meter (µg/m<sup>3</sup>), based on the three-year average of annual mean PM<sub>2.5</sub> concentrations and a 24-hour standard of 65 µg/m<sup>3</sup>, based on the three-year average of the 98th percentile of 24-hour concentrations. Implementation of these standards was delayed by several lawsuits. On January 5, 2005, EPA took final action to designate attainment and nonattainment areas under the NAAQS for PM<sub>2.5</sub> effective April 5, 2005. The SCAB was designated as non-attainment with an attainment required as soon as possible but no later than 2010. EPA may grant attainment date extensions of up to five years in areas with more severe PM<sub>2.5</sub> problems and where emissions control measures are not available or feasible. It is likely that the SCAB will need this additional time to attain the standard

On September 21, 2006, the U.S. EPA announced that the 24-hour PM<sub>2.5</sub> standard was lowered to 35 µg/m<sup>3</sup>. The EPA announced attainment/non-attainment designations for the revised PM<sub>2.5</sub> standard on November 13, 2009 with an effective date of December 14, 2009. The SCAB was found to be in non-attainment of the standard. The SCAQMD has three years from the effective date to submit a plan demonstrating attainment of the standard by December 2014, although an extension of up to five years could be granted by the U.S. EPA.

The Federal attainment deadline for CO was to be December 31, 2000 but at that time the basin still had measured exceedances of the CO NAAQS. The basin was granted an extension to attain the standard and has not had any violations of the federal CO standards since 2002. In March 2005, the South Coast AQMD adopted a CO Redesignation Request and Maintenance Plan. On May 11, 2007, the U.S. EPA announced approval of the Redesignation Request and Maintenance Plan and that, effective June 11, 2007, the SCAB would be re-designated as attainment/maintenance for the federal CO NAAQS. The plan provides for maintenance of the federal CO air quality standard until at least 2015 and commits to revising the Plan in 2013 to ensure maintenance through 2025.

The federal annual NO<sub>2</sub> standard was met for the first time in 1992 and has not been exceeded since. The SCAB was redesignated as attainment for the federal NO<sub>2</sub> AAQS in 1998. The basin will remain a maintenance/attainment area until 2018, assuming the federal NO<sub>2</sub> standard is not exceeded. The basin was redesignated from non-attainment of the state NO<sub>2</sub> standard in 1994 and has been designated as attainment since that time. In 2007 CARB revised the state 1-hour NO<sub>2</sub> standard from 0.25 ppm to 0.18 ppm and established an annual average NO<sub>2</sub> standard of 0.030 ppm. In November 2009, CARB proposed redesignating the SCAB as non-attainment for the state NO<sub>2</sub> standard due to exceedances of the annual average standard measured at the Lynwood, Pomona, and Upland monitoring stations in the 2006-2008 time period. The



Lynwood and Upland stations exceeded the standard in 2006 but were below the standard in 2007 and 2008. The Pomona station exceeded the standard in 2006 and 2007 but was below the standard in 2008. In all cases the exceedances were due to levels 0.001 ppm above the standard. The 1-hour standard has not been exceeded in the SCAB.

Generally, lead concentrations throughout the SCAB have been lower than the state and federal lead standards since the early 1980's due to the removal of lead from automobile fuel. In 1990, U.S. EPA requested the SCAQMD to collect lead concentrations near several large lead handling (battery recycling) facilities and in 1992 the SCAQMD adopted Rule 1420 to reduce emissions of lead from non-vehicular sources. Rule 1420 requires facilities emitting more than 10 tons per year of lead to monitor lead concentrations and facilities emitting between 2 and 10 tons per year to either monitor or model lead concentrations. This monitoring showed exceedances of the state lead AAQS at one location next to a battery recycling facility in Los Angeles County. Because the standard was exceeded at only one location the state is proposing redesignating the Los Angeles County portion of the SCAB as non-attainment of the Lead standard. This designation is expected to be finalized in 2010.

On November 12, 2008 the U.S. EPA issued final revisions to the NAAQS for lead. The standard was revised from  $1.5 \mu\text{g}/\text{m}^3$  to  $0.15 \mu\text{g}/\text{m}^3$  and the averaging time was changed from a calendar quarter to a rolling three-month average. The revised standard also changed the requirements for monitoring of lead concentrations. Monitoring is now required for any facility emitting more than 1 ton per year of lead. Existing monitoring shows exceedances of the revised lead NAAQS near two battery-recycling facilities. In addition, the new requirements will require installation of a new monitor near Van Nuys Airport due to the large volume of general aviation aircraft that use leaded aviation gas. This monitoring will begin in 2010.

To implement the new lead NAAQS, U.S. EPA requested states to recommend designations. On September 24, 2009, CARB recommended re-designating the Los Angeles County portion of SCAB to non-attainment for the 2008 Lead NAAQS due to the exceedances measured near battery recycling facilities discussed above. Final designations of all attainment, nonattainment, and unclassifiable areas will be effective no later than January 2012. U.S. EPA intends to complete initial designations as soon as possible. State Implementation Plans demonstrating attainment of the standards by January 2017, will need to be submitted to U.S. EPA by June 2013.

Table 2 shows that SCAB is currently designated as in attainment of the  $\text{SO}_2$  and lead NAAQS as well as the state  $\text{CO}$ ,  $\text{NO}_2$ ,  $\text{SO}_2$ , lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally,  $\text{SO}_2$ , hydrogen sulfide, and vinyl chloride are not considered a concern in the SCAB. Lead concentrations are only a concern near facilities with considerable lead emissions. As discussed above, annual  $\text{NO}_2$  concentrations slightly exceed the state annual standard in a few locations in the basin. The primary pollutants of concern in the SCAB are Ozone and particulate matter.

## 1.5 Air Quality Management Plan (AQMP)

As, discussed above, the CAA requires plans to demonstrate attainment of the NAAQS for which an area is designated as nonattainment. Further, the CCAA requires SCAQMD to revise its plan to reduce pollutant concentrations exceeding the CAAQS every three years. In the SCAB, SCAQMD and SCAG, in coordination with local governments and the private sector, develop the Air Quality Management Plan (AQMP) for the air basin to satisfy these requirements. The AQMP is the most important air management document for the basin because it provides the blueprint for meeting state and federal ambient air quality standards.

The 2003 AQMP is the current Federally approved applicable air plan for ozone. The 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the plan as part of the California State Implementation Plan on October 23, 2003. The PM<sub>10</sub> attainment plan from the 2003 AQMP received final approval from the U.S. EPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the U.S. EPA had not acted on the ozone attainment plan of the 2003 AQMP. On this date, CARB announced that it was rescinding the ozone attainment plan from the 2003 AQMP with the intention to expedite approval of the 2007 AQMP. However, on March 10, 2009 the U.S. EPA announced partial approval and partial disapproval of the ozone attainment plan of the 2003 AQMP effective April 9, 2009. The portions disapproved by the U.S. EPA were determined to not be required by the FCAA because they represented revisions to previously approved AQMP elements. Even with the disapproved elements the 2003 AQMP satisfied the requirements of the EPA and did not trigger sanction clocks. The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California State Implementation Plan on September 27, 2007. The State Implementation Plan was submitted to the U.S. EPA on November 16, 2007. The U.S. EPA has not taken action on the 2007 AQMP at this time.

The 2007 AQMP was prepared in response to the implementation of the federal PM<sub>2.5</sub> and 8-hour ozone NAAQS. The implementation of the new standards required completion of plan addressing attainment of the 8-hour ozone standard by June of 2007 and completion of a plan addressing the PM<sub>2.5</sub> standard one year later, in April of 2008. SCAQMD determined that it was most prudent to prepare an integrated plan to address both pollutants. The attainment date for the PM<sub>2.5</sub> NAAQS is earlier (i.e., 2015) than the attainment date for the ozone NAAQS (i.e., 2021) and the district felt that delaying a plan for PM<sub>2.5</sub> by a year could jeopardize the basin's ability to attain the standard. Further, development of a plan for ozone would have likely focused on lowering VOC emissions, which would have no effect on PM<sub>2.5</sub> levels. Reductions in NO<sub>x</sub> emissions result in reductions in both ozone and PM<sub>2.5</sub> levels.

The 2007 AQMP demonstrates attainment of the 65 µg/m<sup>3</sup> 24-hour average and 15µg/m<sup>3</sup> annual average PM<sub>2.5</sub> standards by the 2015 deadline. However, it should be noted that in September of 2006, the U.S. EPA lowered the 24-hour PM<sub>2.5</sub> NAAQS to 35 µg/m<sup>3</sup>. An attainment plan for the revised standard will need to be completed by December 14, 2013. The deadline for meeting the revised standard will not change (i.e., April 2015) but five year extensions to attain the standard may be granted by the U.S. EPA.

The 2007 AQMP determined that the basin would not be able to achieve the 0.08-ppm 8-hour ozone standard by the 2021 deadline without the use of "black box" measures. "Black box" measures anticipate the development of new technologies or improving existing control technologies that are not well defined at the time the plan is prepared. However, the use of "black box" measures is not allowed for areas with a Severe-17 non-attainment designation. Because of this the SCAQMD and CARB requested to the U.S. EPA to "bump up" the basin's

classification to Extreme with the submittal of the 2007 AQMP. This request was granted in August 2009 and will extend the required attainment date to 2024 and allow the use of “black box” measures. The “black box:” reductions needed for ozone attainment are estimated to be 190 tons per day (tpd) of NO<sub>x</sub> and 27 tpd of VOC. These reductions represent a 17% reduction in 2002 average daily NO<sub>x</sub> emissions and a 3% reduction in 2002 average daily VOC emissions.

It should be noted that on March 12, 2008, the U.S. EPA lowered the 8-hour ozone standard to 0.075 ppm. This effectively lowers the standard 0.009 ppm as 0.084 ppm is considered meeting the 0.08 ppm standard. A plan to attain the revised standard will need to be completed by 2013. Attainment deadlines for the revised standard have not been established and may vary depending on the severity of the exceedances.

Implementation of the 2007 AQMP is based on a series of control measures and strategies that vary by source type (i.e., stationary or mobile) as well as by the pollutant that is being targeted. Short-term and mid-term control measures are defined to achieve the PM<sub>2.5</sub> standard by 2015. These measures are designed to also contribute to reductions in ozone levels. Additional, long-term measures are defined to attain the 8-hour ozone standard by 2024. The measures rely on actions to be taken by several agencies that have statutory authority to implement such measures. Each control measure will be brought for regulatory consideration in a specified time frame. Control measures deemed infeasible will be substituted by other measures to achieve the total emission reduction target for each agency.

The plan focuses on control of sulfur oxides (SO<sub>x</sub>), directly emitted PM<sub>2.5</sub>, and nitrogen oxides (NO<sub>x</sub>) to achieve the PM<sub>2.5</sub> standard. Achieving the 8-hour ozone standard builds upon the PM<sub>2.5</sub> attainment strategy with additional NO<sub>x</sub> and VOC reductions. The control measures in the 2007 AQMP are based on facility modernization, energy efficiency and conservation, good management practices, market incentives/compliance flexibility, area source programs, emission growth management and mobile source programs. In addition, CARB has developed a plan of control strategies for sources controlled by CARB (i.e. on-road and off-road motor vehicles and consumer products). Further, Transportation Control Measures (TCM) defined in SCAG’s Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) are needed to attain the standards.

The 2007 AQMP includes 30 short-term and mid-term stationary and 7 mobile source control measures proposed for implementation by the district that are applicable to sources under their jurisdiction. Nine of these measures were included in the 2003 AQMP and have been updated or revised. Twenty-eight new measures are proposed based on replacement of the District’s long-term reduction measures from the 2003 AQMP with more defined control measures or development of new control measures. Measures include; regulations to reduce VOC emissions from coatings, solvents, petroleum operations, and cutback asphalt; measures to reduce emissions from industrial combustion sources as well as residential and commercial space heaters; a measure to offset potential emission increases due to changes in natural gas specifications; localized control of PM emission hot spots; regulation of wood burning fireplaces and wood stoves; reductions from under-fired char broilers; reducing urban heat island through lighter colored roofing, and paving materials and tree planting programs; energy efficiency and conservation programs; and emission reduction from new or redevelopment projects through regulations that will establish mitigation options to be implemented in such project. The specific measures are discussed in Chapter 4 and presented in detail in Appendix IV-A of the 2007 AQMP.

The TCMs defined in the RTP and RTIP fall into three categories, High Occupancy Vehicle measures, Transit and System Management Measures and Information-based Transportation Strategies. The High Occupancy Vehicle (HOV) Strategy attempts to reduce the proportion of commute trips made by single occupancy vehicles which constitute 72% of all home work trips according to the 200 U.S. Census. Specific measures include new HOV lanes on existing and new facilities, HOV to HOV bypasses and High Occupancy Toll (HOT) lanes. The Transit and Systems Management Strategy incentivize the use of transit, alternative transportation modes (e.g., pedestrian and bicycles), and increases in average vehicle occupancy by facilitating vanpools, smart shuttles and similar strategies. Systems management measures include grade separation and traffic signal synchronization projects. The information-based Transportation Strategy relies primarily on the innovative provision of information in a manner that successfully influences the ways in which individuals use the regional transportation system. Providing ride matching to increase ride-sharing and carpool trips and providing near real-time estimates of congestion in an effort to influence persons to defer traveling to a less congested period are examples of the strategy.

In addition to District's measures and SCAG's TCMs, the Final 2007 AQMP includes additional short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state and federal jurisdiction including on-road and off-road mobile sources, and consumer products. Measures committed to be enacted by CARB include (1) improvements to the smog check program, (2) cleaner in-use heavy duty truck emission regulations, (3) increased regulations on goods movement sources including ships, harbor craft, and port trucks, (4) regulations for cleaner in-use off-road equipment including agricultural equipment, (5) various measures to reduce evaporative VOC emissions from fuel storage and dispensing, (6) tightened emission standards and product reformulation for consumer products that emit VOC's, and (7) reductions in emissions from pesticide applications.

Four long-term "black box" control approaches are presented in the 2007 AQMP. These measures include (1) further reductions from on-road sources by retiring or retrofitting older high-emitting vehicles and accelerated penetration of very low and zero emission vehicles, (2) increased inspection and maintenance (I/M) programs for heavy-duty diesel trucks, (3) further reductions from off-road mobile sources through accelerated turn-over of existing equipment, retrofitting existing equipment and new engine emission standards, and (4) further reductions from consumer product VOC emissions.

The 2007 AQMP identifies four contingency measures that would need to be implemented if milestone emission targets are not met or if the standards are not attained by the required date. While implementation of these measures is expected to reduce emissions, there are issues that limit the viability of these measures as AQMP control measures. These issues include the availability of District resources to implement and enforce the measure, cost-effectiveness of the measure, potential adverse environmental impacts, effectiveness of emission reductions, and availability of methods to quantify emission reductions.

## 1.6 Climate

The climate in and around the project area, as with all of Southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter "wet" season. Temperatures are normally mild, excepting the summer months, which commonly bring substantially higher temperatures. In all portions of the basin, temperatures well above 100 degrees F. have been recorded in recent years. The annual average temperature in the basin is approximately 62 degrees Fahrenheit.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night the wind generally slows and reverses direction traveling towards the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south. The frequency of calm winds (less than 2 miles per hour) is less than 10 percent. Therefore, there is little stagnation in the project vicinity, especially during busy daytime traffic hours.

Southern California frequently has temperature inversions which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Ground based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. Mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the South Coast Air Basin (SCAB) and is responsible for the high levels of ozone observed during summer months in the air basin.

## 1.7 Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the SCAB have been made for existing emissions ("2007 Air Quality Management Plan", June 2007). The data indicate that on-road (e.g.; automobiles, busses and trucks) and off-road (e.g.; trains, ships, and construction equipment) mobile sources are the major source of current emissions in the SCAB. Mobile sources account for approximately 64% of VOC emissions, 92% of NO<sub>x</sub> emissions, 39% of direct PM<sub>2.5</sub> emissions, 59% of SO<sub>x</sub> emissions and 98% of CO emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30% of VOC emissions and 32% of direct PM<sub>2.5</sub> emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38% of SO<sub>x</sub> emissions. Entrained road dust account for approximately 20% of direct PM<sub>2.5</sub> emissions.

The SCAQMD has divided its jurisdiction into 38 source receptor areas (SRA) with a designated ambient air monitoring station in most areas. The project is located in the Central Orange County Coastal SRA (SRA 20). There are no monitoring stations located in this SRA. The nearest monitoring station to the proposed project is the Costa Mesa-Mesa Verde Drive monitor which is located approximately 6 miles west of the site in the vicinity of the intersection of Harbor Boulevard and Adams Avenue in the City of Costa Mesa. The air pollutants measured at the Costa Mesa-Mesa Verde Drive site include ozone, carbon monoxide (CO), nitrogen dioxide

(NO<sub>2</sub>), and Sulfur Dioxide (SO<sub>2</sub>). Particulate Matter is not monitored at the Costa Mesa-Mesa Verde Drive station. The nearest monitoring station to the proposed project that measures particulate matter levels is the Mission Viejo station which is located approximately 9 miles east of the project site in the vicinity of the intersection of Los Alisos Boulevard and Trabuco Road. Pollutants monitored at the Mission Viejo Station include ozone, carbon monoxide, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>).

The air quality data monitored at the Costa Mesa-Mesa Verde Drive station from 2005 to 2008 are presented in Table 3. The air quality data monitored at the Mission Viejo station from 2005 to 2008 are presented in Table 4. The air quality data monitored were obtained from the CARB air quality data website ([www.arb.ca.gov/adam/](http://www.arb.ca.gov/adam/)) and the SCAQMD Historical Data website (<http://www.aqmd.gov/smog/historicaldata.htm>).

The monitoring data presented in Tables 3 and 4 show that particulates and ozone are the air pollutants of primary concern in the project area.

The state 1-hour ozone standard has not been exceeded in the past four years at the Costa Mesa-Mesa Verde Drive Station. The standard has been exceeded between 3 and 13 days each year over the last four years at the Mission Viejo Station. The state 8-hour ozone standard was exceeded between 0 and 5 days each year at the Costa Mesa Mesa Station and between 10 and 25 days each year at the Mission Viejo Station. The federal 8-hour standard was exceeded 3 days in 2008 at the Costa Mesa Station but was not exceeded in 2005, 2006, or 2007. The standard was exceeded between 5 and 15 days each of the past four years. The data from the Costa Mesa Station is more representative of conditions near the project site as they are similar distances from the coastline and the Mission Viejo Station is located further inland. Generally ozone concentrations increase further inland.

The Costa Mesa Station ozone monitoring data appears to show an increasing trend in concentrations over the past three years and 2008 was the only year to show exceedances of the federal 8-hour standard. However, reviewing longer-term data shows that maximum ozone levels were the lowest in 2006 since monitoring began in 1990. Measured maximum levels dropped considerably between 1990 and around 1997 and have been generally level with a slight downward trend since that time with the lowest values measured in 2006. Maximum concentrations at the Mission Viejo station have not shown a significant trend, up or down, since.

The federal 24-hour PM<sub>10</sub> standard has not been exceeded in the past four years at the Mission Viejo Station. Exceedances of the state 24-hour PM<sub>10</sub> standard were measured a total of 4 days in the past four years. Generally, 1 day of measured exceedances corresponds to an estimate of 6 days of exceedances, but the CARB website did not report the estimated number of days of exceedances. The three exceedances in 2007 were measured in late October and early November and were likely due to wildfires. The fourth highest measured level that year was 38 µg/m<sup>3</sup>. The exceedance in 2006 was measured in early February and must have been due to some unusual conditions because the 2<sup>nd</sup> highest measured level was 37 µg/m<sup>3</sup>. There does not appear to be a discernable trend in maximum 24-hour PM<sub>10</sub> levels or the number of days of exceedances when atypical events are excluded.

**Table 3**  
**Air Quality Levels Measured at the Costa Mesa-Mesa Verde Drive Monitoring Station**

Pollutant	California Standard	National Standard	Year	% Msrd. <sup>1</sup>	Max. Level	Days State Standard Exceeded <sup>2</sup>	Days National Standard Exceeded <sup>2</sup>
<b>Ozone</b> 1 Hour Average	0.09 ppm	None	2008	96	0.094	0	n/a
			2007	95	0.082	0	n/a
			2006	99	0.074	0	n/a
			2005	92	0.085	0	n/a
<b>Ozone</b> 8 Hour Average	0.070 ppm	0.075 ppm	2008	95	0.080	5	3
			2007	92	0.073	2	0
			2006	99	0.062	0	0
			2005	90	0.072	2	0
<b>CO</b> 1 Hour Average	20 ppm	35 ppm	2008	95	3	0	0
			2007	95	5	0	0
			2006	98	4	0	0
			2005	98	5	0	0
<b>CO</b> 8 Hour Average	9.0 ppm	9 ppm	2008	95	1.97	0	0
			2007	95	3.13	0	0
			2006	98	3.01	0	0
			2005	98	3.16	0	0
<b>NO<sub>2</sub></b> 1 Hour Average	0.25 ppm	None	2008	95	0.081	0	n/a
			2007	96	0.074	0	n/a
			2006	98	0.101	0	n/a
			2005	86	0.085	0	n/a
<b>NO<sub>2</sub></b> AAM <sup>3</sup>	None	0.053 ppm	2008	95	0.013	n/a	No
			2007	96	0.013	n/a	No
			2006	89	0.015	n/a	No
			2005	86	0.014	n/a	No
<b>SO<sub>2</sub></b> 1 Hour Average	0.04 ppm	0.14 ppm	2008	94	0.003	0	0
			2007	94	0.004	0	0
			2006	92	0.005	0	0
			2005	94	0.008	0	0
<b>SO<sub>2</sub></b> AAM <sup>3</sup>	None	0.030 ppm	2008	94	0.001	n/a	No
			2007	94	0.000	n/a	No
			2006	92	0.001	n/a	No
			2005	94	0.001	n/a	No

1. Percent of year where high pollutant levels were expected that measurements were made.

2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM<sub>10</sub> and PM<sub>2.5</sub> 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean

-- Data Not Reported

n/a – no applicable standard

Sources: CARB Air Quality Data Statistics web site [www.arb.ca.gov/adam/](http://www.arb.ca.gov/adam/) accessed 2/2/10

SCAQMD Historical Data Website <http://www.aqmd.gov/smog/historicaldata.htm> accessed 2/2/10

**Table 4**  
**Air Quality Levels Measured at the Mission Viejo Monitoring Station**

Pollutant	California Standard	National Standard	Year	% Msrd. <sup>1</sup>	Max. Level	Days State Standard Exceeded <sup>2</sup>	Days National Standard Exceeded <sup>2</sup>
<b>Ozone</b> 1 Hour Average	0.09 ppm	None	2008	96	0.118	9	n/a
			2007	99	0.108	5	n/a
			2006	96	0.123	13	n/a
			2005	99	0.125	3	n/a
<b>Ozone</b> 8 Hour Average	0.070 ppm	0.075 ppm	2008	97	0.104	25	15
			2007	99	0.090	10	5
			2006	96	0.105	23	12
			2005	98	0.085	10	6
<b>CO</b> 1 Hour Average	20 ppm	35 ppm	2008	96	2	0	0
			2007	97	3	0	0
			2006	99	2	0	0
			2005	69	2	0	0
<b>CO</b> 8 Hour Average	9.0 ppm	9 ppm	2008	96	1.10	0	0
			2007	97	2.16	0	0
			2006	99	1.64	0	0
			2005	96	1.59	0	0
<b>Respirable Particulates PM<sub>10</sub></b> 24 Hour Average	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	2008	95	42.0	0/0	0/0
			2007	93	74.0	3/--	0/0
			2006	90	57.0	1/--	0/0
			2005	90	41.0	0/0	0/0
<b>Respirable Particulates PM<sub>10</sub></b> AAM <sup>3</sup>	20 µg/m <sup>3</sup>	None	2008	95	22.6	Yes	n/a
			2007	93	23.0	Yes	n/a
			2006	75	21.1	Yes	n/a
			2005	90	17.6	No	n/a
<b>Fine Particulates PM<sub>2.5</sub></b> 24 Hour Average	None	35 µg/m <sup>3</sup>	2008	99	32.6	n/a	0/0
			2007	79	46.8	n/a	2/--
			2006	84	46.9	n/a	1/--
			2005	92	35.3	n/a	0/0
<b>Fine Particulates PM<sub>2.5</sub></b> AAM <sup>3</sup>	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	2008	99	10.4	No	No
			2007	79	11.3	No	No
			2006	84	11.0	No	No
			2005	92	10.6	No	No

1. Percent of year where high pollutant levels were expected that measurements were made.

2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM<sub>10</sub> and PM<sub>2.5</sub> 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean

-- Data Not Reported

n/a – no applicable standard

Source: CARB Air Quality Data Statistics web site [www.arb.ca.gov/adam/](http://www.arb.ca.gov/adam/) accessed 2/2/10

SCAQMD Historical Data Website <http://www.aqmd.gov/smog/historicaldata.htm> accessed 2/2/10



The Federal annual average  $PM_{10}$  standard has been exceeded the past three years but was not exceeded in 2005. The annual concentrations show an upward trend, however, the average measured in 2005 was the lowest since monitoring began in 1999 and average annual concentrations in the four years presented are lower than all of the previous years except for 1999.

Exceedances of the federal 24-hour  $PM_{2.5}$  standard were measured a total of 3 days in the past four years at the Mission Viejo Station. Generally, 1 day of measured exceedances corresponds to an estimate of 6 days of exceedances, but the CARB website did not report the estimated number of days of exceedances. The measured 24-hour  $PM_{2.5}$  exceedances occurred during the same time periods as the 24-hour  $PM_{10}$  exceedances and were likely due to wildfires in 2007 and some unusual event in February 2006. The third high in 2007 was  $34.3 \mu\text{g}/\text{m}^3$  and the second high in 2006 was  $37.0 \mu\text{g}/\text{m}^3$  similar to the maximums measured in 2005 and 2008 when there were no exceedances. There does not appear to be a discernable trend in maximum 24-hour  $PM_{2.5}$  levels or the number of days of exceedances when atypical events are excluded.

The state and federal annual average  $PM_{2.5}$  standards have not been exceeded in the past four years at the Mission Viejo Station. There does not appear to be a discernable trend in annual  $PM_{2.5}$  concentrations at the Mission Viejo Station.

The monitored data shown in Tables 3 and 4 shows that other than ozone,  $PM_{10}$ , and  $PM_{2.5}$  exceedances as mentioned above, no State or Federal standards were exceeded for the remaining criteria pollutants.

## 2.0 Potential Air Quality Impacts

Air quality impacts are usually divided into short term and long term. Short-term impacts are usually the result of construction or grading operations. Long-term impacts are associated with the built out condition of the proposed project.

### 2.1 Thresholds of Significance

#### 2.1.1 Regional Air Quality

In their "1993 CEQA Air Quality Handbook", the SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 5 presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds are considered to have a less than significant effect on regional air quality. It should be noted the thresholds recommended by the SCAQMD are very low and subject to controversy. It is up to the individual lead agencies to determine if the SCAQMD thresholds are appropriate for their projects.

**Table 5**  
**SCAQMD Regional Pollutant Emission Thresholds of Significance**

	Regional Significance Threshold (lbs/day)					SO <sub>x</sub>
	CO	VOC	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	
<b>Construction</b>	550	75	100	150	55	150
<b>Operation</b>	550	55	55	150	55	150

#### 2.1.2 Local Air Quality

As part of the SCAQMD's environmental justice program, attention was focused on localized effects of air quality. In accordance with Governing Board direction, SCAQMD staff developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. The LST's represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. The LST methodology is described in "Final Localized Significance Threshold Methodology" dated June 2003 by the SCAQMD and is available at the SCAQMD website (<http://aqmd.gov/ceqa/handbook/LST/LST.html>).

The LST mass rate look-up tables provided by the SCAQMD allow one to determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts. If the calculated on-site emissions for the proposed construction or operational activities are below the LST emission levels found on the LST mass rate look-up table, then the proposed construction or operation activity will not result in a significant impact on local air quality.

The LST mass rate look-up tables are applicable to the following pollutants only: oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>). LST's are derived based on the location of the activity (i.e., the source/receptor area); the emission rates of NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>; and the distance to the nearest exposed

individual. This distance is based upon the uses around the project and the Ambient Air Quality Standard (AAQS) averaging times for the pollutants of concern. The shortest AAQS averaging time for CO and NO<sub>2</sub> are for one-hour and the nearest exposed individual is the location where a person could be expected to remain for 1-hour. The shortest averaging time for the PM<sub>10</sub> and PM<sub>2.5</sub> AAQS is 24 hours and the nearest exposed individual is the location where a person could be expected to remain for 24-hours. Typically, this is the nearest residential use.

The LST methodology presents mass emission rates for each SRA, project sizes of 1, 2, and 5 acres, and nearest receptor distances of 25, 50, 100, 200, and 500 meters. For project sizes between the values given, or with receptors at distances between the given distances, the methodology uses linear interpolation to determine the thresholds. If receptors are within 25 meters of the site, the methodology document says that the threshold for the 25-meter distance should be used.

The project is located in SRA 20. The total project site is approximately 17.4 acres in size. However, each phase of construction will be constrained to approximately 8.5 acres of the site. A 5-acre site was used to determine the LST significance thresholds, as that is the maximum site size presented in the LST threshold tables. Larger sites allow for greater pollutant emissions without exceeding the AAQS and higher significance thresholds. Therefore using the thresholds determined for a smaller project site results in a more stringent significance threshold. The nearest residential uses are located immediately adjacent to the proposed project. Therefore, a 25-meter receptor distance was used to establish the thresholds. Based on these factors, the LST thresholds specific for the proposed project were calculated and are presented in Table 6. A project with daily emission rates below these thresholds is considered to have a less than significant effect on local air quality.

**Table 6**  
**Localized Significance Thresholds**

	Localized Significance Threshold (lbs/day)			
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Construction</b>	1,711.0	197.0	14.0	9.0
<b>Operation</b>	1,711.0	197.0	4.0	2.0

In addition, the project would result in a local air quality impact if the project results in increased traffic volumes and/or decreases in Level of Service (LOS) that would result in an exceedance of the CO ambient air quality standards of 20 ppm for 1-hour Carbon Monoxide (CO) concentration levels, and 9 ppm for 8-hour CO concentration levels. If the CO concentration levels at potentially impacted intersections with the project are lower the standards, then there is no significant impact. If future CO concentrations with the project are above these levels, then the project will have a significant local air quality impact.

## 2.2 Short-Term Impacts

Temporary impacts will result from project construction activities. Air pollutants will be emitted by construction equipment and fugitive dust will be generated during demolition of the existing improvements as well as during grading of the site.

### **2.2.1 Construction Emission Calculation Methodology**

Emissions during the primary phases of construction were calculated using URBEMIS2007 program (version 9.2.4). A description of the general construction activities and the equipment expected to be utilized for these activities was provided by the project applicant and are described in detail in the following section.

The URBEMIS Default level of detail was used to calculate fugitive dust emissions with the default assumption of 20 pounds per day of  $PM_{10}$  emissions per acre. If water or other soil stabilizers are used to control dust as required by SCAQMD Rule 403, the emissions can be substantially reduced (i.e., by 50+ percent depending on dust control application type and frequency). The fugitive dust emissions of  $PM_{2.5}$  and  $PM_{10}$  reported below include the default URBEMIS 61% reduction from watering three times per day as required by Rule 403.

The URBEMIS model calculates total emissions, on-site and off-site, resulting from each construction activity which are compared to the SCAQMD Regional Thresholds presented in Table 5. On-site project emissions, which are compared to the SCAQMD Local Significance Thresholds presented in Table 6, were calculated by scaling the emissions from on-road sources so that only the emissions from on-site portion of the trip are included. Each worker, material removal or delivery trip was assumed to have a 0.2-mile component within the project site.

### **2.2.2 Construction Activities**

Construction of the project will occur over two phases. During the first phase approximately half of the existing buildings will be demolished and the replacement buildings will be constructed. During the second phase of construction the remaining buildings in the project area will be demolished. Table 7 presents the estimated construction schedule used to calculate pollutant emissions. Delays in the start for each phase of construction would not significantly affect emission estimates. In fact, the URBEMIS program includes a reduction in on-road and off-road vehicle exhaust emissions each year to account for new construction equipment and on-road vehicles manufactured under stricter emission standards becoming a larger part of the construction fleet (a fleet average emission factor is used to estimate emissions). So for emissions modeling purposes, a delay moving the activity into the following year would actually result in a slight reduction in the exhaust emissions estimates. Lengthening the duration of each activity would result in the same or lower daily emissions as daily activity levels for emission sources would either not change or decrease as the work is spread out over a longer period of time. A shortening of any of the construction activities assumed could result in higher emissions and would require a re-analysis of the emission impacts.

Half of the existing residential buildings will be demolished prior to the construction of the new buildings and the second half of the existing residential buildings will be demolished after the replacement buildings have been constructed. At this time it is not known if the non-residential structures in the project area will be demolished during the first or second phase. The emissions calculations include the demolition of all of the non-residential buildings during both demolition phases. Actual demolition emissions will be slightly less if the buildings are not all demolished in only one of the two phases.

**Table 7**  
**Estimated Construction Schedule**

Phase Activity	Start	Duration (Weeks)	End
<b>Phase 1</b>			
Building Demolition	September 2010	8	October 2010
Hardscape Demolition	October 2010	2	November 2010
Grading	November 2010	2	November 2010
Paving	November 2010	2	December 2010
Building Construction	November 2010	94	September 2012
Arch Coating	July 2012	8	September 2012
<b>Phase 1 Duration</b>		<b>106 (24 Months)</b>	
<b>Phase 2</b>			
Building Demolition	September 2014	8	October 2014
Hardscape Demolition	October 2014	2	November 2014
Grading	November 2014	2	November 2014
<b>Phase 2 Duration</b>		<b>12 (3 Months)</b>	

Fugitive dust emissions from building demolition are proportional to the volume of building that is demolished. The existing residential uses have a total of approximately 216,650 square feet of gross floor area and an estimated average floor height of 12.5 feet. Approximately half of the floor area of the residential buildings will be demolished during each demolition phase. The site also includes four laundry buildings with a total floor area of approximately 2,625 square feet, two Infant/Toddler Centers with floor areas of approximately 4,320 square feet and approximately 2,608 square feet that will be removed as well. The smaller Infant/Toddler Center is a modular building and will be relocated on site or removed from the site rather than being demolished. As discussed above, it is not known which phase the laundry rooms or larger Infant/Toddler Center will be demolished. As a worst-case assumption the demolition of these buildings was included in the calculations for both demolition phases. It was estimated that these buildings have an average floor height of 12.5 feet.

The following paragraphs describe the activity assumptions used to calculate emissions for each of the construction activities discussed above. The URBEMIS model output files are presented in the appendix.

*Phase 1 Building Demolition* is the demolition of approximately half of the existing residential buildings and all of the non-residential buildings. This work is estimated to occur over an eight-week period. Particulate emissions from building demolition are estimated based on the volume of the building. The total volume of buildings to be demolished during this phase is estimated to be 1,440,875 cubic feet. URBEMIS assumes that the amount of debris hauled from the site equals 25% of the building volume. This results in the demolition requiring 33 daily haul trucks to remove the debris. It was assumed that the haul trucks would have a 30 mile trip length. Equipment assumed to be utilized during demolition includes (1) concrete/industrial saw, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Hardscape Demolition* is the removal of the existing parking lots, hardscape and bike trail to prepare the site for the grading and construction of the replacement buildings. The

project site includes approximately 318,518 square feet of parking lot and other hardscape. Approximately half of this will be removed during Phase 1. This work will occur over approximately 8.5 acres of the project site is estimated to take two weeks. Equipment assumed to be utilized during demolition includes (2) concrete/industrial saws, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The emissions calculation includes 22.1 daily haul truck trips with a round trip distance of 30 miles. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Grading* is the grading of project site in preparation of building construction. This work will occur over the approximately 8.5 acres of the project site and is estimated to take two weeks. There will be no import or export of materials required. Equipment assumed to be used during grading includes (1) grader, (1) rubber tired dozer, (1) tractor/loader/backhoe and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Paving* is the paving of the parking lot with asphalt. Asphalt releases VOC's as it cures and paving equipment will generate emissions. An estimated 4 acres of the site will be paved with asphalt. This work is expected to occur over a two-week period. The URMEIS 2007 defaults assumptions for VOC emissions from asphalt and worker and vendor vehicle trips were used. Equipment assumed to be used during grading includes (1) paver, (1) paver equipment, (1) roller, and (1) tractor/loader/backhoe.

*Phase 1 Construction* is the construction of the replacement buildings. Building construction emissions were calculated for the portion of construction with the greatest amount of activity that will result in the highest emissions. Equipment assumed to be used during construction includes (3) welders, (2) forklifts, (1) crane, (1) tractor/loader/backhoe, and (2) aerial lifts. The URBEMIS2007 default assumptions were used to estimate emissions from material deliveries and worker trips.

*Phase 1 Architectural Coating* is the painting of the new building. VOCs are emitted from these coatings as well as the solvents used in cleanup of the coatings. The amount of VOCs that are emitted is dependant on the specific coating being used and its VOC content. For this project, it is assumed that low-VOC paints would be used. Architectural coating emissions were estimated utilizing URBEMIS2007 default assumptions.

*Phase 2 Building Demolition* is the demolition of the remaining existing residential buildings and all of the non-residential buildings. This work is estimated to occur over an eight-week period. Particulate emissions from building demolition are estimated based on the volume of the building. The total volume of buildings to be demolished during this phase is estimated to be 1,440,875 cubic feet. URBEMIS assumes that the amount of debris hauled from the site equals 25% of the building volume. This results in the demolition requiring 33 daily haul trucks to remove the debris. It was assumed that the haul trucks would have a 30 mile trip length. Equipment assumed to be utilized during demolition includes (1) concrete/industrial saw, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 2 Hardscape Demolition* is the removal of the remaining parking lots, hardscape and bike trail. The project site includes approximately 318,518 square feet of parking lot and other hardscape. Approximately half of this will be removed during Phase 1 and the remaining hardscape will be removed in Phase 2. This work will occur over approximately 8.5 acres of the project site is estimated to take two weeks. Equipment assumed to be utilized during demolition includes (2) concrete/industrial saws, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1)



**Table 9**  
**Total Concurrent Construction Emissions**

Activity	Daily Emissions (lbs/day)					
	CO	NO <sub>x</sub>	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
<b>Phase 1 Construction Combined With:</b>						
Paving	56.8	47.1	8.6	3.4	2.9	0.1
Painting	48.6	28.6	67.4	1.9	1.6	0.1
<b>Significance Threshold</b>	<b>550</b>	<b>100</b>	<b>75</b>	<b>150</b>	<b>55</b>	<b>150</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Table 9 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Regional Emissions Significance Thresholds. Therefore, the construction of the project will not result in a significant regional air quality impact.

#### 2.2.4 On-site Construction Emissions

On-site emissions for each of the construction activities were calculated based on the URBEMIS output as discussed in Section 2.2.1 and are presented in Table 10. The applicable LST thresholds are also presented.

**Table 10**  
**On-Site Emissions By Construction Activity**

Activity	Daily Emissions (lbs/day)			
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase 1</b>				
Demolition	4.5	10.4	12.5	6.7
Hardscape Demolition	10.0	20.6	8.8	2.5
Grading	13.9	33.0	13.1	3.8
Paving	8.1	14.3	1.3	1.2
Construction	10.9	17.0	1.2	1.1
Painting	0.0	0.0	0.0	0.0
<b>Phase 2</b>				
Demolition	3.9	7.6	12.3	6.6
Hardscape Demolition	8.3	15.8	8.5	2.3
Grading	11.4	24.1	12.7	3.4
<b>Significance Threshold</b>	<b>1,711.0</b>	<b>197.0</b>	<b>14.0</b>	<b>9.0</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Table 10 shows that no individual construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. During phase 1 paving will occur concurrently with construction and painting will also occur concurrently with construction but not concurrently with paving (see Table 7). Table 11 presents the total emissions during these



concurrent construction activities. These are simply the sum of the emissions presented in Table 10 for the concurrent activities.

**Table 11**  
**On-Site Emissions By Concurrent Construction Activities**

Activity	Daily Emissions (lbs/day)			
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase 1 Construction Combined With:</b>				
Paving	19.0	31.3	2.5	2.3
Painting	10.9	17.0	1.2	1.1
<b>Significance Threshold</b>	<b>1,711.0</b>	<b>197.0</b>	<b>14.0</b>	<b>9.0</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Table 11 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. Therefore, the construction of the project will not result in a significant local air quality impact.

### **2.2.5 Diesel Particulate Matter Emissions During Construction**

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime (California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Guide to Health Risk Assessment.) Demolition and grading for the project, when the peak diesel exhaust emissions would occur, is expected to take approximately six months, cumulatively, with all construction expected to take approximately 27 months. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the project are not expected to result in a significant impact.

## **2.3 Long Term Impacts**

At its ultimate buildout (i.e. at the completion of Phase 2), the project is not expected to generate substantially different levels of pollutant emissions than the existing development on the project site. The completed project will consist of the same development (i.e., number of bedrooms and square footage of other uses) as the existing conditions except for the addition of an approximate 8,931 square foot community center, which will serve the residents of the apartments. However, even with this additional building the project is projected to reduce the total building square footage by approximately 13% over existing conditions due to reductions in the floor area of the apartments.

The primary source of long-term operational emissions are motor vehicles. The ultimate project is projected to result in the same number of vehicle trips as the existing conditions. The new community center will serve the residents and is not projected to result in any additional vehicle trips. Therefore, no increase in vehicular emissions is anticipated to occur as a result of implementation of the project.

Long-term operational emissions also include combustion of natural gas for water and space heating, consumer product usage, landscape maintenance equipment and maintenance painting. The new buildings would be expected to be more energy efficient than the existing buildings. The more efficient buildings combined with the reduction in total square feet of building area would be expected to reduce natural gas usage and the associated emissions compared to conditions with the existing buildings. However, emission calculation methodologies are not specific enough to accurately calculate this reduction quantitatively.

Emissions due to consumer product usage are proportional to the number of residents within the project. The number of residents is not expected to change with the project and therefore, consumer product air pollutant emissions would not be expected to change with the project.

The project will result in a substantial decrease in building footprints within the project area and a corresponding increase in landscaped area. This will likely result in some increase in landscaping activities in the project area and associated emissions. Current emission calculation methodologies calculate landscaping emissions based on the total project site area and therefore, this difference is not quantifiable. Landscaping related emissions are only a small fraction of total emissions associated with the project and would not be expected to result in a considerable increase in total operational emissions.

Maintenance painting emissions are calculated relative to the paintable surface area of the building areas within the project which is proportional to the total building square footage. As discussed above, the project will reduce the total building square footage which would be expected to result in a reduction in maintenance painting emissions. Further, the new buildings will incorporate pre-finished materials to the greatest extent possible. Generally, these materials do not require re-painting which would be expected to result in additional reductions compared to the existing conditions.

The greatest daily operational air pollutant emissions from the project will occur during the interim period between the completion of Phase 1 construction and the commencement of Phase 2 construction, September 2012 to September 2014. During this interim period the project site will include 200 additional bedrooms over existing conditions and is projected to generate 425 additional vehicle trips each day (Austin-Foust Associates, "Verano Place Housing Traffic Evaluation" 2010). Total emissions from the project area during this interim period were calculated using the methodology presented in Section 2.3.1 and are presented in Section 2.3.2.

These emissions are compared to the SCAQMD Regional emission factors presented in Section 2.1.1. Note that this comparison overstates the project impact as the actual project impact is properly measured as the increase in emissions that result from the implementation of the project. That is, the difference in emissions under this condition and under conditions with no changes to the project site. However, the results below show that the total project emissions under the interim condition are, at most, less than half of the significance thresholds. The emissions increase due to the project would be approximately one-third of the total regional emissions presented below and clearly less than the significance thresholds. This also demonstrates that the ultimate project emissions will be less than the significance thresholds.

Total on-site emissions from the project during the interim period were calculated using the methodology presented in Section 2.3.1 and are presented in Section 2.3.3. These emissions are compared to the Local Significance Thresholds (LST) presented in Section 2.1.2. Since these thresholds are used to determine if the project will result or significantly contribute to a local exceedance of the ambient air quality standards, they are not offset by existing emission sources.



Table 12 shows that the total emissions from the project area during the interim conditions with 600 beds will be less than the SCAQMD regional significance thresholds. As discussed above the project's impact is properly measured comparing the increase in emission due to the project. The increase due to the project during the interim period would be about one third (200 additional beds versus the 600 beds modeled) of the levels shown in Table 12. Further, as discussed above, the ultimate project emissions would not be considerably different from the existing development. Therefore, the project will not result in a significant regional air quality impact. No mitigation is required.

Table 13 compares total emissions with the project to the projected basin wide emissions from the 2003 AQMP. This comparison shows that the project represents a very small fraction of the total regional emissions. The project represents, at most, less than two hundredths of a percent of the total regional emissions.

**Table 13**  
**Comparison of interim Project Emissions with SCAB Emissions**

	Pollutant Emissions (tons/day)					
	CO	VOC	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
Project Emissions	0.05363	0.013085	0.00764	0.010305	0.002	0.000065
2023 South Coast Air Basin*	2,147	95	539	508	318	102
Project as Percentage of Basin	0.0025%	0.0138%	0.0014%	0.0020%	0.0006%	0.0001%

\* Source: 2007 AQMP Table 3-5A except PM<sub>10</sub> from 2003 AQMP Tables 3-5A and 3-5B

### 2.3.3 On-Site Project Emissions

Based on the assumptions described above, the on-site emissions during the interim period between the completion of Phase 1 construction and the commencement of Phase 2 construction were calculated and are presented in Table 14. Table 14 shows that the on-site emissions will not exceed the LSTs. Therefore, the project will not result in a significant localized air quality impact.

**Table 14**  
**On-Site Project Emissions**

Activity	Daily Emissions (lbs/day)			
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Vehicular Emissions	2.2	0.3	0.4	0.1
Natural Gas Combustion	1.3	2.9	0.0	0.0
Landscaping	1.6	0.0	0.0	0.0
Consumer Products	0.0	0.0	0.0	0.0
Architectural Coatings	0.0	0.0	0.0	0.0
<b>Total Emissions</b>	<b>5.0</b>	<b>3.2</b>	<b>0.5</b>	<b>0.1</b>
<b>Significance Threshold</b>	<b>1,711.0</b>	<b>197.0</b>	<b>4.0</b>	<b>2.0</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

### ***2.3.4 Local Air Quality Impacts Near Intersections Affected by Traffic Generated by The Project***

Increased traffic volumes due to the project result in increased pollutant emissions in the vicinity of the roads utilized by this traffic, which can cause pollutant levels to exceed the ambient air quality standards. Carbon monoxide (CO) and particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) are the pollutants of major concern along roadways.

The most notable source of CO is motor vehicles. For this reason, carbon monoxide concentrations are usually indicative of the local air quality generated by a roadway network, and are used as an indicator of its impacts on local air quality. CO concentrations are highest near intersections where queuing increases emissions. Local air quality impacts can be assessed by comparing future carbon monoxide levels with State and Federal carbon monoxide standards moreover by comparing future CO concentrations with and without the project. The Federal and State standards for carbon monoxide were presented earlier in Table 1.

CO modeling was performed for the 2003 AQMP to demonstrate attainment of the federal CO standards in the South Coast Air Basin (SCAB). Modeling was performed for four intersections considered the worst-case intersections in the SCAB. These intersections included; Wilshire at Veteran, Sunset at Highland, La Cienega at Century, and Long Beach at Imperial. Table 4-10 of Appendix V of the AQMP shows that modeled 1-hour average concentrations at these four intersections for 2002 conditions are actually below the 8-hour standard of 9 ppm. The highest modeled 1-hour average concentration of 4.6 ppm occurred at the Wilshire and Veteran intersection. Generally, only intersections operating at LOS of D or worse are considered to have the potential to cause CO concentrations to exceed the state ambient air quality standards of 20 ppm for a 1-hour averaging time and 9 ppm for an 8-hour averaging time.

Roads with substantial diesel truck volumes have the potential to result in particulate hot spots. The FHWA has published guidance on performing a qualitative analysis of particulate hot spots because at this time a reliable and accurate methodology for quantitatively assessing particulate hotspots has not been established. The FHWA guidance considers a road with an average daily diesel truck volume of 10,000 or less does not have the potential to result in a hot spot.

At its ultimate buildout (i.e. at the completion of Phase 2 construction), the project is not expected to generate substantially different levels of traffic than the existing development on the project site. The completed project will consist of the same development (i.e., number of bedrooms and square footage of other uses) as the existing conditions except for the addition of a community center which will serve the residents of the apartments. Therefore, the ultimate buildout of the project would not be expected to considerably alter traffic patterns or pollutant concentrations near intersections serving traffic associated with the project.

During the period between the completion of Phase 1 and the commencement of Phase 2 construction is commenced, September 2012 to September 2014, the project site will include 200 additional bedrooms over existing conditions. During this period the project is projected to generate 99 additional trips during the PM peak hour, 71 additional trips during the AM peak hour, and a total of 425 additional trips each day (Austin-Foust Associates, "Verano Place Housing Traffic Evaluation" 2010). Further, all of these additional trips would be expected to be passenger vehicles and not heavy trucks. This additional traffic is minor would not be expected to considerably increase CO or particulate matter concentrations near any intersection.

The project is not anticipated to cause or significantly contribute to any CO or particulate matter concentrations exceeding the AAQS along roadways serving the project. Therefore, the Project will not result in a significant local air quality impact along roadways serving the project.

## **2.4 Compliance with Air Quality Planning**

The following sections deal with the major air planning requirements for this project. Specifically, consistency of the project with the AQMP is addressed. As discussed below, consistency with the AQMP is a requirement of the California Environmental Quality Act (CEQA).

### **2.4.1 Consistency with AQMP**

An EIR must discuss any inconsistencies between the proposed project and applicable GPs and regional plans (California Environmental Quality Act (CEQA) guidelines (Section 15125)). Regional plans that apply to the proposed project include the South Coast Air Quality Management Plan (AQMP). In this regard, this section will discuss any inconsistencies between the proposed project with the AQMP.

The purpose of the consistency discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-maker determines that the project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD's CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (except as provided for CO in Section 9.4 for relocating CO hot spots).
- (2) Whether the project will exceed the assumptions in the AQMP based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

#### **Criterion 1 - Increase in the Frequency or Severity of Violations?**

Based on the air quality modeling analysis contained in this report, there will not be significant short-term construction and long-term operational impacts due to the project based on the SCAQMD thresholds of significance. Emissions generated during construction and operation will not exceed SCAQMD's LST criteria, and therefore, it is unlikely that development of the project will increase the frequency or severity of existing air quality violations in the immediate vicinity of the project. Further, the project is not projected to result in any exceedances due to traffic volume increases at nearby intersections. The proposed project is not projected to

contribute to the exceedance of any air pollutant concentration standards, thus the project is found to be consistent with the AQMP for the first criterion.

**Criterion 2 - Exceed Assumptions in the AQMP?**

Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the analyses conducted for the project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. Air pollutant emissions between the completion of Phase 1 construction and the completion of Phase 2 construction will be greater, by about one-third, than the existing development. The analysis presented above shows that the total project emissions during this period are less than the SCAQMD significance thresholds. The temporary emissions increase during this period is minor and will not interfere with the AQMP or the attainment of the ambient air quality standards. The ultimate project will not considerably change pollutant emissions compared to the existing development on the project site. Therefore, emissions from the project site at project completion will not be greater than those anticipated in the AQMP.

## 3.0 Mitigation Measures

### 3.1 Short-Term Impacts

The analysis presented in Section 2.2 concluded that the construction of the project would not result in any significant short-term air quality impacts. Note that the calculations assumed watering of the site twice a day during grading and demolition activities as required by SCAQMD Rule 403. All applicable provisions of SCAQMD Rule 403 shall be implemented. The project is being developed under the UC Irvine Long Range Development Plan. Mitigation measure Air-2B from the FEIR prepared for the plan will also need to be applied to the project. This mitigation measure is presented below. No project specific mitigation measures are required.

#### 3.1.1 Long Range Development Plan Mitigation Measure Air-2B

Prior to initiating on-site construction UCI shall ensure that the project construction contract includes a construction emissions mitigation plan, including measures compliant with SCAQMD Rule 403 (Fugitive Dust) to be implemented and supervised by the on-site construction supervisor, which shall include, but not be limited to, the following Best Management Practices (BMPs):

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



- x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.
- xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable.
- xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.
- xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.
- xiv. Heavy construction equipment shall use low NO<sub>x</sub> diesel fuel to the extent that it is readily available at the time of construction.
- xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines.
- xvi. The construction contractor shall develop a construction traffic management plan that includes the following:
  - Scheduling heavy-duty truck deliveries to avoid peak traffic periods
  - Consolidating truck deliveries
- xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers.
- xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible.
- xix. Project construction plans and specifications will include a requirement to define and implement a work program that would limit the emissions of reactive organic gases (ROG's) during the application of architectural coatings to the extent necessary to keep total daily ROG's for each project to below 75 pounds per day, or the current SCAQMD threshold, throughout that period of construction activity to the extent feasible. The specific program may include any combination of restrictions on the types of paints and coatings, application methods, and the amount of surface area coated as determined by the contractor.
- xx. The construction contractor shall maintain signage along the construction perimeter with the name and telephone number of the individual in charge of implementing the construction emissions mitigation plan, and with the telephone number of the SCAQMD's complaint line. The contractor's representative shall maintain a log of public complaints and corrective actions taken to resolve complaints.

### **3.2 Long-Term Impacts**

The analysis presented in Section 2.3 concluded that the operation of the project would not result in any significant long-term air quality impacts. No mitigation measures are required.

### **4.0 Unavoidable Significant Impacts**

With the mitigation measures described in Section 3.0, all significant impacts will be reduced to a level of insignificance and the project will not result in any unavoidable significant impacts.

# Appendix

## URBEMIS Output Files

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Phase 1 Construction.urb924

Project Name: Verano Place Phase 1 Constructon

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	8.59	47.07	56.76	0.06	30.10	3.11	31.82	6.28	2.85	7.86	8,909.23
2010 TOTALS (lbs/day mitigated)	8.59	47.07	56.76	0.06	30.10	3.11	31.82	6.28	2.85	7.86	8,909.23
2011 TOTALS (lbs/day unmitigated)	4.47	26.32	43.40	0.06	0.24	1.58	1.82	0.08	1.45	1.53	7,070.77
2011 TOTALS (lbs/day mitigated)	4.47	26.32	43.40	0.06	0.24	1.58	1.82	0.08	1.45	1.53	7,070.77
2012 TOTALS (lbs/day unmitigated)	66.66	24.36	43.23	0.06	0.25	1.45	1.70	0.09	1.33	1.41	7,427.05
2012 TOTALS (lbs/day mitigated)	66.66	24.36	43.23	0.06	0.25	1.45	1.70	0.09	1.33	1.41	7,427.05

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

3/2/2010 11:47:22 AM

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 8/30/2010-10/22/2010 Active Days: 40	3.49	40.42	16.39	0.04	<b>30.10</b>	1.72	<b>31.82</b>	<b>6.28</b>	1.58	<b>7.86</b>	5,317.30
Demolition 08/30/2010- 10/22/2010	3.49	40.42	16.39	0.04	30.10	1.72	31.82	6.28	1.58	7.86	5,317.30
Fugitive Dust	0.00	0.00	0.00	0.00	29.95	0.00	29.95	6.23	0.00	6.23	0.00
Demo Off Road Diesel	1.24	10.22	4.36	0.00	0.00	0.53	0.53	0.00	0.48	0.48	994.60
Demo On Road Diesel	2.21	30.15	11.04	0.04	0.14	1.19	1.33	0.05	1.10	1.14	4,198.25
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.44
Time Slice 10/25/2010-11/5/2010 Active Days: 10	3.47	34.04	16.16	0.02	20.07	1.52	21.59	4.20	1.40	5.60	3,898.06
Mass Grading 10/25/2010- 11/05/2010	3.47	34.04	16.16	0.02	20.07	1.52	21.59	4.20	1.40	5.60	3,898.06
Mass Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Mass Grading Off Road Diesel	2.45	20.50	10.00	0.00	0.00	0.98	0.98	0.00	0.90	0.90	1,867.44
Mass Grading On Road Diesel	0.99	13.46	4.93	0.02	0.06	0.53	0.60	0.02	0.49	0.51	1,875.07
Mass Grading Worker Trips	0.04	0.07	1.23	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.56
Time Slice 11/8/2010-11/19/2010 Active Days: 10	3.79	33.01	14.87	0.00	30.01	1.42	31.43	6.27	1.31	7.58	3,444.91
Fine Grading 11/08/2010- 11/19/2010	3.79	33.01	14.87	0.00	30.01	1.42	31.43	6.27	1.31	7.58	3,444.91
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	3.76	32.95	13.89	0.00	0.00	1.42	1.42	0.00	1.31	1.31	3,320.47
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	124.44

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Time Slice 11/22/2010-12/3/2010	<u>8.59</u>	<u>47.07</u>	<u>56.76</u>	<u>0.06</u>	0.26	<u>3.11</u>	3.37	0.09	<u>2.85</u>	2.94	<u>8,909.23</u>
Active Days: 10											
Asphalt 11/22/2010-12/03/2010	3.75	18.62	10.63	0.01	0.03	1.43	1.45	0.01	1.31	1.32	1,837.56
Paving Off-Gas	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.35	14.20	8.05	0.00	0.00	1.25	1.25	0.00	1.15	1.15	1,104.54
Paving On Road Diesel	0.32	4.37	1.60	0.01	0.02	0.17	0.19	0.01	0.16	0.17	608.58
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.44
Building 11/22/2010-09/07/2012	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Building Off Road Diesel	3.15	16.84	10.33	0.00	0.00	1.19	1.19	0.00	1.09	1.09	1,606.76
Building Vendor Trips	0.82	9.95	7.44	0.02	0.07	0.40	0.47	0.02	0.37	0.39	1,880.92
Building Worker Trips	0.87	1.65	28.35	0.04	0.17	0.09	0.26	0.06	0.08	0.14	3,584.00
Time Slice 12/6/2010-12/31/2010	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Active Days: 20											
Building 11/22/2010-09/07/2012	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Building Off Road Diesel	3.15	16.84	10.33	0.00	0.00	1.19	1.19	0.00	1.09	1.09	1,606.76
Building Vendor Trips	0.82	9.95	7.44	0.02	0.07	0.40	0.47	0.02	0.37	0.39	1,880.92
Building Worker Trips	0.87	1.65	28.35	0.04	0.17	0.09	0.26	0.06	0.08	0.14	3,584.00
Time Slice 1/3/2011-12/30/2011	<u>4.47</u>	<u>26.32</u>	<u>43.40</u>	<u>0.06</u>	<u>0.24</u>	<u>1.58</u>	<u>1.82</u>	<u>0.08</u>	<u>1.45</u>	<u>1.53</u>	<u>7,070.77</u>
Active Days: 260											
Building 11/22/2010-09/07/2012	4.47	26.32	43.40	0.06	0.24	1.58	1.82	0.08	1.45	1.53	7,070.77
Building Off Road Diesel	2.91	15.86	10.04	0.00	0.00	1.12	1.12	0.00	1.03	1.03	1,606.76
Building Vendor Trips	0.76	8.95	6.92	0.02	0.07	0.36	0.42	0.02	0.33	0.35	1,880.88
Building Worker Trips	0.80	1.51	26.43	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,583.13

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Time Slice 1/2/2012-7/13/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Active Days: 140											
Building 11/22/2010-09/07/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Building Off Road Diesel	2.71	14.87	9.77	0.00	0.00	1.03	1.03	0.00	0.94	0.94	1,606.76
Building Vendor Trips	0.70	7.96	6.41	0.02	0.07	0.32	0.38	0.02	0.29	0.31	1,880.91
Building Worker Trips	0.73	1.38	24.60	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,582.53
Time Slice 7/16/2012-9/7/2012	<b>66.66</b>	<b>24.36</b>	<b>43.23</b>	<b>0.06</b>	<b>0.25</b>	<b>1.45</b>	<b>1.70</b>	<b>0.09</b>	<b>1.33</b>	<b>1.41</b>	<b>7,427.05</b>
Active Days: 40											
Building 11/22/2010-09/07/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Building Off Road Diesel	2.71	14.87	9.77	0.00	0.00	1.03	1.03	0.00	0.94	0.94	1,606.76
Building Vendor Trips	0.70	7.96	6.41	0.02	0.07	0.32	0.38	0.02	0.29	0.31	1,880.91
Building Worker Trips	0.73	1.38	24.60	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,582.53
Coating 07/16/2012-09/07/2012	62.52	0.14	2.45	0.00	0.02	0.01	0.03	0.01	0.01	0.01	356.85
Architectural Coating	62.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.14	2.45	0.00	0.02	0.01	0.03	0.01	0.01	0.01	356.85

Phase Assumptions

Phase: Demolition 8/30/2010 - 10/22/2010 - Demolition

Building Volume Total (cubic feet): 1424672

Building Volume Daily (cubic feet): 71318

On Road Truck Travel (VMT): 990.53

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 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 8 hours per day

Phase: Fine Grading 11/8/2010 - 11/19/2010 - Grading

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Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 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 10/25/2010 - 11/5/2010 - Hardscape Demolition

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 442.4

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 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: Paving 11/22/2010 - 12/3/2010 - Paving

Acres to be Paved: 4

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 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

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Phase: Building Construction 11/22/2010 - 9/7/2012 - Building

Off-Road Equipment:

2 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 7/16/2012 - 9/7/2012 - Painting

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

ROG

NOx

CO

SO2

PM10 Dust

PM10 Exhaust

PM10

PM2.5 Dust

PM2.5 Exhaust

PM2.5

CO2



**3/2/2010 11:47:22 AM**

Time Slice 8/30/2010-10/22/2010 Active Days: 40	3.49	40.42	16.39	0.04	<b>30.10</b>	1.72	<b>31.82</b>	<b>6.28</b>	1.58	<b>7.86</b>	5,317.30
Demolition 08/30/2010- 10/22/2010	3.49	40.42	16.39	0.04	30.10	1.72	31.82	6.28	1.58	7.86	5,317.30
Fugitive Dust	0.00	0.00	0.00	0.00	29.95	0.00	29.95	6.23	0.00	6.23	0.00
Demo Off Road Diesel	1.24	10.22	4.36	0.00	0.00	0.53	0.53	0.00	0.48	0.48	994.60
Demo On Road Diesel	2.21	30.15	11.04	0.04	0.14	1.19	1.33	0.05	1.10	1.14	4,198.25
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.44
Time Slice 10/25/2010-11/5/2010 Active Days: 10	3.47	34.04	16.16	0.02	7.87	1.52	9.39	1.65	1.40	3.05	3,898.06
Mass Grading 10/25/2010- 11/05/2010	3.47	34.04	16.16	0.02	7.87	1.52	9.39	1.65	1.40	3.05	3,898.06
Mass Grading Dust	0.00	0.00	0.00	0.00	7.80	0.00	7.80	1.63	0.00	1.63	0.00
Mass Grading Off Road Diesel	2.45	20.50	10.00	0.00	0.00	0.98	0.98	0.00	0.90	0.90	1,867.44
Mass Grading On Road Diesel	0.99	13.46	4.93	0.02	0.06	0.53	0.60	0.02	0.49	0.51	1,875.07
Mass Grading Worker Trips	0.04	0.07	1.23	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.56
Time Slice 11/8/2010-11/19/2010 Active Days: 10	3.79	33.01	14.87	0.00	11.71	1.42	13.13	2.45	1.31	3.76	3,444.91
Fine Grading 11/08/2010- 11/19/2010	3.79	33.01	14.87	0.00	11.71	1.42	13.13	2.45	1.31	3.76	3,444.91
Fine Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Fine Grading Off Road Diesel	3.76	32.95	13.89	0.00	0.00	1.42	1.42	0.00	1.31	1.31	3,320.47
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	124.44

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Time Slice 11/22/2010-12/3/2010	<u>8.59</u>	<u>47.07</u>	<u>56.76</u>	<u>0.06</u>	0.26	<u>3.11</u>	3.37	0.09	<u>2.85</u>	2.94	<u>8,909.23</u>
Active Days: 10											
Asphalt 11/22/2010-12/03/2010	3.75	18.62	10.63	0.01	0.03	1.43	1.45	0.01	1.31	1.32	1,837.56
Paving Off-Gas	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.35	14.20	8.05	0.00	0.00	1.25	1.25	0.00	1.15	1.15	1,104.54
Paving On Road Diesel	0.32	4.37	1.60	0.01	0.02	0.17	0.19	0.01	0.16	0.17	608.58
Paving Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.44
Building 11/22/2010-09/07/2012	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Building Off Road Diesel	3.15	16.84	10.33	0.00	0.00	1.19	1.19	0.00	1.09	1.09	1,606.76
Building Vendor Trips	0.82	9.95	7.44	0.02	0.07	0.40	0.47	0.02	0.37	0.39	1,880.92
Building Worker Trips	0.87	1.65	28.35	0.04	0.17	0.09	0.26	0.06	0.08	0.14	3,584.00
Time Slice 12/6/2010-12/31/2010	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Active Days: 20											
Building 11/22/2010-09/07/2012	4.84	28.44	46.12	0.06	0.24	1.68	1.92	0.08	1.54	1.62	7,071.67
Building Off Road Diesel	3.15	16.84	10.33	0.00	0.00	1.19	1.19	0.00	1.09	1.09	1,606.76
Building Vendor Trips	0.82	9.95	7.44	0.02	0.07	0.40	0.47	0.02	0.37	0.39	1,880.92
Building Worker Trips	0.87	1.65	28.35	0.04	0.17	0.09	0.26	0.06	0.08	0.14	3,584.00
Time Slice 1/3/2011-12/30/2011	<u>4.47</u>	<u>26.32</u>	<u>43.40</u>	<u>0.06</u>	<u>0.24</u>	<u>1.58</u>	<u>1.82</u>	<u>0.08</u>	<u>1.45</u>	<u>1.53</u>	<u>7,070.77</u>
Active Days: 260											
Building 11/22/2010-09/07/2012	4.47	26.32	43.40	0.06	0.24	1.58	1.82	0.08	1.45	1.53	7,070.77
Building Off Road Diesel	2.91	15.86	10.04	0.00	0.00	1.12	1.12	0.00	1.03	1.03	1,606.76
Building Vendor Trips	0.76	8.95	6.92	0.02	0.07	0.36	0.42	0.02	0.33	0.35	1,880.88
Building Worker Trips	0.80	1.51	26.43	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,583.13

**3/2/2010 11:47:22 AM**

Time Slice 1/2/2012-7/13/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Active Days: 140											
Building 11/22/2010-09/07/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Building Off Road Diesel	2.71	14.87	9.77	0.00	0.00	1.03	1.03	0.00	0.94	0.94	1,606.76
Building Vendor Trips	0.70	7.96	6.41	0.02	0.07	0.32	0.38	0.02	0.29	0.31	1,880.91
Building Worker Trips	0.73	1.38	24.60	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,582.53
Time Slice 7/16/2012-9/7/2012	<b>66.66</b>	<b>24.36</b>	<b>43.23</b>	<b>0.06</b>	<b>0.25</b>	<b>1.45</b>	<b>1.70</b>	<b>0.09</b>	<b>1.33</b>	<b>1.41</b>	<b>7,427.05</b>
Active Days: 40											
Building 11/22/2010-09/07/2012	4.14	24.22	40.78	0.06	0.24	1.44	1.68	0.08	1.32	1.40	7,070.19
Building Off Road Diesel	2.71	14.87	9.77	0.00	0.00	1.03	1.03	0.00	0.94	0.94	1,606.76
Building Vendor Trips	0.70	7.96	6.41	0.02	0.07	0.32	0.38	0.02	0.29	0.31	1,880.91
Building Worker Trips	0.73	1.38	24.60	0.04	0.17	0.10	0.27	0.06	0.08	0.14	3,582.53
Coating 07/16/2012-09/07/2012	62.52	0.14	2.45	0.00	0.02	0.01	0.03	0.01	0.01	0.01	356.85
Architectural Coating	62.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.14	2.45	0.00	0.02	0.01	0.03	0.01	0.01	0.01	356.85

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/8/2010 - 11/19/2010 - Grading

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 10/25/2010 - 11/5/2010 - Hardscape Demolition

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Phase 2 Construction.urb924

Project Name: Verano Place Phase 2 Construcion

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014 TOTALS (lbs/day unmitigated)	3.09	26.00	12.32	0.04	30.10	1.03	31.13	6.28	0.95	7.23	5,317.22
2014 TOTALS (lbs/day mitigated)	3.09	26.00	12.32	0.04	30.10	1.03	31.13	6.28	0.95	7.23	5,317.22

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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**3/2/2010 12:34:25 PM**

Time Slice 9/1/2014-10/24/2014	2.52	<u>26.00</u>	11.55	<u>0.04</u>	<u>30.10</u>	<u>1.03</u>	<u>31.13</u>	<u>6.28</u>	<u>0.95</u>	<u>7.23</u>	<u>5,317.22</u>
Active Days: 40											
Demolition 09/01/2014-10/24/2014	2.52	26.00	11.55	0.04	30.10	1.03	31.13	6.28	0.95	7.23	5,317.22
Fugitive Dust	0.00	0.00	0.00	0.00	29.95	0.00	29.95	6.23	0.00	6.23	0.00
Demo Off Road Diesel	0.98	7.51	3.88	0.00	0.00	0.35	0.35	0.00	0.32	0.32	994.60
Demo On Road Diesel	1.52	18.45	6.92	0.04	0.14	0.68	0.82	0.05	0.62	0.67	4,198.25
Demo Worker Trips	0.02	0.04	0.74	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 10/27/2014-11/7/2014	2.70	24.06	<u>12.32</u>	0.02	20.07	1.00	21.07	4.20	0.92	5.12	3,897.97
Active Days: 10											
Mass Grading 10/27/2014-11/07/2014	2.70	24.06	12.32	0.02	20.07	1.00	21.07	4.20	0.92	5.12	3,897.97
Mass Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Mass Grading Off Road Diesel	2.00	15.77	8.30	0.00	0.00	0.69	0.69	0.00	0.64	0.64	1,867.44
Mass Grading On Road Diesel	0.68	8.24	3.09	0.02	0.06	0.30	0.37	0.02	0.28	0.30	1,875.07
Mass Grading Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46
Time Slice 11/10/2014-11/21/2014	<u>3.09</u>	24.13	12.11	0.00	30.01	1.00	31.01	6.27	0.92	7.19	3,444.84
Active Days: 10											
Fine Grading 11/10/2014-11/21/2014	3.09	24.13	12.11	0.00	30.01	1.00	31.01	6.27	0.92	7.19	3,444.84
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	3.07	24.09	11.37	0.00	0.00	1.00	1.00	0.00	0.92	0.92	3,320.47
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	0.02	0.04	0.74	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

Phase Assumptions

Phase: Demolition 9/1/2014 - 10/24/2014 - Demolition

Building Volume Total (cubic feet): 1424672

Building Volume Daily (cubic feet): 71318

Page: 3

**3/2/2010 12:34:25 PM**

On Road Truck Travel (VMT): 990.53

Off-Road Equipment:

- 1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day
- 1 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 8 hours per day

Phase: Fine Grading 11/10/2014 - 11/21/2014 - Grading

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 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 10/27/2014 - 11/7/2014 - Hardscape Demolition

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 442.4

Off-Road Equipment:

- 2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 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

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## Construction Mitigated Detail Report:

## CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 9/1/2014-10/24/2014 Active Days: 40	2.52	<u>26.00</u>	11.55	<u>0.04</u>	<u>30.10</u>	<u>1.03</u>	<u>31.13</u>	<u>6.28</u>	<u>0.95</u>	<u>7.23</u>	<u>5,317.22</u>
Demolition 09/01/2014- 10/24/2014	2.52	26.00	11.55	0.04	30.10	1.03	31.13	6.28	0.95	7.23	5,317.22
Fugitive Dust	0.00	0.00	0.00	0.00	29.95	0.00	29.95	6.23	0.00	6.23	0.00
Demo Off Road Diesel	0.98	7.51	3.88	0.00	0.00	0.35	0.35	0.00	0.32	0.32	994.60
Demo On Road Diesel	1.52	18.45	6.92	0.04	0.14	0.68	0.82	0.05	0.62	0.67	4,198.25
Demo Worker Trips	0.02	0.04	0.74	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 10/27/2014-11/7/2014 Active Days: 10	2.70	24.06	<u>12.32</u>	0.02	7.87	1.00	8.87	1.65	0.92	2.57	3,897.97
Mass Grading 10/27/2014- 11/07/2014	2.70	24.06	12.32	0.02	7.87	1.00	8.87	1.65	0.92	2.57	3,897.97
Mass Grading Dust	0.00	0.00	0.00	0.00	7.80	0.00	7.80	1.63	0.00	1.63	0.00
Mass Grading Off Road Diesel	2.00	15.77	8.30	0.00	0.00	0.69	0.69	0.00	0.64	0.64	1,867.44
Mass Grading On Road Diesel	0.68	8.24	3.09	0.02	0.06	0.30	0.37	0.02	0.28	0.30	1,875.07
Mass Grading Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.46

**3/2/2010 12:34:25 PM**

Time Slice 11/10/2014-11/21/2014	<u>3.09</u>	24.13	12.11	0.00	11.71	1.00	12.71	2.45	0.92	3.37	3,444.84
Active Days: 10											
Fine Grading 11/10/2014-11/21/2014	3.09	24.13	12.11	0.00	11.71	1.00	12.71	2.45	0.92	3.37	3,444.84
Fine Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Fine Grading Off Road Diesel	3.07	24.09	11.37	0.00	0.00	1.00	1.00	0.00	0.92	0.92	3,320.47
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	0.02	0.04	0.74	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/10/2014 - 11/21/2014 - Grading

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 10/27/2014 - 11/7/2014 - Hardscape Demolition

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%



Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Project\Project Operational 2012.urb924

Project Name: Verano Place Project Operational Year 2012

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	16.13	2.94	1.25	0.00	0.01	0.01	3,754.76

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	9.53	11.65	94.26	0.10	19.44	3.76	10,443.76

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	25.66	14.59	95.51	0.10	19.45	3.77	14,198.52

3/2/2010 5:34:40 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.23	2.94	1.25	0.00	0.01	0.01	3,754.76
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	15.39						
Architectural Coatings	0.51						
<b>TOTALS (lbs/day, unmitigated)</b>	<b>16.13</b>	<b>2.94</b>	<b>1.25</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>3,754.76</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments mid rise	9.53	11.65	94.26	0.10	19.44	3.76	10,443.76
<b>TOTALS (lbs/day, unmitigated)</b>	<b>9.53</b>	<b>11.65</b>	<b>94.26</b>	<b>0.10</b>	<b>19.44</b>	<b>3.76</b>	<b>10,443.76</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

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 mid rise	17.40	4.25	dwelling units	300.00	1,275.00	11,277.38
					1,275.00	11,277.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Project\Project Operational 2012.urb924

Project Name: Verano Place Project Operational Year 2012

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	16.13	2.94	1.25	0.00	0.01	0.01	3,754.76

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	10.04	12.34	99.80	0.10	20.59	3.98	11,058.09

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	26.17	15.28	101.05	0.10	20.60	3.99	14,812.85

3/2/2010 2:16:03 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.23	2.94	1.25	0.00	0.01	0.01	3,754.76
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	15.39						
Architectural Coatings	0.51						
<b>TOTALS (lbs/day, unmitigated)</b>	<b>16.13</b>	<b>2.94</b>	<b>1.25</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>3,754.76</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments mid rise	10.04	12.34	99.80	0.10	20.59	3.98	11,058.09
<b>TOTALS (lbs/day, unmitigated)</b>	<b>10.04</b>	<b>12.34</b>	<b>99.80</b>	<b>0.10</b>	<b>20.59</b>	<b>3.98</b>	<b>11,058.09</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

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 mid rise	17.40	4.50	dwelling units	300.00	1,350.00	11,940.75
					1,350.00	11,940.75

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)



**APPENDIX B**

**GREENHOUSE GAS ASSESSMENT**

**Greenhouse Gas Assessment For:**  
**VERANO PLACE HOUSING**  
**REDEVELOPMENT**

Prepared For:  
**UNIVERSITY OF CALIFORNIA, IRVINE**  
Campus and Environmental Planning  
750 University Tower  
Irvine, CA 92697-2325

Submitted By:  
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March 15, 2010  
Report #510901GGO

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## **1.0 Background Information**

### **1.1 Project Description**

Verano Place Housing is a graduate and family apartment community located on the east side of the University of California, Irvine campus bounded by Adobe Circle Road North to the north, Palo Verde Drive to the south, California Avenue to the east and East Peltason Drive to the west. Exhibit 1 presents a vicinity map showing the project location and Exhibit 2 shows a map of the Verano Place Housing and the portion proposed for redevelopment by the project. The project area includes approximately 400 bedrooms in approximately 21 two-story apartment buildings, an infant/toddler center of approximately 2,608 square feet, The Nest (building 4700) of approximately 4,320 square feet, and four laundry buildings with a total floor area of approximately 2,625 square feet. The project proposes removing these existing buildings and replacing them. The residential apartments would be replaced with four to six story buildings and the other existing buildings would be replaced with similar sized structures. A new approximate 8,931 square foot community building would be added to the site.

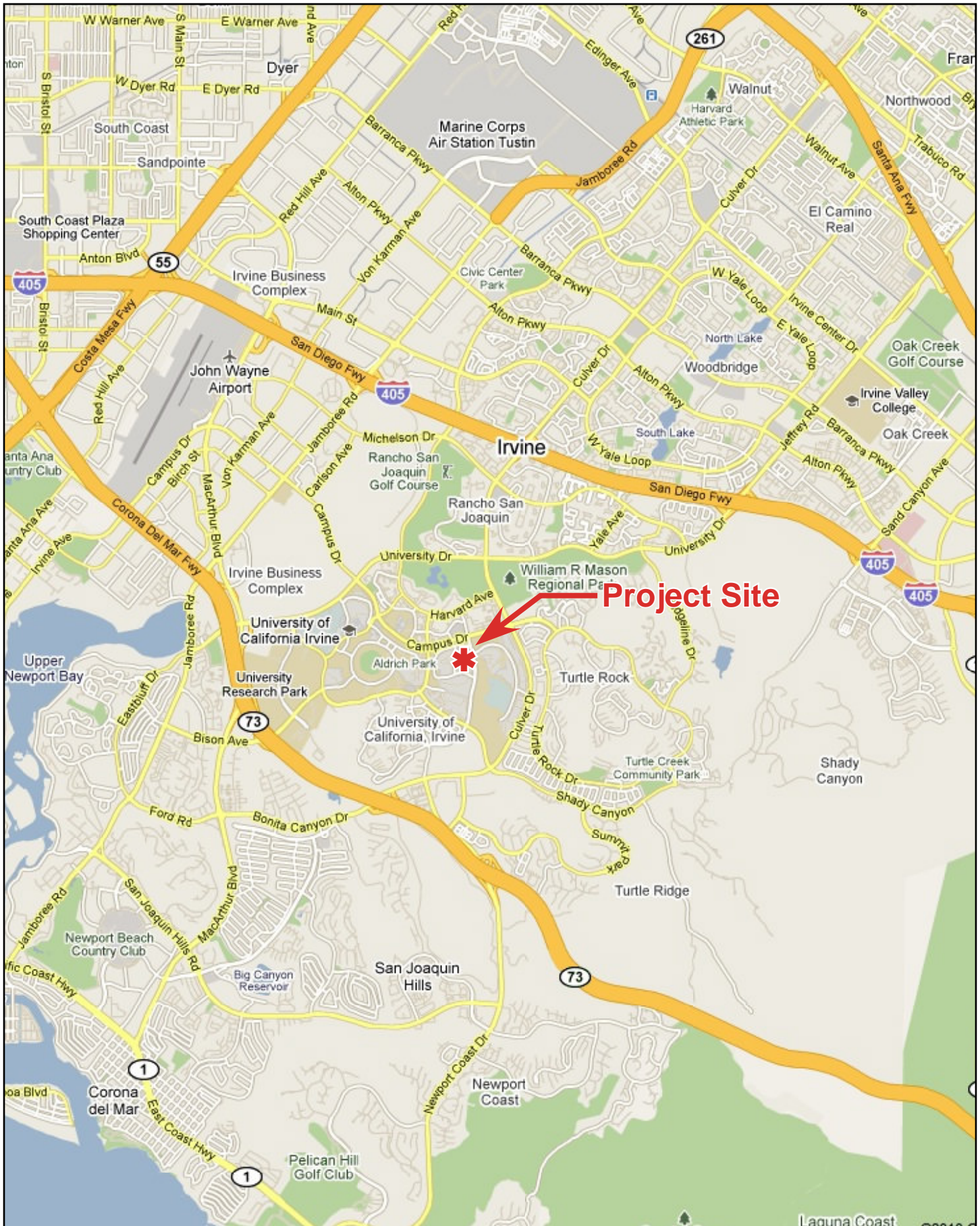
The project would be undertaken in two phases. In the first phase approximately half of the existing apartment buildings and associated hardscape would be demolished and the replacement apartment buildings and other structures would be constructed. This work is expected to begin in September 2010 and be completed in September 2012. During the second phase, the remaining existing structures would be demolished. This work is expected to begin in September 2014 and be completed in November 2014. Upon completion of the project the project site will contain the same uses (i.e., the same number of bedrooms and square footage of other uses) except for the added community building. For two years, between September 2012 and September 2014, the project site will contain 200 additional bedrooms over existing and ultimate conditions.

### **1.2 Greenhouse Gases and Climate Change**

#### **1.2.1 Impact of Climate Change**

The Earth's climate changes over periods of time that range from decades to millions of years. Climate change is due to many different natural factors. These factors include but are not limited to, changes in the Earth's orbit, volcanic eruptions, ocean variability, and solar output variations. The interplay of these natural factors has caused historical global temperature fluctuations ranging from ice ages to long periods of global warming. However, since the Industrial Revolution in the late 18th century, human activities have become a major influence in the rate of climate change. The Intergovernmental Panel on Climate Change (IPCC) concludes that increasing greenhouse gas concentrations in the atmosphere resulting from human activities, such as burning fossil fuels and deforestation, caused most of the observed temperature increases in the Earth's near-surface air and oceans since the middle of the 20th century.

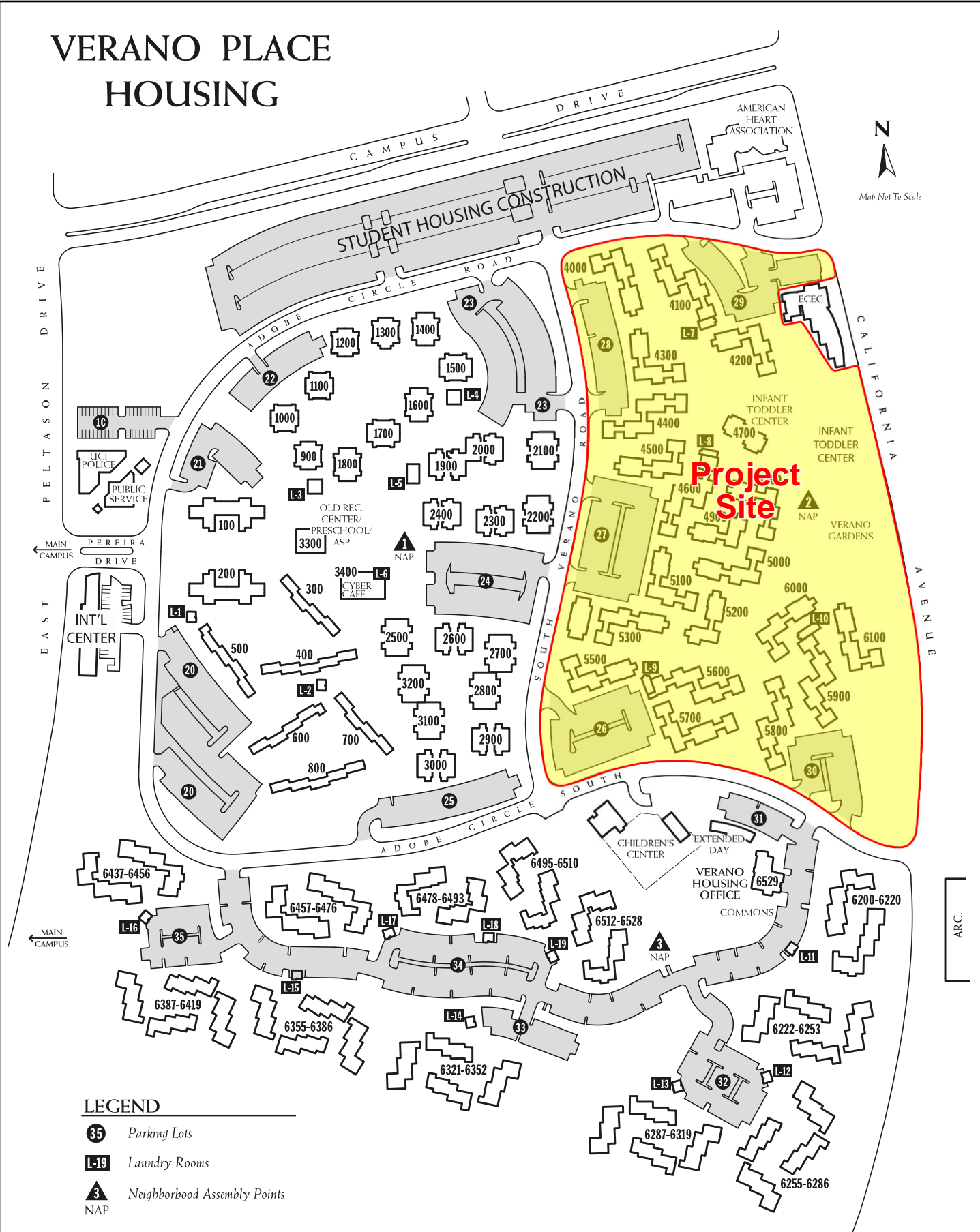
According to the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) data, the average surface temperature of the Earth has increased by about 1.2 to 1.4 °F since 1900. The warmest global average temperatures in human record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005. [EPA, 2007, [epa.gov/climatechange/basicinfo.html](http://epa.gov/climatechange/basicinfo.html)].



**Project Site**



# VERANO PLACE HOUSING



## LEGEND

- 35 Parking Lots
- L-19 Laundry Rooms
- ▲ Neighborhood Assembly Points  
NAP

The greenhouse effect is the process by which absorption and emission of infrared radiation by gases in the atmosphere warm the Earth's lower atmosphere and surface. This process of heating is often referred to as 'global warming,' although the National Academy of Sciences prefers the terms 'climate change' as an umbrella phrase which includes global warming as well as other environmental changes, in addition to the increasing temperatures. Some of these effects include changes to rainfall, wind, and current weather patterns, as well as snow and ice cover, and sea level.

Depending on which GHG emissions scenario is used, climate models predict that the Earth's average temperature could rise anywhere between 2.5 to 10.4 °F from 1990 to the end of this century. The degree of change is influenced by the assumed amount of GHG emissions, and how quickly atmospheric GHG levels are stabilized. At this point, however, the climate change models are not capable of predicting local impacts, but rather, can only predict global trends. [EPA, 2007, [epa.gov/climatechange/basicinfo.html](http://epa.gov/climatechange/basicinfo.html)].

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMT CO<sub>2</sub>EQ") units. A metric ton is approximately 2,205 lbs. Some GHGs emitted into the atmosphere are naturally occurring, while others are caused solely by human activities. The major naturally occurring, or biogenic, greenhouse gases (GHG) include water vapor, carbon dioxide, methane, and ozone. Human activities since the Industrial Revolution have increased the amount of these natural GHGs and introduced chlorofluorocarbons (CFCs), nitrous oxide, and other anthropogenic GHGs in the atmosphere. Below are descriptions of the general human activity sources of several common GHGs:

- **Carbon dioxide (CO<sub>2</sub>)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.
- **Methane (CH<sub>4</sub>)** is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.
- **Nitrous oxide (N<sub>2</sub>O)** is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.
- **Fluorinated Gases** are emitted primarily from industrial sources, which often include hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>). Though they are often released in smaller quantities, they are referred to as High Global Warming Potential Gases because of their ability to cause global warming. Fluorinated gases are often used as substitutes for ozone depleting substances.

These gases have different potentials for trapping heat in the atmosphere, called global warming potential ("GWP"). For example, one pound of methane has 21 times more heat capturing potential than one pound of carbon dioxide. When dealing with an array of emissions, the gases are converted to carbon dioxide equivalents for comparison purposes. The GWPs for common greenhouse gases are shown in Table 1.



**Table 1**  
**Global Warming Potentials (GWP)**

Gas	Global Warming Potential
Carbon Dioxide (CO <sub>2</sub> )	1
Methane (CH <sub>4</sub> )	21
Nitrous Oxide (N <sub>2</sub> O)	310
HFC-23	11,700
HFC-134a	1,300
HFC-152a	140
PFC: Tetrafluoromethane (CF <sub>4</sub> )	6,500
PFC: Hexafluoroethane (C <sub>2</sub> F <sub>6</sub> )	9,200
Sulfur Hexafluoride (SF <sub>6</sub> )	23,900

Source: EPA 2006. Non CO<sub>2</sub> Gases Economic Analysis and inventory. (<http://www.epa.gov/nonco2/econ-inv/table.html>), December 2006

### 1.2.2 Impact of Climate Change on California and Human Health

The long term environmental impacts of global warming may include sea level rise that could cause devastating erosion and flooding of coastal cities and villages, as well as more intense hurricanes and typhoons worldwide. In the United States, Chicago is projected to experience 25 percent more frequent heat waves and Los Angeles a four-to-eight-fold increase in heat wave days by the end of the century (IPCC, 2007: Climate Change 2007: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge).

Locally, global warming could cause changing weather patterns with increased storm and drought severity in California. Changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack (e.g., estimates include a 30 to 90% reduction in snow pack in the Sierra Nevada mountain range). Current data suggest that in the next 25 years, in every season of the year, California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. The California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature rises between 3 and 10.5° F
- 6 to 20 inches or more increase in sea level
- 2 to 4 times as many heat-wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers
- 1 to 1.5 times more critically dry years
- 10 to 55% increase in the risk of wildfires

An increase in the frequency of extreme events may result in more event-related deaths, injuries, infectious diseases, and stress-related disorders. Particular segments of the population such as those with heart problems, asthma, the elderly, the very young and the homeless can be especially vulnerable to extreme heat. Also, climate change may increase the risk of some

infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects. These "vector-borne" diseases include malaria, dengue fever, yellow fever, and encephalitis. Also, algal blooms could occur more frequently as temperatures warm — particularly in areas with polluted waters — in which case diseases (such as cholera) that tend to accompany algal blooms could become more frequent.

### 1.2.3 Adaptation Impact

Adaptation refers to potential climate change impacts on the project. Global warming is already having a profound impact on water resources. Climate change already altered the weather patterns and water supply in California leading to increased water shortages (i.e., a dwindling snowpack, bigger flood flows, rising sea levels, longer and harsher droughts). Water supplies are also at risk from rising sea levels. Risks may include degrade California's estuaries, wetlands, and groundwater aquifers which would threaten the quality and reliability of the major California fresh water supply (Climate Change Adaptation Strategies for California's Water, State of California Department of Water Resources, October 2008).

Higher temperatures will also likely increase electricity demand due to higher air conditioning use. Even if the population remained unchanged, toward the end of the century annual electricity demand could increase by as much as 20 percent if temperatures rise into the higher warming range. (Implementing aggressive efficiency measures could lower this estimate).

Higher temperatures may require that the project consume more electricity for cooling. Additionally, more water may be needed for the landscaping. However, sea level rise won't impact the project because it's so far and high relative to the ocean.

Adaptation includes the responses to the changing climate and policies to minimize the predicted impacts (e.g., building better coastal defenses to sea level rise). Adaptation is not included in this report. It should be note that adaptation is not mitigation. Mitigation includes intervention or policies to reduce GHG emissions or to enhance the sinks of GHGs.

## 1.3 Emission Inventories

To put perspective on the emissions generated by a project and to better understand the sources of GHGs, it is important to look at emission inventories. The United Nations has taken the lead in quantifying GHG emissions and compiling the literature on climate change. The United Nations estimated for CO<sub>2</sub> equivalents for the world and for the top ten CO<sub>2</sub> producing countries are presented in Table 2.

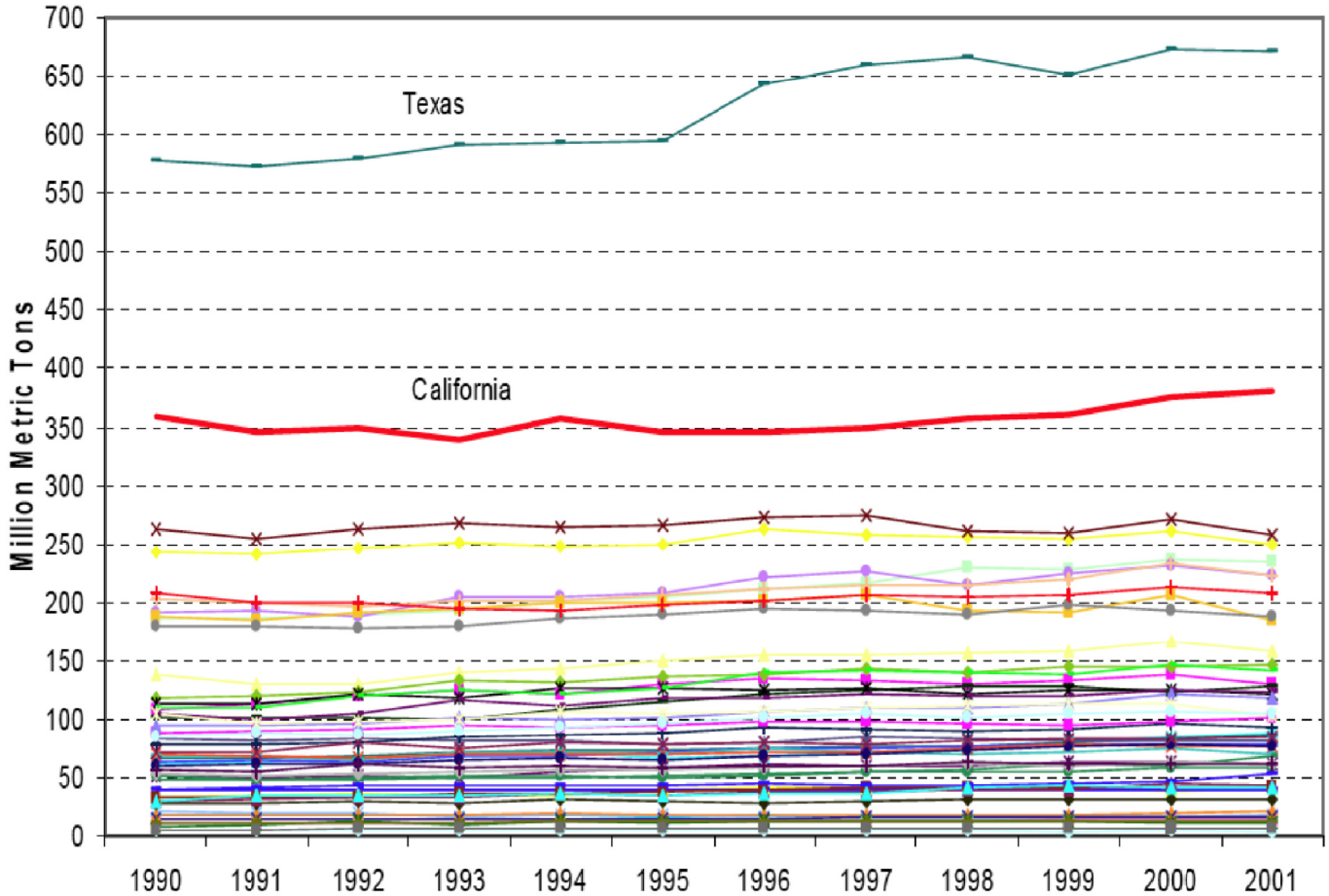
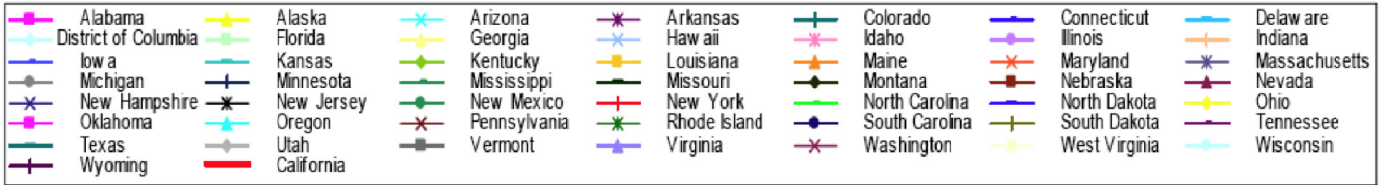
**Table 2**  
**Top Ten CO<sub>2</sub> Producing Nations between 1990-2004**  
**(Emissions in Million Metric Tons (MMT) CO<sub>2</sub>EQ)**

Country	GHG Emissions (MMT CO <sub>2</sub> EQ)	Percent of Global
1. United States	7017.32	21.06%
2. China	4057.31	12.17%
3. Japan	1340.08	4.02%
4. India	1214.25	3.64%
5. Germany	1004.79	3.02%
6. Canada	720.63	2.16%
7. Brazil	658.98	1.98%
8. United Kingdom	655.79	1.97%
9. Italy	567.92	1.70%
10. France	546.53	1.64%
Total Global	33,326	
<i>California</i>	<i>480</i>	<i>1.44%</i>

Source: United Nations Framework Convention on Climate Change, "National Greenhouse Gas Inventory Data for the Period 1990-2006 and Status of Reporting," October 19, 2006.

Global CO<sub>2</sub> emissions totaled about 33,326 MMT CO<sub>2</sub>EQ in 2006. The United States released 7,017 MMT CO<sub>2</sub>EQ in 2006, which is approximately 21% of the earth's total emissions.

Within the United States, California has the second highest level of GHG production with Texas having the highest. In 2001, the burning of fossil fuels produced over 81% of total GHG emissions. In relation to other states, California is the second highest producer of CO<sub>2</sub> by fossil fuels, as shown in Exhibit 3.



Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006

# Exhibit 3

## Fossil Fuel CO<sub>2</sub> Production by State

## 1.4 Sources of Greenhouse Gas in California

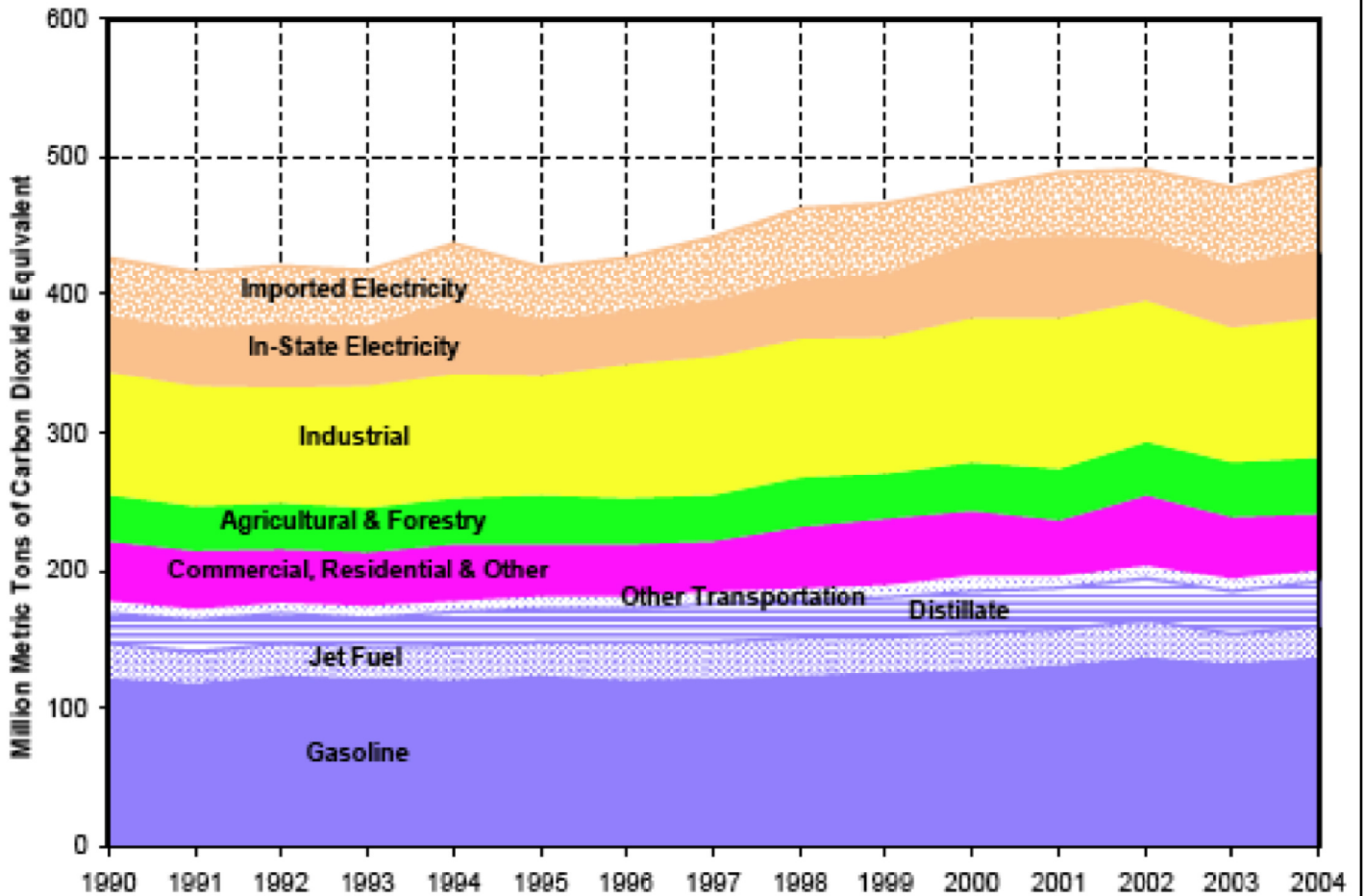
The California Energy Commission (“CEC”) categorizes GHG generation by source into five broad categories. The categories are:

- **Transportation** includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption and bunker fuel for ships.
- **Agriculture and forestry** GHG emissions are composed mostly of nitrous oxide from agricultural soil management, CO<sub>2</sub> from forestry practice changes, methane from enteric fermentation, and methane and nitrous oxide from manure management.
- **Commercial and residential** uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.
- **Industrial** GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.
- **Electric generation** includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.

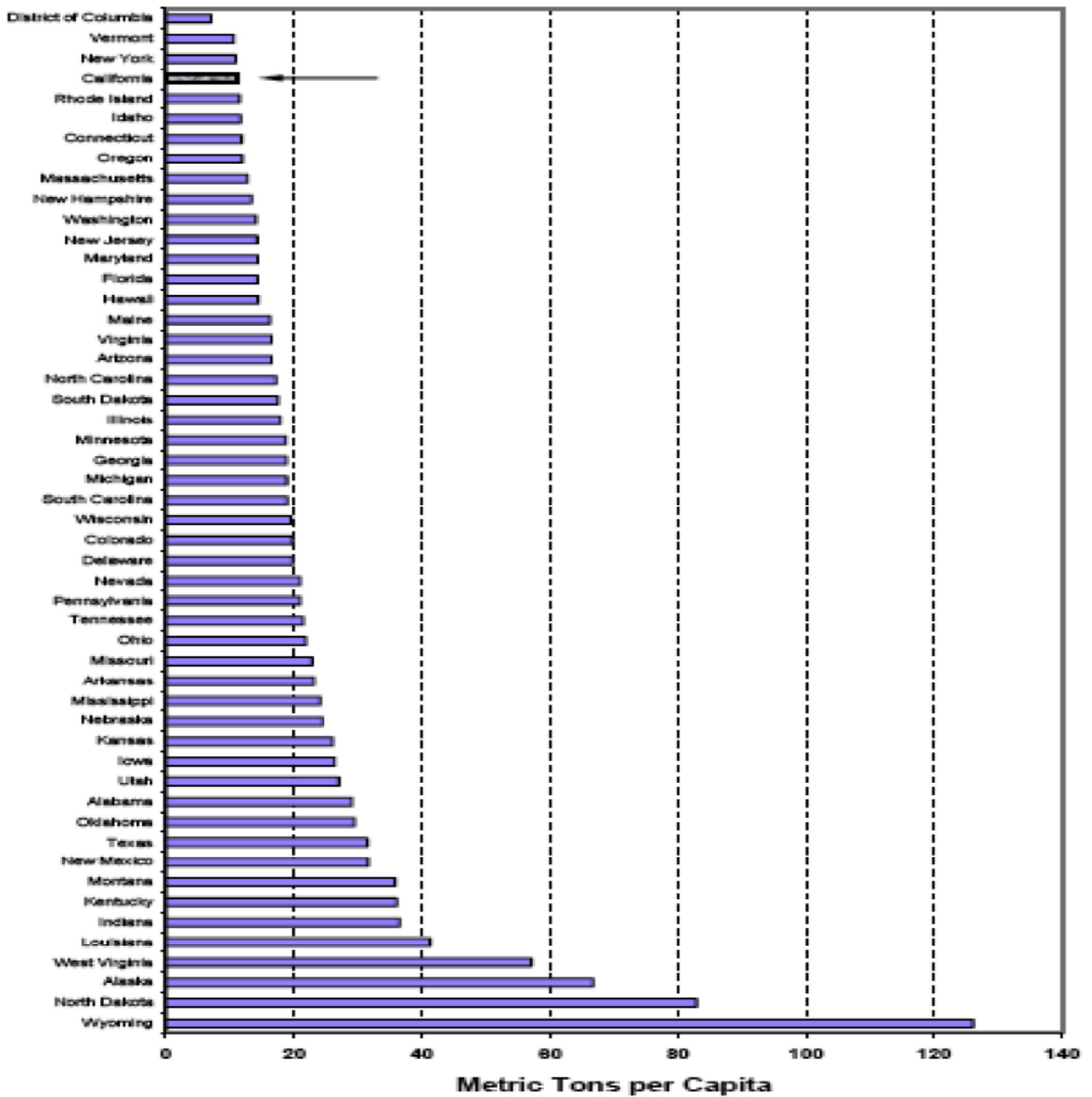
The amount of GHGs released from each of these categories in California from 1990 to 2004 is shown in Exhibit 4.

Examination of Exhibit 4 indicates that most of California’s GHGs are emitted by transportation sources, such as automobiles, trucks, and airplanes. (The transportation sector is labeled as gasoline, jet fuel, distillate, and other transportation in Exhibit 4.) Combustion of fossil fuels in the transportation sector contributed approximately 40% of the California GHG. This category was followed by the electric power sector (including both in-state and out-of-state sources) (22%) and the industrial sector (20%). The smallest GHG contributors are the commercial and residential sector, as well as the agricultural and forestry sector, accounted for about 10% and 8%, respectively.

While California has the second highest rate of GHG production in the nation, it should also be noted that California has one of the lowest per capita rates of GHG emissions, as shown in Exhibit 5. According to Exhibit 5, California had the fourth lowest per capita rate of CO<sub>2</sub> production from fossil fuels in the United States. Wyoming produced the most CO<sub>2</sub> per capita,



Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006



Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006

# Exhibit 5 CO<sub>2</sub> Emissions From Fossil Fuels Per Capita (2001)

## 1.5 Regulatory Framework

### 1.5.1 Federal Plans, Policies, Regulations, and Laws.

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Protection Act, 92 Stat. 601, which required the President to establish a program to “assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications.” The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. EPA to propose a “coordinated national policy on global climate change,” and ordered the Secretary of State to work “through the channels of multilateral diplomacy” to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

More recently, in *Massachusetts v. EPA* (April 2, 2007), the United State Supreme Court held that GHGs fall within the Clean Air Act’s definition of an “air pollutant,” and directed the EPA to consider whether GHGs are causing climate change. If so, the EPA must regulate GHG emissions from automobiles under the Clean Air Act.

While EPA has not finalized a regulation, it did issue a proposed rule on April 17, 2009. The rule declared that GHGs endanger human health and is the first step to regulation through the federal Clean Air Act. If it becomes final, the EPA would define air pollution to include the six key GHGs – CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>.

In addition, Congress has increased the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President Bush signed a bill raising the minimum average miles per gallon for cars, sport utility vehicles, and light trucks to 35 miles per gallon by 2020. This increase in CAFE standard will create a substantial reduction in GHG emissions from automobiles, which is the largest single emitting GHG sector in California.

As of this writing, however, there are no adopted federal plans, policies, regulations or laws setting a mandatory limit on GHG emissions. Further, the EPA has not finalized its evaluation in the wake of *Massachusetts v. EPA*.

### 1.5.2 California State Plans, Policies, Regulations, and Laws.

California has distinguished itself as a national leader in efforts to address global climate change by enacting several major pieces of legislation, engaging in multi-national and multi-state collaborative efforts, and preparing a wealth of information on the impacts associated with global climate change.

In November 2008, the Governor issued Executive Order S-13-08 directing state agencies to plan for sea level rise and other climate change impacts. There are four key actions in the Executive Order: (1) initiation of a climate change adaptation strategy that will assess the state’s expected climate change impacts where the state is most vulnerable, with recommendations by early 2009; (2) an expert panel on sea level rise will inform state planning and development efforts; (3) interim guidance to state agencies on planning for sea level rise in coastal and floodplain areas for new projects; and (4) initiation of a report on critical existing and planned infrastructure projects vulnerable to sea level rise. (<http://gov.ca.gov/executive-order/11036/>)

Pursuant to AB 32, the California Air Resources Board (“CARB”) has adopted a number of relevant policies and directives. In December 2008, the Scoping Plan was adopted. The Plan is a central requirement of the statute. In addition, it has adopted a number of protocols for industry



and government sectors, including one for local government (<http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm>). (See also, the Local Government Toolkit (<http://www.coolcalifornia.org/local-government>)).

As directed by SB97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines on December 30, 2009 to address greenhouse gas impacts. 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 will become effective on March 18, 2010. The following provides a summary of the amendments:

- *Determining the Significance of the Environmental Effects Caused By a Project* (Guidelines § 15064(h)(3)) was amended to clarify the types plans that can be used to determine if a project's incremental contribution to a cumulative effect is not cumulatively considerable when the project complies with the plans and requires explanation how the plan ensures that the project's incremental contribution to the cumulative effect is not cumulatively considerable.
- *Determining the Significance of Impacts from Greenhouse Gas Emissions* (Guidelines § 15064.4) allows the lead agency to determine if greenhouse gas emissions are significant through a quantitative analysis, a qualitative analysis, or performance based standards. It defines factors, among others, to be considered when assessing the significance of impacts including; (1) the change in greenhouse gas emissions relative to existing environmental setting, (2) whether the project emissions exceed a threshold of significance, (3) to the extent that the project complies with a publicly reviewed and approved plan for the reduction of greenhouse gas emissions.
- *Thresholds of Significance* (Guidelines § 15064.7(c)) allows the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or experts as supported by substantial evidence when adopting thresholds of significance.
- *Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects-Mitigation Measures Related to Greenhouse Gas Emissions* (Guidelines § 15126.4(c)) requires lead agencies to consider feasible means of mitigation of greenhouse gas emissions including; (1) measures in an existing plan, (2) reductions resulting through the implementation of project features, project design or other energy conservation measures, (3) off-site measures including offsets, and (4) measures that sequester greenhouse gas.
- *Discussion of Cumulative Impacts* (Guidelines § 15130(b)(1)(B) and Guidelines § 15130(d)) provides guidance on the use of planning documents and prior certified environmental documents in the analysis of cumulative impacts
- *Tiering and Streamlining the Analysis of Greenhouse Gas Emissions* (Guidelines § 15183.5) discusses the use of programmatic plans in the analysis of project specific environmental documents and provides suggested elements of a plan for reduction of greenhouse gas emissions.
- *Greenhouse Gas* (Guidelines § 150364.5) defines greenhouse gasses as including but not limited to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

*Assembly Bill 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.).* In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. In general, AB 32 directs the California Air Resources Board (“CARB”) to do the following:

- On or before June 30, 2007, CARB shall publish a list of discrete early action measures for reducing GHG emissions that can be implemented by January 1, 2010;
- By January 1, 2008, establish the statewide GHG emissions cap for 2020, based on CARB’s calculation of statewide GHG emissions in 1990 (an approximately 25 percent reduction in existing statewide GHG emissions);
- Also by January 1, 2008, adopt mandatory reporting rules for GHG emissions sources that “contribute the most to statewide emissions” (Health & Safety Code § 38530);
- By January 1, 2009, adopt a scoping plan that indicates how GHG emission reductions will be achieved from significant GHG sources through regulations, market mechanisms, and other strategies;
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020; and
- On January 1, 2012, CARB’s GHG emissions regulations become operative.
- On January 1, 2020, achieve 1990 levels of GHG emissions.

In a December 2006 report, CARB estimated that California emitted between 425 and 468 million metric tons of CO<sub>2</sub> in 1990. In December 2007, CARB finalized 1990 emissions at 427 million metric tons of CO<sub>2</sub>. In the August 2007 draft report, CARB estimated California emitted approximately 480 million metric tons of CO<sub>2</sub> in 2004. Based on the U.S. Census Bureau California 2007 population of 36,553,215, this would result in about 13 metric tons of CO<sub>2</sub> per capita.

AB 32 takes into account the relative contribution of each source or source category to protect adverse impacts on small businesses and others by requiring CARB to recommend a de minimis (minimal importance) threshold of GHG emissions below which emissions reduction requirements would not apply. AB 32 also allows the Governor to adjust the deadlines mentioned above for individual regulations or the entire state to the earliest feasible date in the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm.

*CARB “Early Action Measures” (June 30, 2007).* On June 21, 2007, CARB approved its early action measures to address climate change, as required by AB 32. The three measures include: (1) a low carbon fuel standard, which will reduce the carbon-intensity in California fuels, thereby reducing total CO<sub>2</sub> emissions; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance through the restriction of “do-it-yourself” automotive

refrigerants; and (3) increased CH<sub>4</sub> (methane) capture from landfills through the required implementation of state-of-the-art capture technologies.

*CARB Mandatory Reporting Regulations (December 2008).* Under AB 32, CARB propounded regulations to govern mandatory greenhouse gas emissions reporting for certain sectors of the economy, most dealing with approximately 94 percent of the industrial and commercial stationary sources of emissions. Regulated entities include electricity generating facilities, electricity retail providers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons of CO<sub>2</sub> from stationary source combustion.

*Senate Bill 97 (2007).* By July 1, 2009, the Governor's Office of Planning and Research (OPR) is directed to prepare, develop, and transmit to the Resources Agency amendments to the CEQA Guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by the California Environmental Quality Act. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010. OPR is required to periodically update these guidelines as CARB implements AB 32. In addition, SB 97 states that the failure to include a discussion of greenhouse gas emissions in any CEQA document for a project funded under the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or projects funded under the Disaster Preparedness and Flood Prevention Bond Act of 2006 shall not be a cause of action under CEQA. This last provision was to be repealed on January 1, 2010.

*Executive Order S-01-07 (2007).* Executive Order S-01-07 calls for a reduction in the carbon intensity of California's transportation fuels by at least 10 percent by 2020. As noted above, the low-carbon fuel standard ("LCFS") was adopted by CARB as one of its three "early action measures" on June 21, 2007.

*Senate Bill 1368 (2006) (Public Utilities Code §§ 8340-41).* SB 1368 required the California Public Utilities Commission ("PUC") to establish a "GHG emission performance standard" by February 1, 2007, for all electricity providers under its jurisdiction, including the state's three largest privately-owned utilities. Pub. Res. Code § 8341(d)(1). These utilities provide approximately 30 percent of the state's electric power. After the PUC acted, the CEC adopted a performance standard "consistent with" the PUC performance standard and applied it to local publicly-owned utilities on May 23, 2007 (over one month ahead of its June 30, 2007 deadline). Cal. Pub. Res. Code § 8341(e)(1). However, the California Office of Administrative Law ("OAL") found four alleged flaws in the CEC's rulemaking. The CEC overcame these alleged flaws and adopted reformulating regulations in August 2007.

*Senate Bill 107 (2006).* Senate Bill 107 ("SB 107") requires investor-owned utilities such as Pacific Gas and Electric, Southern California Edison and San Diego Gas and Electric, to generate 20 percent of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017.

*Senate Bill 375 (September 2008).* In September 2008, SB 375 was signed by Governor Schwarzenegger. SB 375 is a comprehensive global warming bill that helps to achieve the goals of AB32. To help establish these targets, the CARB assigned a Regional Targets Advisory Committee to recommend factors to be considered and methodologies for setting greenhouse gas emission reduction targets. SR 375 also provides incentive – relief from certain CEQA requirements for development projects that are consistent with regional plans that achieve the targets. SB 375 requires CARB to develop, in collaboration with the Metropolitan Planning

Organization (MPO), passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. The MPO is required to include and adopt, in their regional transportation plan, a sustainable community strategy that will meet the region's target provided by CARB.

*Western Regional Climate Action Initiative (Arizona, California, New Mexico, Oregon, Utah, Washington)(2007).* Acknowledging that the western states already experience a hotter, drier climate, the Governors of the foregoing states have committed to three time-sensitive actions: (1) by August 26, 2007, to set a regional goal to reduce emissions from the states collectively, consistent with state-by-state goals; (2) by August 26, 2008, to develop "a design for a regional market-based multi-sector mechanism, such as a load-based cap and trade program, to achieve the regional GHG reduction goal;" and (3) to participate in a multi-state GHG registry "to enable tracking, management, and crediting for entities that reduce GHG emissions, consistent with state GHG reporting mechanisms and requirements."

*Executive Order S-3-05 (June 1, 2005).* Executive Order S-3-05 calls for a reduction in GHG emissions to 2000 levels by 2010; 1990 levels by 2020; and for an 80 percent reduction in GHG emissions below 1990 levels by 2050. It also directs the California Environmental Protection Agency ("CalEPA") to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy.

*California's Renewable Energy Portfolio Standard Program (2005).* In 2002, California established its Renewable Energy Portfolio Standard Program, which originally included a goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. The state's most recent 2005 Energy Action Plan raises the renewable energy goal from 20 percent by 2017, to 33 percent by 2020.

*Title 24, Part 6, California Code of Regulations (2005).* In 2005, California adopted new energy efficiency standards for residential and nonresidential buildings in order to reduce California's energy consumption. This program has been partially responsible for keeping California's per capita energy use approximately flat over the past 30 years.

*Assembly Bill 1493 (2002) (Health and Safety Code § 43018.5).* Assembly Bill 1493 ("AB 1493") required CARB to develop and adopt the nation's first GHG emission standards for automobiles. Not only have litigants challenged their legality in federal court, but also USEPA denied California's request for a Clean Air Act waiver to implement its regulations. As of this writing, California and other states who seek to adopt California's greenhouse gas emissions standards for automobiles are challenging USEPA's denial in federal court.

*Climate Action Registry (2001).* California Senate Bills 1771 and 527 created the structure of the California Climate Action Registry ("Registry"), and former Governor Gray Davis signed the final version of the Registry's enabling legislation into law on October 13, 2001. These bills establish the Registry as a non-profit entity to help companies and organizations establish GHG emissions baselines against which future GHG emission reduction requirements could be applied. Using any year from 1990 forward as a base year, participants can record their annual GHG emissions with the Registry. In return for this voluntary action, the State of California promises to offer its "best efforts" to ensure that participants receive consideration for their early action if they are subject to any future state, federal, or international emissions regulatory scheme.

### **1.5.3 South Coast Air Quality Management District Plans, Policies, Regulations and Laws.**

The South Coast Air Quality Management District (“SCAQMD”) adopted a “Policy on Global Warming and Stratospheric Ozone Depletion” in April 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and,
- Support the adoption of a California GHG emission reduction goal.

The legislative and regulatory activity detailed above is expected to require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.

### **1.5.4 University of California Irvine Plans, Policies, Regulations, and Laws**

The University of California, Irvine adopted its climate action and sustainability plan entitled “Achieving Net Zero: Climate Change & Sustainability” in June 2009. The goals presented in the plan include the university achieving 2000 GHG emissions levels by 2012, 1990 GHG emissions levels by 2020, and 80% below 1990 GHG emissions levels by 2050 with a commitment to achieve climate neutrality as soon as possible. An aggressive portfolio of over 250 energy efficiency projects to reduce greenhouse gas emissions are identified in the plan including lighting retrofits, refrigerator replacements, computer power management software, and monitoring based commissioning projects. In addition, the plan includes an expansion of the campus’ use of more low carbon renewable energy sources in its energy infrastructure. Transportation emissions will be reduced through a variety of means including a new bike sharing program and increased participation in alternative transportation modes. Lastly, emissions reductions will be achieved through educational programs geared towards behavioral change. On the road to climate-neutrality, UCI will use renewable energy certificates and offsets when all possible direct actions have been exhausted. UCI will adjust the climate action plan accordingly as the campus continues to identify new strategies to meet its emissions reduction targets and will adjust its climate action plan accordingly. Goals identified in the plan that are directly applicable to the project include:

- Build all new construction (except laboratory and acute-care facilities) to a minimum standard equivalent to LEED Silver. Laboratories will be built to a minimum standard equivalent to LEED 2.1 certified.
- All new building projects, other than acute care facilities, will outperform the required provisions of the California Energy Code (Title 24) energy-efficiency standards by 20 percent or more.

- New buildings employ materials, systems, and design features that will be long lasting and avoid the expense of major maintenance (defined as greater than one percent of the value) for twenty years.

In July 2003 the University of California adopted a Policy on Sustainable Practices to be implemented system-wide within the University's campuses, including UCI. Since then, the policy has been updated several times, most recently in September 2009. The document contains eight sustainability categories which include policies to address GHG emissions. Policy highlights from each of the eight categories follow:

### **Green Building Design**

- New buildings (other than acute care) shall outperform Title 24 energy efficiency standards by 20% and strive to outperform by 30%.
- New buildings shall achieve LEED-New Construction (NC) "Silver" Rating and strive to achieve LEED-NC "Gold" rating.
- New buildings shall achieve at least two of the available credits in LEED-NC's Water Efficiency Category and cooperate with local water districts to conserve water and meet district water use reduction goals.
- The measures required by the Policy Guidelines will be incorporated into all new building projects, other than acute care facilities, submitted for first formal scope and budget approval as of July 1, 2009.

### **Clean Energy Standards:**

- Implement a system wide portfolio approach to reduce consumption of nonrenewable energy including a combination of energy efficiency projects, the incorporation of local renewable power measures for existing and new facilities, green power purchases from the electrical grid, and other energy measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage.
- Strive to achieve a level of grid-provided electricity purchases from renewable sources that will be similar to the State's Renewable Portfolio Standard, which sets a goal of procuring 20 percent of its electricity needs from renewable sources by 2010.
- Develop a strategic plan for siting renewable power projects in existing and new facilities with a goal of providing up to 10 megawatts of local renewable power by 2014.
- Develop a strategic plan for implementing energy efficiency projects for existing buildings and infrastructure to include operational changes and the integration of best practices with a goal of reducing system-wide growth-adjusted energy consumption by 10% or more by 2014 from the year 2000 base consumption level.
- Pursue marketing of emission credits as a means to bridge the cost-feasibility gap for green power projects

### **Climate Protection Practices:**

- Each campus will pursue individual membership with either the California Climate Action Registry (CCAR) or The Climate Registry (TCR) and form a Climate Change Working Group to monitor progress towards reaching GHG reduction goals and evaluate programs to reach these goals.

- Each campus will complete a greenhouse gas emissions inventory that will be updated at least once every other year.
- Develop an action plan for becoming climate neutral.
- By September 15, 2009 each campus will implement seven of the tangible actions to reduce GHG emissions that are outlined in the ACUPCC.

**Sustainable Transportation Practices:**

- Facilitate sharing of best practices within the university and among other educational institutions
- Develop mechanism for ongoing involvement of students in efforts for achieving sustainable campus transportation.
- Implement pre-tax transit pass program for employees.
- Pursue the expansion of Transportation Demand Management (TDM) programs including carshare, carpools, vanpools, buspools, campus shuttles, transit, bicycle circulation system, pedestrian circulation system, emergency rides home, telecommuting, flexible schedules, and parking management.

**Sustainable Operations:**

- Develop a plan to operate and maintain all scope eligible existing buildings at a LEED for Existing Buildings Operations and Maintenance (LEED-EBOM) “Certified” Rating in a comprehensive campus approach.
- Work closely with the U.S. Green Building Council (USGBC) to address the needs and concerns of campuses in the further development of LEED-EBOM rating system and the USGBC’s “Portfolio Program”

**Recycling and Waste Management:**

- Develop an Integrated Waste Management Plan (IWMP) with the following waste diversion goals: 50% by June 30, 2008, 75% by June 30, 2012, and ultimate goal of zero waste by 2020.
- Incorporate waste reduction and recycling elements in Green Building Design and Sustainable Operations implementation goals and campus operations as they are developed.

**Environmentally Preferable Purchasing Practices:**

- Utilize University purchasing power and academic and research excellence to advance the development of sustainable technologies by pressing markets to continually improve resource productivity.
- For products and services that do not currently offer environmentally preferable alternatives, the University will work with its existing and potential suppliers to develop options.
- Continue to transition all locations toward electronic and paperless processes and utilize web-based catalogs and programs.
- Focus procurement efforts only on products with ENERGYSTAR ratings where available.

- Adopt minimum standard of 30% Post Consumer Waste (PCW) recycled content paper for office supplies and 100% PCW recycled content paper for uncut paper uses including but not limited to janitorial supplies.
- Achieve Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT) for all desktop computers, laptops, and computer monitors purchased by the University. Provide additional consideration for electronics products that have achieved EPEAT Silver or EPEAT Gold registration.
- Recycle all electronic waste in a responsible manner.
- Require take-back program be offered for packaging of electronics products.
- Incorporate the Environmentally Preferable Purchasing Policy into existing strategic sourcing and other training programs. Provide training seminars, supplier fairs, and workshops on purchasing environmentally preferred products and establish educational programs and materials.

### **Campus Foodservice Operations:**

- Achieve goal of procuring 20% sustainable food products by the year 2020 for Campus Foodservice Operations.
- Provide student patrons sustainable food options as well as access to educational materials that will help support their food choices.
- Engage in activities with surrounding community that support common goals regarding sustainability.
- Explore the use of third-party “green business” certifications for sustainable dining operations. If cost effective, each campus will certify one facility by December 2010 through one of the following: (1) City or county’s “green business” program, (2) Green Seal’s Restaurants and Food Services Operations certification program, or (3) the Green Restaurant Association certification program.

## **2.0 Potential Greenhouse Gas Impacts**

### **2.1 Significance Thresholds**

At this time, a widely accepted threshold for determining the significance of GHG emissions has not been established. Both CARB and SCAQMD have been working to establish significance thresholds for GHG impacts and have published draft thresholds for review and comment, but no significance thresholds applicable to general projects have been adopted by these agencies. Section 2.1.1 discusses CARB’s significance threshold development and section 2.1.2 discusses SCAQMD’s significance threshold development. These proposed thresholds will be used as guidance in a qualitative assessment of the project’s GHG impact potential.

#### **2.1.1 California Air Resource Board Significance Thresholds**

The CARB is the lead agency for implementing AB32. In October 2008, CARB published a Proposed Scoping Plan, in coordination with the Climate Action Team (CAT), to establish a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California. The measures in the Scoping plan approved by the Board will be developed over the next two years and be in place by 2020. California is the fifteenth largest emitter of GHGs on the planet, representing about 2 percent of the worldwide emissions. According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from



today's levels to stabilize the amount of CO<sub>2</sub> in the atmosphere and prevent the most severe effects of global climate change. This long-range goal is reflected in California Executive Order S-3-05 that requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050. Reducing GHG emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of CO<sub>2</sub> equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

Significant progress can be made toward the 2020 goal includes existing technologies, and improving the efficiency of energy use. Other solutions involve improving our state's infrastructure, transitioning to cleaner and more secure sources of energy, and adopting 21st century land use planning and development practices. Key elements of California's recommendations for reducing its greenhouse gas emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standard;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long term commitment to AB 32 implementation.
- CARB anticipated 5 million metric tons of CO<sub>2</sub> equivalent (MMT CO<sub>2</sub>EQ) reduction for Regional Transportation-Related Greenhouse Gas Targets.

To meet the 1990 target established by AB 32, CARB recommends a de minimis (minimal importance) emission threshold of 0.1 MMT annual (100,000 MT per year) CO<sub>2</sub>EQ per transportation source category. Source categories whose total aggregated emissions are below this level are not proposed for emission reduction requirements in the Scoping Plan but may contribute toward the target via other means. As each regulation to implement the Scoping Plan is developed, CARB and other agencies will consider more specific de minimis levels below which the regulatory requirements would not apply. These levels will consider the cost to comply, especially for small businesses, and other factors. Until approved thresholds and guidelines are adopted at the local and regional level, the proposed de minimis threshold of 100,000 MT CO<sub>2</sub>EQ per year for transportation sources will be utilized for transportation sources.

In addition to the Proposed Scoping Plan, CARB released the Preliminary Draft Staff Proposal (Staff Proposal) on October 24, 2008 with the objective of developing interim significant thresholds for commercial and residential projects. CARB has proposed a threshold of 7,000 annual MT for industrial operational sources but this threshold has not been adopted. At this time, CARB has not proposed thresholds applicable for residential and commercial sources. Therefore, criteria for determining threshold levels for residential and commercial sources have

yet to be defined. Under CARB's Staff Proposal, recommended approaches for setting interim significant thresholds for GHG under the CEQA are underway. CARB staff proposes to define certain performance standards (e.g., for energy efficiency) by referencing or compiling lists from existing local, state or national standards. For some sub-sources of GHG emissions (e.g., construction, transportation, waste), CARB staff has not identified reference standards.

The Staff Proposal's Potential Performance Standards and Measures were released in December 2008. Inside the Staff Proposal, CARB's Potential Performance Standard and Measures included some construction measures. These guideline measures are:

- Provide alternative transportation mode options or incentives for workers to and from worksite on days that construction requires 200 or more workers; and
- Recycle and/or salvage at least 75% of non-hazardous construction and demolition debris by weight (residential) or by weight in volume (commercial); and
- Use recycled materials for at least 20% of construction materials based on cost for building materials, based on volume for roadway, parking lot, sidewalk and curb material. Recycled materials may include salvaged, reused, and recycled content materials.

CARB's Staff Proposal has identified California Energy Commission's (CEC) Tier II Energy Efficiency goals as an appropriate performance standard for energy use. Under State Law, the CEC is required to establish eligibility criteria, conditions for incentives, and rating standards. Thus, the CEC established energy efficiency standards for homes and commercial structures, and requires new buildings to exceed current building standards by meeting Tier Energy Efficiency goals. Currently, CEC's proposed guidelines for the solar energy incentive program recommend a Tier II goal for residential and commercial projects of a 30% reduction in building combined space heating, cooling, and water heating energy compared to the 2008 Title 24 standards.

Existing green building rating systems like LEED, GreenPoint Rated, the California Green Building Code, and others, contain examples of measures that are likely to result in substantial GHG emission reductions from residential and commercial projects. Performance standards that already exist and have been proven to be effective, at the local, state, national or international level, are preferable. For residential and commercial projects, CARB staff has proposed that the GHG emissions of some projects that meet GHG performance standards might under some circumstances still be considered cumulatively considerable and therefore significant. However, criteria threshold for residential and commercial has yet to be developed.

### **2.1.2 SCAQMD's Significance Thresholds**

In December 5, 2008, the South Coast Air Quality Management District (SCAQMD) adopted GHG significance threshold for Stationary Sources, Rules and Plans where the SCAQMD is lead agency. The threshold utilizes a tiered approach, with a screening significance threshold of 10,000 MT CO<sub>2</sub>EQ for industrial projects. The SCAQMD has also developed draft thresholds for commercial and residential projects, where it is not the lead. The draft recommends a 3,000 MT CO<sub>2</sub>EQ/yr screening threshold. The methodology recommends that total construction emissions be amortized over a 30 year period or the project's expected lifetime if it is less than 30 years. The SCAQMD's working group has not set a date for finalizing the recommendations.

## 2.2 Project Emissions Calculation Methodology

GHG emissions during construction and operation of the project were estimated using the methodologies presented below. Section 2.2.1 presents the methodologies used to estimate construction related GHG emissions and Section 2.2.2 presents the methodologies used to estimate operational GHG emissions.

### 2.2.1 Construction Emissions

The URBEMIS2007 program (version 9.4.2) was used to calculate the emissions from the associated with construction of the project. URBEMIS2007 is a computer model developed by a group of California air districts that uses emission factors from CARB's EMFAC2007 model for on-road vehicle emission estimates and emission factors from CARB's OFFROAD model for off-road vehicle and equipment emission estimates. The sources of GHG emissions during construction include off-road construction vehicles and equipment, on-road haul trucks, and employee vehicles. The URBEMISv9.2.4 model only calculates CO<sub>2</sub> emissions and does not include other GHG emissions generated by construction activities (such as CH<sub>4</sub>, N<sub>2</sub>O, and Fluorinated Gases), CO<sub>2</sub> emissions comprise approximately 99.6 percent of emissions from burning diesel fuel. Consequently, non-CO<sub>2</sub> GHG emissions represent a very small percentage (approximately 0.4 percent) of the total construction equipment GHG emissions and would not represent a significant source of GHG emissions generated by the proposed project during construction, even when combined with CO<sub>2</sub> emissions. Therefore, non-CO<sub>2</sub> construction GHG emissions have not been quantified in this analysis.

A description of the general construction activities and the equipment expected to be utilized for these activities was provided by the project applicant and are described in detail in the following section.

#### 2.2.1.1 Construction Activities

Construction of the project will occur over two phases. During the first phase approximately half of the existing buildings will be demolished and the replacement buildings will be constructed. During the second phase of construction the remaining buildings in the project area will be demolished. Table 3 presents the estimated construction schedule used to calculate pollutant emissions. Delays in the start for each phase of construction would not significantly affect emission estimates. In fact, the URBEMIS program includes a reduction in on-road and off-road vehicle exhaust emissions each year to account for new construction equipment and on-road vehicles manufactured under stricter emission standards becoming a larger part of the construction fleet (a fleet average emission factor is used to estimate emissions). So for emissions modeling purposes, a delay moving the activity into the following year would actually result in a slight reduction in the exhaust emissions estimates. Lengthening the duration of each activity would result in the same or lower daily emissions as daily activity levels for emission sources would either not change or decrease as the work is spread out over a longer period of time. A shortening of any of the construction activities assumed could result in higher emissions and would require a re-analysis of the emission impacts.

Half of the existing residential buildings will be demolished prior to the construction of the new buildings and the second half of the existing residential buildings will be demolished after the replacement buildings have been constructed. At this time it is not known if the non-residential structures in the project area will be demolished during the first or second phase. The emissions calculations include the demolition of all of the non-residential buildings during both demolition

phases. Actual demolition emissions will be slightly less if the buildings are not all demolished in only one of the two phases.

**Table 3**  
**Estimated Construction Schedule**

Phase Activity	Start	Duration (Weeks)	End
<b>Phase 1</b>			
Building Demolition	September 2010	8	October 2010
Hardscape Demolition	October 2010	2	November 2010
Grading	November 2010	2	November 2010
Paving	November 2010	2	December 2010
Building Construction	November 2010	94	September 2012
Arch Coating	July 2012	8	September 2012
<b>Phase 1 Duration</b>		<b>106 (24 Months)</b>	
<b>Phase 2</b>			
Building Demolition	September 2014	8	October 2014
Hardscape Demolition	October 2014	2	November 2014
Grading	November 2014	2	November 2014
<b>Phase 2 Duration</b>		<b>12 (3 Months)</b>	

*Phase 1 Building Demolition* is the demolition of approximately half of the existing residential buildings and all of the non-residential buildings. This work is estimated to occur over an eight-week period. The total volume of buildings to be demolished during this phase is estimated to be 1,440,875 cubic feet. URBEMIS assumes that the amount of debris hauled from the site equals 25% of the building volume. This results in the demolition requiring 33 daily haul trucks to remove the debris. It was assumed that the haul trucks would have a 30 mile trip length. Equipment assumed to be utilized during demolition includes (1) concrete/industrial saw, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Hardscape Demolition* is the removal of the existing parking lots, hardscape and bike trail to prepare the site for the grading and construction of the replacement buildings. The project site includes approximately 318,518 square feet of parking lot and other hardscape. Approximately half of this will be removed during Phase 1. Equipment assumed to be utilized during demolition includes (2) concrete/industrial saws, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The emissions calculation includes 22.1 daily haul truck trips with a round trip distance of 30 miles. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Grading* is the grading of project site in preparation of building construction. This work is estimated to take two weeks. There will be no import or export of materials required. Equipment assumed to be used during grading includes (1) grader, (1) rubber tired dozer, (1)

tractor/loader/backhoe and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 1 Paving* is the paving of the parking lot with asphalt. An estimated 4 acres of the site will be paved with asphalt. This work is expected to occur over a two-week period. The URBEMIS2007 default assumptions for worker and vendor vehicle trips were used. Equipment assumed to be used during grading includes (1) paver, (1) paver equipment, (1) roller, and (1) tractor/loader/backhoe.

*Phase 1 Construction* is the construction of the replacement buildings. Building construction emissions were calculated for the portion of construction with the greatest amount of activity that will result in the highest emissions. Equipment assumed to be used during construction includes (3) welders, (2) forklifts, (1) crane, (1) tractor/loader/backhoe, and (2) aerial lifts. The URBEMIS2007 default assumptions were used to estimate emissions from material deliveries and worker trips.

*Phase 1 Architectural Coating* is the painting of the new buildings. The URBEMIS 2007 default assumptions for worker and material vehicle trips were used.

*Phase 2 Building Demolition* is the demolition of the remaining existing residential buildings and all of the non-residential buildings. This work is estimated to occur over an eight-week period. The total volume of buildings to be demolished during this phase is estimated to be 1,440,875 cubic feet. URBEMIS assumes that the amount of debris hauled from the site equals 25% of the building volume. This results in the demolition requiring 33 daily haul trucks to remove the debris. It was assumed that the haul trucks would have a 30 mile trip length. Equipment assumed to be utilized during demolition includes (1) concrete/industrial saw, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 2 Hardscape Demolition* is the removal of the remaining parking lots, hardscape and bike trail. The project site includes approximately 318,518 square feet of parking lot and other hardscape. Approximately half of this will be removed during Phase 1 and the remaining hardscape will be removed in Phase 2. This work is estimated to take two weeks. Equipment assumed to be utilized during demolition includes (2) concrete/industrial saws, (1) rubber tired dozer, (1) tractors/loaders/backhoes and (1) water truck. The emissions calculation includes 22.1 daily haul truck trips with a round trip distance of 30 miles. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

*Phase 2 Grading* is the grading of Phase 2 of the project site which will be landscaped when completed. This work is estimated to take two weeks. There will be no import or export of materials required. Equipment assumed to be used during grading includes (1) grader, (1) rubber tired dozer, (1) tractor/loader/backhoe and (1) water truck. The URBEMIS2007 default assumptions were used to estimate emissions from worker trips.

### 2.2.2 Operational Emissions

The primary source of GHG emissions generated by the proposed project will be from motor vehicles. Other emissions from the project will be generated from the combustion of natural gas for space and water heating, as well as off-site GHG emissions from the generation of electricity consumed by the project.

GHG emissions associated with the project were calculated by using URBEMIS2007 (version 9.2.4). URBEMIS2007 is a computer model developed by a group of California air districts that uses emission factors from CARB's EMFAC2007 model for on-road vehicle emission estimates. Emissions from landscaping and maintenance were calculated using URBEMIS default assumptions. The trip generation rate used for the analysis was provided by the traffic engineer for the project (Austin-Foust Associates) of 2.125 trips per bed. The URBEMIS model does not include modeling for beds so the Low Rise Apartments land use was used for no project conditions and Midrise Apartments land use was used for to calculate the with project conditions. These uses assume an average of two bedrooms per unit and a trip generation rate of 4.25 trips per unit was used for the modeling.

The most notable greenhouse gases (GHG) are nitrous oxide ( $N_2O$ ), methane ( $CH_4$ ) and carbon dioxide.  $CO_2$ . The URBEMIS model only calculates  $CO_2$  emissions. For most sources emission rates  $N_2O$  are not available and they appear to be minuscule accounting for only 0.1% or less of the  $CO_2EQ$  greenhouse gas emissions for this type of project. As a result,  $N_2O$  emissions are not included in this analysis.  $CH_4$  emissions are also a minor portion of the total  $CO_2EQ$  emissions. For passenger vehicles  $CH_4$  represents less than 0.2% of the total  $CO_2EQ$  emissions. For diesel trucks  $CH_4$  emissions represent less than 0.8% of the total  $CO_2EQ$  emissions. Only  $CO_2$  emissions have been quantified in this analysis.

## 3.0 Estimate of Project Greenhouse Gas Emissions

Using the methodologies discussed in Section 2.2, greenhouse gas emissions associated with the project were calculated and are presented below. Emissions associated with construction activities are presented in Section 3.1. Operational emissions are presented in Section 3.2.

### 3.1 Construction Emissions

Using the methodologies described in Section 2.2.1,  $CO_2$  emissions during construction of the project were calculated and are presented in Table 4. For each construction activity the daily  $CO_2$  emissions are presented along with the number of days of activity and the total  $CO_2$  emissions from each activity. The total emissions are presented. This shows that the total  $CO_2$  emissions due to construction are less than the 3,000 metric tons per year significance threshold suggested by SCAQMD. The annual emissions from construction will be slightly less than half of the total emissions as construction is projected to occur over a 2.25 year period

**Table 4**  
**Total Construction CO<sub>2</sub> Emissions**

Activity	Daily CO <sub>2</sub> Emissions (lbs/day)	Days of Activity	Total CO <sub>2</sub> Emissions (Metric Tons)
<b>Phase 1</b>			
Demolition	5,317	40	96.5
Hardscape Demolition	3,898	10	17.7
Grading	3,445	10	15.6
Paving	1,838	10	8.3
Construction 2010	7,072	30	96.2
Construction 2011	7,071	260	833.9
Construction 2012	7,070	180	577.3
Painting	357	40	6.5
<b>Phase 2</b>			
Demolition	5,317	40	96.5
Hardscape Demolition	3,898	10	17.7
Grading	3,445	10	15.6
<b>Total Construction CO<sub>2</sub> Emissions</b>			<b>1,781.7</b>
<b>Project Life Average Annual Emissions*</b>			<b>59.4</b>

\* Based on 30 Year Project Life Per SCAQMD Significance Thresholds

Table 4 also shows the project lifetime average annual construction emissions. The SCAQMD GHG guidance recommends that construction emissions be amortized over a 30-year project lifetime and added to the operational emissions to determine significance. This is done in the next section

### 3.2 Operational Emissions

The impact of the proposed project is measured against the net increase in emissions that will result from the implementation of the project. Using the methodologies described in Section 2.2 the greenhouse GHG emissions associated with the project under no project conditions (i.e., with current development remaining) and with the proposed project were calculated for two time periods. The first period is between September 2012 and September 2014, the conclusion of Phase 1 construction and the commencement of Phase 2 construction. During this period the project site will still retain half of the existing beds (200) and all of the replacement beds (400) will have been constructed. The results of this analysis are presented in Table 5. The second period is representative of conditions in 2014, after project buildout, when all of the existing uses have removed. The results of this analysis are presented in Table 6.

Table 5 presents the total project CO<sub>2</sub> emissions during the period between September 2012 and September 2014. The total emissions for with project conditions and no project conditions along with the increase due to the project are presented. The annualized construction emissions are added to the operational increase to give the net increase in emissions due to the project. The table shows that during this period the project is projected to increase CO<sub>2</sub> emissions by 883.9

metric tons per year. This is less than the SCAQMD suggested significance factor of 3,000 metric tons per year.

**Table 5**  
**Annual Project CO<sub>2</sub> Emissions During Interim Project 2012-2014**

Activity	Annual CO <sub>2</sub> Emissions (Metric Tons)		
	With Project	No Project	Increase
Vehicular Emissions	1,851.8	1,234.6	617.3
Natural Gas Combustion	621.6	414.4	207.2
Landscaping	0.5	0.5	0.0
<b>Total Emissions</b>	<b>2,473.9</b>	<b>1,649.4</b>	<b>824.5</b>
	<b>Annualized Construction Emissions</b>		<b>59.4</b>
	<b>Net Increase in Emissions Due to Project</b>		<b>883.9</b>

Table 6 presents the total project emissions in 2014 after commencement of Phase 2 construction and the removal of the remaining existing buildings on the project site. The table shows no difference in operational emissions with and without the project. The total emissions for with project conditions and no project conditions along with the increase due to the project are presented. The annualized construction emissions are added to the operational increase to give the net increase in emissions due to the project. The table shows that at buildout, the project is projected to increase CO<sub>2</sub> emissions by 59.4 metric tons per year. This is less than the SCAQMD suggested significance factor of 3,000 metric tons per year.

**Table 6**  
**Annual Project CO<sub>2</sub> Emissions at Buildout**

Activity	Annual CO <sub>2</sub> Emissions (Metric Tons)		
	With Project	No Project	Increase
Vehicular Emissions	1,235.2	1,235.2	0.0
Natural Gas Combustion	414.4	414.4	0.0
Landscaping	0.5	0.5	0.0
<b>Total Emissions</b>	<b>1,650.1</b>	<b>1,650.1</b>	<b>0.0</b>
	<b>Annualized Construction Emissions</b>		<b>59.4</b>
	<b>Net Increase in Emissions Due to Project</b>		<b>59.4</b>

### 3.3 Impacts From Project

The analysis presented above shows that the net increase in GHG emissions due to the project are well below the SCAQMD suggested significance threshold of 3,000 metric tons per year. In fact, the total project emissions are less than this threshold. Thus, no project specific mitigation measures are required to construct the project. Additionally, as discussed in Section 1.5.4, UCI is implementing a climate action plan which is compliant with AB32 described in Section 1.5.2 and policies contained in the University of California Policy on Sustainable Practices to further reduce GHG emissions on the campus. The proposed project would also incorporate project relevant specific policies contained in these plans. Therefore, the project will not considerably



contribute to a significant cumulative impact associated with climate change due to GHG emissions or interfere with California's ability to achieve its GHG reduction goals.

## 4.0 Recommended Reduction Strategies

As Stated above, the analysis contained herein indicates that no mitigation measures are required to construct the project. However, as GHG emissions are a significant global, national state and local factor contributing to climate change, the University of California, Irvine should consider additional actions to reduce GHG emissions for all projects. Potential GHG emissions strategies suggested by CARB in their Potential Performance Standards and Measures and from the Attorney General's Office comment letter on the Coyote Valley Specific Plan DEIR were reviewed for applicability to the proposed project. Many of the measures, which the project would either meet or exceed, are already part of the University's Climate Action Plan and Sustainability Policies. The applicable measures include, but are not limited to the list of potential measures and programs provided below.

### 4.1 CARB's Staff Proposal

#### Construction

- Recycle and/or salvage at least 75% of non-hazardous construction and demolition debris by weight (residential) or by weight in volume (commercial).
- Use recycled materials for at least 20% of construction materials based on cost for building materials, based on volume for roadway, parking lot, sidewalk and curb material. Recycled materials may include salvaged, reused, and recycled content materials.
- Provide alternative transportation mode options or incentives for workers to and from worksite

#### Energy

- Meet CEC's voluntary Tier II Energy Efficiency standards in effect at time building construction begins (Currently 30% reduction in combined space heating, cooling and water heating energy compared to 2008 Title 24 Standards) *Note that the University has committed to energy efficiency 20% better than Title 24 standards with a goal for a reduction of 30%*

#### Water

- Reduce indoor potable water use by at least 20%.
- Reduce outdoor potable water use for landscape irrigation by at least 50%.

#### Waste

- Where local recycling and/or composting programs exist design facilities and structures to encourage participation in program, and install adequate, accessible recycling and composting receptacles in common or public areas, and Provide easy access to central recycling and composting receptacles or collections areas

#### Residential Transportation

- Demonstrate that average vehicle miles traveled per household per year (VMT/hh-yr) is projected not to exceed 14,000 VMT/hh-yr. *Note that based on the URBEMIS*

*modeling vehicle miles traveled per year per resident (VMT/yr-res) is less than 7,000 VMT/yr-res.*

- Represents carbon-efficient, compact development with close proximity to transit and variety of services.

## 4.2 Attorney General's List

*The applicability of the listed measures to the proposed project is provided in italicized text.*

### Transportation

- Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights. *The project does not affect any intersections and therefore this is not applicable to the project.*
- Set specific limits on idling time for commercial vehicles, including delivery and construction vehicles. *CARB regulations limit idling of diesel vehicles to 5 minutes. Air quality mitigation measure AIR-2B from the LDRP EIR applies to this project and requires construction equipment to be shut down if idling is anticipated to last for more than 5 minutes.*
- Require construction vehicles to use retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by the California Air Resources Board (CARB). *These measures do not reduce the amount of GHG emission from the equipment but do reduce criteria air pollutant emissions. Further, CARB has developed regulations to require construction contractors to meet fleet average emissions targets using these devices and/or new equipment.*
- Promote ride sharing programs *e.g.*, by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas. *This is done by the University.*
- Create car-sharing programs. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation. *This is done by the University as a part of its CAP*
- Require clean alternative fuels and electric vehicles. *The university has converted its shuttle bus fleet to use 100% biodiesel and retrofitted catalytic converters to more than reduce NO<sub>x</sub> emission increase associated with biodiesel. The University has committed to retrofit other fleet vehicles where feasible and phase out vehicles where retrofit is not feasible for low-carbon alternatives.*
- Develop the necessary infrastructure to encourage the use of alternative fuel vehicles (*e.g.*, electric vehicle charging facilities and conveniently located alternative fueling stations). *This is done by the University.*
- Increase the cost of driving and parking private vehicles by imposing tolls, parking fees, and residential parking permit limits. *The University's CAP includes measures to reduce "commuter students" and minimize commuting. Note that in some circumstances these measures can result in more travel due to users being dropped off and picked up at their destination (4 one-way trips) rather than parking at their destination (2 one-way trips).*

- Develop transportation policies that give funding preference to public transit. *This is done by the University.*
- Design a regional transportation center where public transportation of various modes intersects. *This is not applicable to the proposed project.*
- Encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations. *This is done by the University.*
- Assess transportation impact fees on new development in order to facilitate and increase public transit service. *This is not applicable to the proposed project.*
- Provide shuttle service to public transit. *This is done by the University.*
- Offer public transit incentives. *This is done by the University as a part of its Sustainability Policy.*
- Incorporate bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments. *This is done by the University.*
- Create bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking *This is done by the University.*
- Require commercial projects to include facilities on-site to encourage employees to bicycle or walk to work. *This is not applicable to the proposed project.*
- Provide public education and publicity about public transportation services. *This is done by the University as a part of its CAP.*

### **Energy Efficiency and Renewable Energy**

- Require energy efficient design for buildings. This may include strengthening local building codes for new construction and renovation to require a higher level of energy efficiency. *This is done by the University as a part of its CAP.*
- Adopt a “Green Building Program” to promote green building standards. *This is done by the University as a part of its CAP.*
- Fund and schedule energy efficiency “tune-ups” of existing buildings by checking, repairing, and readjusting heating, ventilation, air conditioning, lighting, hot water equipment, insulation and weatherization. (Facilitating or funding the improvement of energy efficiency in existing buildings could offset in part the global warming impacts of new development.) *This is done by the University as a part of its CAP.*
- Provide individualized energy management services for large energy users. *This is done by the University as a part of its CAP.*
- Require the use of energy efficient appliances and office equipment. *This is done by the University as a part of its Sustainability Policy.*
- Fund incentives and technical assistance for lighting efficiency. *This is done by the University as a part of its Sustainability Policy.*
- Require that projects use efficient lighting. (Fluorescent lighting uses approximately 75% less energy than incandescent lighting to deliver the same amount of light.) *This is done by the University as a part of its CAP.*

- Require measures that reduce the amount of water sent to the sewer system. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.) *This is done by the University as a part of its Sustainability Policy.*
- Incorporate on-site renewable energy production (through, *e.g.*, participation in the California Energy Commission’s New Solar Homes Partnership). Require project proponents to install solar panels, water reuse systems, and/or other systems to capture energy sources that would otherwise be wasted. *This is done by the University as a part of its Sustainability Policy.*
- Streamline permitting and provide public information to facilitate accelerated construction of solar and wind power. *As a part of its CAP the University has committed to implementing renewable energy sources*
- Fund incentives to encourage the use of energy efficient equipment and vehicles. *This is done by the University as a part of its Sustainability Policy.*
- Provide public education and publicity about energy efficiency programs and incentives. *This is done by the University as a part of its CAP.*

### Land Use Measures

- Encourage mixed-use and high-density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods. (A city or county could promote “smart” development by reducing developer fees or granting property tax credits for qualifying projects.) *This is not applicable to the proposed project.*
- Discourage “leapfrog” development. Enact ordinances and programs to limit sprawl. *This is not applicable to the proposed project.*
- Incorporate public transit into project design. *This is done by the University as a part of its CAP.*
- Require measures that take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use. *This would be implemented within the project as feasible*
- Preserve and create open space and parks. Preserve existing trees and require the planting of replacement trees for those removed in construction. *This is done by the University as a part of its CAP.*
- Impose measures to address the “urban heat island” effect by, *e.g.*, requiring lightcolored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots; and shade trees on the south and west sides of new or renovated buildings. *This would be implemented within the project as feasible*
- Facilitate “brownfield” development. (Brownfields are more likely to be located near existing public transportation and jobs.) *This is not applicable to the proposed project.*
- Require pedestrian-only streets and plazas within developments, and destinations that may be reached conveniently by public transportation, walking, or bicycling. *This is done by the University.*

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**Solid Waste Measures**

- Require projects to reuse and recycle construction and demolition waste. *This is done by the University.*
- Implement or expand city or county-wide recycling and composting programs for residents and businesses. *The University has implemented waste management programs as part of its CAP.*
- Increase areas served by recycling programs. *This is not applicable to the proposed project.*
- Extend the types of recycling services offered (e.g., to include food and green waste recycling). *The University has implemented waste management programs as part of its CAP.*
- Establish methane recovery in local landfills and wastewater treatment plants to generate electricity. *This is not applicable to the proposed project.*
- Provide public education and publicity about recycling services. *This is done by the University as a part of its CAP.*

## 5.0 References

California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, December 2006.

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Michael Hendrix et. al., *Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, Association of Environmental Professionals, Revised Draft April 27, 2007.

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U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005*, April 15, 2007.

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SCAQMD, *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*, December 5, 2008

State of California Department of Water Resources (DWR), *Climate Change Adaptation Strategies for California's Water*, October 2008

# Appendix

## URBEMIS Output Files









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**3/2/2010 11:48:16 AM**

Phase Assumptions

Phase: Demolition 8/30/2010 - 10/22/2010 - Demolition

Building Volume Total (cubic feet): 1424672

Building Volume Daily (cubic feet): 71318

On Road Truck Travel (VMT): 990.53

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 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 8 hours per day

Phase: Fine Grading 11/8/2010 - 11/19/2010 - Grading

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 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 10/25/2010 - 11/5/2010 - Hardscape Demolition

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 442.4

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**3/2/2010 11:48:16 AM**

Off-Road Equipment:

- 2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 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: Paving 11/22/2010 - 12/3/2010 - Paving

Acres to be Paved: 4

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 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 11/22/2010 - 9/7/2012 - Building

Off-Road Equipment:

- 2 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day
- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 7/16/2012 - 9/7/2012 - Painting

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250





**3/2/2010 11:48:16 AM**

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/8/2010 - 11/19/2010 - Grading

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 10/25/2010 - 11/5/2010 - Hardscape Demolition

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Phase 2 Construction.urb924

Project Name: Verano Place Phase 2 Construcion

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014 TOTALS (tons/year unmitigated)	0.08	0.76	0.35	0.00	0.85	0.03	0.88	0.18	0.03	0.21	143.06
2014 TOTALS (tons/year mitigated)	0.08	0.76	0.35	0.00	0.70	0.03	0.73	0.15	0.03	0.17	143.06
Percent Reduction	0.00	0.00	0.00	0.00	17.89	0.00	17.27	17.90	0.00	15.45	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2014	0.08	0.76	0.35	0.00	0.85	0.03	0.88	0.18	0.03	0.21	143.06
Demolition 09/01/2014-10/24/2014	0.05	0.52	0.23	0.00	0.60	0.02	0.62	0.13	0.02	0.14	106.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.30	0.00	0.30	0.06	0.00	0.06	0.00
Demo Off Road Diesel	0.02	0.15	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	19.89
Demo On Road Diesel	0.03	0.37	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	83.97
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Mass Grading 10/27/2014-11/07/2014	0.01	0.12	0.06	0.00	0.10	0.00	0.11	0.02	0.00	0.03	19.49
Mass Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.34
Mass Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.38
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
Fine Grading 11/10/2014-11/21/2014	0.02	0.12	0.06	0.00	0.15	0.01	0.16	0.03	0.00	0.04	17.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.02	0.12	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.60
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

Phase Assumptions

Phase: Demolition 9/1/2014 - 10/24/2014 - Demolition

Building Volume Total (cubic feet): 1424672

Building Volume Daily (cubic feet): 71318

On Road Truck Travel (VMT): 990.53

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

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1 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 8 hours per day

Phase: Fine Grading 11/10/2014 - 11/21/2014 - Grading

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 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 10/27/2014 - 11/7/2014 - Hardscape Demolition

Total Acres Disturbed: 8.5

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 442.4

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 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

Construction Mitigated Detail Report:

3/2/2010 12:33:40 PM

## CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014	0.08	0.76	0.35	0.00	0.70	0.03	0.73	0.15	0.03	0.17	143.06
Demolition 09/01/2014- 10/24/2014	0.05	0.52	0.23	0.00	0.60	0.02	0.62	0.13	0.02	0.14	106.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.30	0.00	0.30	0.06	0.00	0.06	0.00
Demo Off Road Diesel	0.02	0.15	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	19.89
Demo On Road Diesel	0.03	0.37	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	83.97
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Mass Grading 10/27/2014- 11/07/2014	0.01	0.12	0.06	0.00	0.04	0.00	0.04	0.01	0.00	0.01	19.49
Mass Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00
Mass Grading Off Road Diesel	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.34
Mass Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.38
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
Fine Grading 11/10/2014- 11/21/2014	0.02	0.12	0.06	0.00	0.06	0.01	0.06	0.01	0.00	0.02	17.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.02	0.12	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.60
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 11/10/2014 - 11/21/2014 - Grading

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

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PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 10/27/2014 - 11/7/2014 - Hardscape Demolition

For Soil Stabilizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Verano Exist 2012.urb924

Project Name: Verano Place Existing Year 2012

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.98	0.36	0.43	0.00	0.00	0.00	457.34

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.15	1.25	11.82	0.01	2.37	0.46	1,360.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	3.13	1.61	12.25	0.01	2.37	0.46	1,818.20

1/25/2010 1:32:25 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.03	0.36	0.15	0.00	0.00	0.00	456.83
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	1.87						
Architectural Coatings	0.06						
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.98</b>	<b>0.36</b>	<b>0.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>457.34</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments low rise	1.15	1.25	11.82	0.01	2.37	0.46	1,360.86
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.15</b>	<b>1.25</b>	<b>11.82</b>	<b>0.01</b>	<b>2.37</b>	<b>0.46</b>	<b>1,360.86</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 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	17.40	4.25	dwelling units	200.00	850.00	7,518.25
					850.00	7,518.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)



Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Exist\Verano Exist 2012.urb924

Project Name: Verano Place Existing Year 2014

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.98	0.36	0.43	0.00	0.00	0.00	457.34

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.01	1.06	10.22	0.01	2.37	0.46	1,361.59

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.99	1.42	10.65	0.01	2.37	0.46	1,818.93

3/3/2010 5:10:38 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.03	0.36	0.15	0.00	0.00	0.00	456.83
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	1.87						
Architectural Coatings	0.06						
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.98</b>	<b>0.36</b>	<b>0.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>457.34</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments low rise	1.01	1.06	10.22	0.01	2.37	0.46	1,361.59
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.01</b>	<b>1.06</b>	<b>10.22</b>	<b>0.01</b>	<b>2.37</b>	<b>0.46</b>	<b>1,361.59</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2014 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	17.40	4.25	dwelling units	200.00	850.00	7,518.25
					850.00	7,518.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.9	0.4	99.4	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.1	0.0	100.0	0.0
Med Truck 5751-8500 lbs	10.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	82.4	17.6
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	51.7	48.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Project\Project Operational 2012.urb924

Project Name: Verano Place Project Operational Year 2012

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.96	0.54	0.51	0.00	0.00	0.00	685.75

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.73	1.88	17.74	0.02	3.55	0.69	2,041.29

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.69	2.42	18.25	0.02	3.55	0.69	2,727.04

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.54	0.23	0.00	0.00	0.00	685.24
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	2.81						
Architectural Coatings	0.09						
<b>TOTALS (tons/year, unmitigated)</b>	<b>2.96</b>	<b>0.54</b>	<b>0.51</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>685.75</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments mid rise	1.73	1.88	17.74	0.02	3.55	0.69	2,041.29
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.73</b>	<b>1.88</b>	<b>17.74</b>	<b>0.02</b>	<b>3.55</b>	<b>0.69</b>	<b>2,041.29</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 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 mid rise	17.40	4.25	dwelling units	300.00	1,275.00	11,277.38
					1,275.00	11,277.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)



3/4/2010 10:22:55 AM

Urbemis 2007 Version 9.2.4

## Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MBJ\Application Data\Urbemis\Version9a\Projects\Verano Place\Project\Project Operational 2014.urb924

Project Name: Verano Place With Project Year 2014

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

## Summary Report:

## AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.98	0.36	0.43	0.00	0.00	0.00	457.34

## OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.01	1.06	10.22	0.01	2.37	0.46	1,361.59

## SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.99	1.42	10.65	0.01	2.37	0.46	1,818.93

3/4/2010 10:22:57 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.03	0.36	0.15	0.00	0.00	0.00	456.83
Hearth							
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	1.87						
Architectural Coatings	0.06						
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.98</b>	<b>0.36</b>	<b>0.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>457.34</b>

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments mid rise	1.01	1.06	10.22	0.01	2.37	0.46	1,361.59
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.01</b>	<b>1.06</b>	<b>10.22</b>	<b>0.01</b>	<b>2.37</b>	<b>0.46</b>	<b>1,361.59</b>

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2014 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 mid rise	17.40	4.25	dwelling units	200.00	850.00	7,518.25
					850.00	7,518.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.9	0.4	99.4	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.1	0.0	100.0	0.0
Med Truck 5751-8500 lbs	10.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	82.4	17.6
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	51.7	48.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)

**APPENDIX C**  
**TRAFFIC IMPACT ANALYSIS**



**MEMORANDUM**

TO: Alex Marks, UCI Campus and Environmental Planning

FROM: Krys Saldivar, Austin-Foust Associates, Inc. *KS*

DATE: January 22, 2010

SUBJECT: **UC IRVINE VERANO PLACE TRAFFIC EVALUATION**

Dear Mr. Marks:

Austin-Foust Associates, Inc. (AFA) has carried out a traffic evaluation for the redevelopment of existing campus housing on the main campus of the University of California, Irvine (“proposed project”) in the on-campus housing neighborhood referred to as Verano Place. The existing number of beds on the project site is approximately 400 beds in 21 two-story buildings. With the proposed project, approximately 200 of these beds will be demolished to make way for construction of new apartments with around 400 beds for an approximate total of 600 beds. Within two years after the completion of the construction of the 400 beds, the existing housing of approximately 200 beds not demolished will eventually be torn down. The purpose of this memorandum is to discuss the traffic implications of the additional 200 beds over the current number of beds of 400.

The attached table summarizes the trip generation for the number of beds that currently exist in the project site and the worst-case interim conditions with the demolition of approximately 200 existing beds and the addition of approximately 400 beds. Since currently there is housing for 400 beds on the project site and the worst-case interim conditions provides 600 beds, traffic from the additional 200 beds are essentially new trips that need to be analyzed. The table shows that the trips from the additional 200 beds represent increases of 425 daily trips, 23 AM peak hour trips, and 33 PM peak hour trips.

In review of the project description and estimated trip generation, we feel that that there is not a substantial amount of trips to warrant a full project traffic analysis. The trip increases are negligible especially in the AM and PM peak hours as far as traffic conditions are concerned. Therefore it can be concluded that the proposed worst-case interim conditions with 600 beds in Verano Place are not expected to have any adverse traffic impacts in the area.

347030memo.doc

Table 1

## PROPOSED PROJECT LAND USE AND TRIP GENERATION SUMMARY

Land Use	Amount /Unit	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
<b>Trip Rates</b>								
Married/Graduate Housing	Beds	.011	.109	.119	.094	.071	.165	2.125
<b>Existing Conditions</b>								
Married/Graduate Housing	400 Beds	4	44	48	38	28	66	850
<b>Existing* Plus Proposed Project (Interim Worst-Case Conditions**)</b>								
Married/Graduate Housing	600 Beds	7	65	71	56	43	99	1,275
<b>Difference***</b>	<b>200 Beds</b>	3	21	23	18	15	33	425

Abbreviations: ADT – average daily trips

\* Existing residential units with 200 beds are demolished at the onset of construction of the permanent 400-bed proposed residential units.

\*\* These conditions are referred to as interim worst-case conditions because the pre-existing 200 beds will eventually be demolished within 2 years and the number of beds will revert back to 400.

\*\*\* The difference in trips shown here are the actual “new trips” for the 200 additional beds not previously assumed for the project site (i.e., the 200 beds were not included in previous analyses).

Note: Project parking is provided for the residents on surface parking lots but do not generate trips. However, the uses that the parking serves do. The trips for the project are distributed where parking is provided.





## **APPENDIX D**

### **PUBLIC REVIEW/RESPONSE TO COMMENTS**

**Response to Comments on Draft Initial Study  
UCI Verano Place Unit Four Redevelopment Project**

**Public Review**

The Draft Initial Study/Mitigated Negative Declaration (IS/MND), together with a Notice of Completion (NOC) and Notice of Intent to Adopt a Mitigated Negative Declaration (NOI) were circulated for a public review and comment period, from March 22, 2010 through April 20, 2010. Copies of the document were sent to the State Clearinghouse, county and local government agencies, UCI faculty and staff, other members of the campus community, and additional interested groups and persons. A copy of the distribution list is provided in this section, along with copies of the notices mentioned above. Public notice of the availability of the Draft IS/MND for review and comment was published in the Orange County Register on March 22, 2010 (copy included in this section).

**Comments and Responses**

Written comments were submitted by the public agencies identified below. These letters, followed by responses to comments in each, are presented on the pages following the Draft IS/MND distribution list.

<b>Commenting Agency</b>	<b>Correspondence Dated</b>	<b>Received at UCI</b>
City of Irvine	April 9, 2010	April 13, 2010
State of California, Department of Toxic Substances Control	April 14, 2010	April 15, 2010
State of California, Department of Transportation, District 12	April 20, 2010	April 23, 2010
State of California, Governor's Office of Planning and Research	April 23, 2010	May 3, 2010



Campus & Environmental Planning

750 University Tower  
Irvine, CA 92697-2325  
(949) 824-6316  
(949) 824-1213 Fax

March 17, 2010

State of California  
Office of Planning and Research  
1400 Tenth Street, Room 222  
PO Box 3044  
Sacramento, CA 95812- 3044

### NOTICE OF COMPLETION – MITIGATED NEGATIVE DECLARATION

Project Title: UCI VERANO PLACE APARTMENTS UNIT FOUR REDEVELOPMENT PROJECT  
Project Location: University of California, Irvine  
Lead Agency: University of California  
County: Orange

In accordance with State CEQA guidelines and University of California procedures for implementation of CEQA, an Initial Study for the above named project was prepared. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration is appropriate for this project. Transmitted herewith are 15 copies of the proposed Mitigated Negative Declaration/Initial Study, dated March 17, 2010 on CD and 15 copies of the issue summary for this project at the University of California, Irvine (UCI).

Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with approximately 200 apartment units to accommodate approximately 400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

It has been determined that this project will not have a significant effect on the environment, and this letter is intended to serve as the Mitigated Negative Declaration for the project. The enclosed Notice of Completion and Environmental Document Transmittal Form will serve as the Notice of Completion of the environmental document. The project's anticipated environmental effects are discussed in the enclosed Initial Study. Copies of the Initial Study and all documents referenced therein are available for review at the University of California, Irvine's Office of Campus and Environmental Planning.

We shall appreciate your prompt acknowledgment and processing of the Negative Declaration/Initial Study. We expect that the State review period will extend from approximately, March 22, 2010 through April 20, 2010.

Sincerely,

  
Alex Marks, AICP  
Associate Planner

Enclosures: 15 Mit Neg Decs/IS, 15 Issue Summaries, and one completed transmittal form

## Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613  
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

<b>SCH #</b>
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**Project Title:** UCI Verano Place Apartments Unit Four Redevelopment Project

Lead Agency: University of California, Irvine Contact Person: Alex Marks  
 Mailing Address: 750 University Tower Phone: 949.824.8692  
 City: Irvine Zip: 92697-2325 County: Orange

**Project Location:** County: Orange City/Nearest Community: Irvine  
 Cross Streets: California Avenue/Adobe Circle Road Zip Code: 92697-2325  
 Longitude/Latitude (degrees, minutes and seconds): 33 ° 38 '45.55" N / 117 ° 49 '49.28" W Total Acres: 17.4  
 Assessor's Parcel No.: \_\_\_\_\_ Section: \_\_\_\_\_ Twp.: \_\_\_\_\_ Range: \_\_\_\_\_ Base: \_\_\_\_\_  
 Within 2 Miles: State Hwy #: SR #73 Waterways: San Diego Creek  
 Airports: \_\_\_\_\_ Railways: \_\_\_\_\_ Schools: Four IUSD schools

**Document Type:**

CEQA:  NOP  Draft EIR NEPA:  NOI Other:  Joint Document  
 Early Cons  Supplement/Subsequent EIR  EA  Final Document  
 Neg Dec (Prior SCH No.) \_\_\_\_\_  Draft EIS  Other: \_\_\_\_\_  
 Mit Neg Dec Other: \_\_\_\_\_  FONSI \_\_\_\_\_

**Local Action Type:**

General Plan Update  Specific Plan  Rezone  Annexation  
 General Plan Amendment  Master Plan  Prezone  Redevelopment  
 General Plan Element  Planned Unit Development  Use Permit  Coastal Permit  
 Community Plan  Site Plan  Land Division (Subdivision, etc.)  Other: Design Approval

**Development Type:**

Residential: Units \_\_\_\_\_ Acres \_\_\_\_\_  Transportation: Type \_\_\_\_\_  
 Office: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Mining: Mineral \_\_\_\_\_  
 Commercial: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Power: Type \_\_\_\_\_ MW \_\_\_\_\_  
 Industrial: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Waste Treatment: Type \_\_\_\_\_ MGD \_\_\_\_\_  
 Educational: \_\_\_\_\_  Hazardous Waste: Type \_\_\_\_\_  
 Recreational: \_\_\_\_\_  Other: University student housing  
 Water Facilities: Type \_\_\_\_\_ MGD \_\_\_\_\_

**Project Issues Discussed in Document:**

<input checked="" type="checkbox"/> Aesthetic/Visual	<input type="checkbox"/> Fiscal	<input checked="" type="checkbox"/> Recreation/Parks	<input checked="" type="checkbox"/> Vegetation
<input type="checkbox"/> Agricultural Land	<input checked="" type="checkbox"/> Flood Plain/Flooding	<input checked="" type="checkbox"/> Schools/Universities	<input checked="" type="checkbox"/> Water Quality
<input checked="" type="checkbox"/> Air Quality	<input type="checkbox"/> Forest Land/Fire Hazard	<input checked="" type="checkbox"/> Septic Systems	<input checked="" type="checkbox"/> Water Supply/Groundwater
<input checked="" type="checkbox"/> Archeological/Historical	<input checked="" type="checkbox"/> Geologic/Seismic	<input checked="" type="checkbox"/> Sewer Capacity	<input checked="" type="checkbox"/> Wetland/Riparian
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Minerals	<input checked="" type="checkbox"/> Soil Erosion/Compaction/Grading	<input checked="" type="checkbox"/> Growth Inducement
<input type="checkbox"/> Coastal Zone	<input checked="" type="checkbox"/> Noise	<input checked="" type="checkbox"/> Solid Waste	<input checked="" type="checkbox"/> Land Use
<input checked="" type="checkbox"/> Drainage/Absorption	<input checked="" type="checkbox"/> Population/Housing Balance	<input checked="" type="checkbox"/> Toxic/Hazardous	<input checked="" type="checkbox"/> Cumulative Effects
<input type="checkbox"/> Economic/Jobs	<input checked="" type="checkbox"/> Public Services/Facilities	<input checked="" type="checkbox"/> Traffic/Circulation	<input type="checkbox"/> Other: _____

**Present Land Use/Zoning/General Plan Designation:**

**Project Description:** *(please use a separate page if necessary)*

Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with approximately 200 apartment units to accommodate approximately 400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

**Reviewing Agencies Checklist**

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".  
If you have already sent your document to the agency please denote that with an "S".

- |   |  |
|---|--|
| <input type="checkbox"/> Air Resources Board                            | <input type="checkbox"/> Office of Emergency Services                        |
| <input type="checkbox"/> Boating & Waterways, Department of             | <input type="checkbox"/> Office of Historic Preservation                     |
| <input type="checkbox"/> California Highway Patrol                      | <input type="checkbox"/> Office of Public School Construction                |
| <input checked="" type="checkbox"/> Caltrans District # <u>12</u>       | <input checked="" type="checkbox"/> Parks & Recreation, Department of        |
| <input checked="" type="checkbox"/> Caltrans Division of Aeronautics    | <input type="checkbox"/> Pesticide Regulation, Department of                 |
| <input type="checkbox"/> Caltrans Planning                              | <input type="checkbox"/> Public Utilities Commission                         |
| <input type="checkbox"/> Central Valley Flood Protection Board          | <input checked="" type="checkbox"/> Regional WQCB # <u>8</u>                 |
| <input type="checkbox"/> Coachella Valley Mtns. Conservancy             | <input checked="" type="checkbox"/> Resources Agency                         |
| <input checked="" type="checkbox"/> Coastal Commission                  | <input type="checkbox"/> S.F. Bay Conservation & Development Comm.           |
| <input type="checkbox"/> Colorado River Board                           | <input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| <input type="checkbox"/> Conservation, Department of                    | <input type="checkbox"/> San Joaquin River Conservancy                       |
| <input type="checkbox"/> Corrections, Department of                     | <input type="checkbox"/> Santa Monica Mtns. Conservancy                      |
| <input type="checkbox"/> Delta Protection Commission                    | <input type="checkbox"/> State Lands Commission                              |
| <input type="checkbox"/> Education, Department of                       | <input type="checkbox"/> SWRCB: Clean Water Grants                           |
| <input type="checkbox"/> Energy Commission                              | <input type="checkbox"/> SWRCB: Water Quality                                |
| <input checked="" type="checkbox"/> Fish & Game Region # <u>5</u>       | <input type="checkbox"/> SWRCB: Water Rights                                 |
| <input type="checkbox"/> Food & Agriculture, Department of              | <input type="checkbox"/> Tahoe Regional Planning Agency                      |
| <input type="checkbox"/> Forestry and Fire Protection, Department of    | <input checked="" type="checkbox"/> Toxic Substances Control, Department of  |
| <input type="checkbox"/> General Services, Department of                | <input checked="" type="checkbox"/> Water Resources, Department of           |
| <input type="checkbox"/> Health Services, Department of                 | <input type="checkbox"/> Other: _____  |
| <input type="checkbox"/> Housing & Community Development                | <input type="checkbox"/> Other: _____  |
| <input type="checkbox"/> Integrated Waste Management Board              |  |
| <input checked="" type="checkbox"/> Native American Heritage Commission |  |

**Local Public Review Period (to be filled in by lead agency)**

Starting Date March 22, 2010 Ending Date April 20, 2010

**Lead Agency (Complete if applicable):**

Consulting Firm: _____	Applicant: <u>University of California, Irvine</u>
Address: _____	Address: <u>750 University Tower</u>
City/State/Zip: _____	City/State/Zip: <u>Irvine, CA 92697-2325</u>
Contact: _____	Phone: <u>949.824.8692</u>
Phone: _____	

Signature of Lead Agency Representative:  Date: 3/18/2010

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.



Campus & Environmental Planning

750 University Tower  
Irvine, CA 92697-2325  
(949) 824-6316  
(949) 824-1213 Fax

March 17, 2010

State of California  
Office of Planning and Research  
1400 Tenth Street, Room 222  
PO Box 3044  
Sacramento, CA 95812-3044

**NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION**

Project Title: UCI VERANO PLACE APARTMENTS UNIT FOUR REDEVELOPMENT PROJECT  
Project Location: University of California, Irvine  
Lead Agency: University of California  
County: Orange

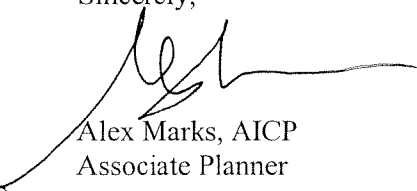
In accordance with State CEQA guidelines and University of California procedures for implementation of CEQA, an Initial Study for the above named project was prepared. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration is appropriate for this project.

Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with approximately 200 apartment units to accommodate approximately 400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

A Mitigated Negative Declaration has been deemed appropriate for this project and this letter is intended to serve as the Negative Declaration for this project. This proposed Mitigated Negative Declaration is being circulated for public review and comment. The Initial Study and the proposed Mitigated Negative Declaration may be reviewed at: [http://www.ceplanning.uci.edu/current\\_projects.html](http://www.ceplanning.uci.edu/current_projects.html), the address above, and UCI's main library. Background material incorporated into the document is available for review at the University's Campus and Environmental Planning Office during normal business hours. We expect the State & public review period will extend from approximately March 22, 2010 through April 20, 2010.

The proposed Mitigated Negative Declaration along with any comments will be considered by the University in conjunction with consideration of the project for approval. The Mitigated Negative Declaration will become Final if adopted by the University.

Sincerely,

  
Alex Marks, AICP  
Associate Planner

**Subject:** Verano Unit-Four Redevelopment Project CEQA Notice

**From:** Richard Demerjian <rgdemerj@uci.edu>

**Date:** Mon, 22 Mar 2010 10:26:07 -0700

**To:** ragrela@uci.edu, rgladson@uci.edu, magomez@uci.edu, jcmason@uci.edu, m.michaels@uci.edu, mngomez@uci.edu, reorr@uci.edu, wcbrase@uci.edu, tomcheck@uci.edu, dfgeocar@uci.edu, djdooros@uci.edu, president@asuci.uci.edu, Peter Bowler <pabowler@uci.edu>, Mike Arias <mrarias@uci.edu>, heckhaus@uci.edu, kwhite@uci.edu, fran.porcella@uci.edu, melissa.f@uci.edu, gkrekeme@uci.edu, president@ags.uci.edu, bchaney@uci.edu, asmarks@uci.edu

Dear Colleagues,

This notice is to inform you that an Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the UCI Verano Place Apartments Unit-Four Redevelopment Project in conformance with the California Environmental Quality Act (CEQA). The IS/MND analyzes the potential environmental effects of this project and is available for public review and comment through April 20, 2010.

Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student-housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with approximately 200 apartment units to accommodate approximately 400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

Copies of the Initial Study/Mitigated Negative Declaration are available for review during normal business hours at the UC Irvine Office of Campus and Environmental Planning in Suite 750 University Tower; at Reserves in the UC Irvine Langson Library; at the University Park Public Library in Irvine at 512 Sandburg Way; and are available electronically at [http://www.ceplanning.uci.edu/current\\_projects.html](http://www.ceplanning.uci.edu/current_projects.html). Comments must be received by 5:00 pm on April 20, 2010 and can be e-mailed to [ceplanning@uci.edu](mailto:ceplanning@uci.edu) or sent to:

Alex Marks  
Associate Planner  
Office of Campus and Environmental Planning  
University of California, Irvine  
750 University Tower

--  
Richard Demerjian  
Director  
Office of Campus and Environmental Planning  
University of California, Irvine  
[rgdemerj@uci.edu](mailto:rgdemerj@uci.edu)  
Office (949) 824-7058  
Mobile (949) 280-9619  
Fax (949) 824-1213

**AFFIDAVIT OF PUBLICATION**

STATE OF CALIFORNIA, )  
 ) ss.  
County of Orange )

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of **The Orange County Register**, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of 1/18/52, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

March 22, 2010

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: March 22, 2010

  
Signature

**The Orange County Register**  
**625 N. Grand Ave.**  
**Santa Ana, CA 92701**  
**(714) 796-7000 ext. 2209**

**PROOF OF PUBLICATION**

Proof of

**NOTICE OF COMPLETION AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION UNIVERSITY OF CALIFORNIA, IRVINE**

**UCI VERANO PLACE APARTMENTS UNIT FOUR REDEVELOPMENT PROJECT**

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the Verano Place Unit-Four Redevelopment Project at the University of California, Irvine (UCI) campus. In accordance with the State of California Environmental Quality Act (CEQA) Guidelines and the University of California Procedures for the Implementation of CEQA, an Initial Study for the above-named project was prepared. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration is appropriate for this project. The site does not contain any known hazardous waste materials, as set forth in Government Code Section 65962.5.

Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with approximately 200 apartment units to accommodate approximately 400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

The Initial Study is available for review at: [http://www.ceplanning.uci.edu/current\\_projects.html](http://www.ceplanning.uci.edu/current_projects.html) and the following locations:

University of California, Irvine  
Main Library, Government Publications Desk  
Irvine, California 92697

Orange County Public Library  
University Park Branch  
4512 Sandburg Way  
Irvine, California 92612

Background material that has been incorporated into this document is available for review at the UCI Office of Campus and Environmental Planning by appointment (see address below) during regular business hours.

A 30-day public review period will commence on March 22, 2010 and extends through April 20, 2010. Written comments may be submitted to: Alex Marks, AICP, Associate Planner, Office of Campus and Environmental Planning, University of California, Irvine, 750 University Tower, Irvine, California 92697-2325. Comments may also be submitted via email to [ceplanning@uci.edu](mailto:ceplanning@uci.edu). Your response may be sent at the earliest possible date, but no later than 5:00 p.m. April 20, 2010. If you have any questions regarding the project, please contact (949) 824-8692.

Publish: Orange County Register  
March 22, 2010 R-439 9218744



# VERANO PLACE UNIT FOUR REDEVELOPMENT PROJECT

## 30-day Review Mailing List

State Clearinghouse  
Office of Planning & Research  
1400 Tenth Street, Room 222  
Sacramento, CA 95814

Orange County Transportation Auth.  
550 S. Main St.  
Orange, CA 92868

California Dept. of Fish & Game  
4949 Viewridge Ave.  
San Diego, CA 92133

CA Dept. of Toxic Substances Control  
1011 N. Grandview Ave.  
Glendale, California 91201

California Regional Water Quality  
Control Board – Santa Ana Region  
3737 Main St., Suite 500  
Riverside, CA 92501-3348

Public Utilities Commission  
320 W. 4<sup>th</sup> Street, Suite 500  
Los Angeles, CA 90013

County of Orange  
Planning & Development Services  
300 N. Flower Street  
Santa Ana, CA 92703  
Attn: Tim Neely

Director Richard Orr  
Campus Asset Management  
ZOT 7475

Vice Chancellor Wendell Brase  
Administrative & Business  
Services  
ZOT: 1025

Counsel to the Chancellor  
Diane Fields Geocariss  
ZOT: 1900

President, ASUCI  
D200 Student Center  
ZOT: 1375

Open Space Reserve Committee  
C/O Dept. of Ecology &  
Evolutionary Biology  
Prof. Peter Bowler  
ZOT: 2525

Metropolitan Water District  
700 N. Alameda St.  
Los Angeles, CA 90012

U.S. Army Corps of Engineers  
Los Angeles District  
300 North Los Angeles Street  
Los Angeles, CA 90012  
Orange County Fire Authority  
P.O. Box 57115  
Irvine, CA 92619-7115

Irvine Ranch Water District  
15600 Sand Canyon Ave.  
Irvine, CA 92618

South Coast Air Quality  
Mgmt. District (SCAQMD)  
21865 E. Copley Dr.  
Diamond Bar, CA 91765-4182

Orange County Public Library  
University Park Branch  
4512 Sandburg Way  
Irvine, CA 92612

UCI Main Library  
Government Publications  
Attn: Ms. Yvonne Wilson  
ZOT 8100

Academic Senate  
Jutta Heckhausen  
ZOT: 2525

Dan Dooros  
Associate Vice Chancellor  
Student Affairs  
405 Aldrich Hall  
ZOT: 5180

Chancellor Michael Drake  
C/O Ramona Agrela  
ZOT: 1900

Interim Assistant Vice Chancellor  
Facilities Management  
Marc A. Gomez  
ZOT: 5444

Associate Vice Chancellor  
Design & Construction Services  
Rebekah Gladson  
ZOT: 2450

California Dept. of Transportation  
District 12  
3337 Michelson Dr., Suite 380  
Irvine, CA 92612-1699

Southern California Assoc. of  
Governments (SCAG)  
818 West 7th Street, 12th Fl.  
Los Angeles, CA 90017  
Irvine Unified School District  
5050 Barranca Parkway  
Irvine, CA 92604-4698  
U.S. Fish & Wildlife Service  
Division of Ecological Services  
2730 Loker Avenue West  
Carlsbad, CA 92008

Transportation Corridor Agencies  
125 Pacifica  
Irvine, CA 92618-3304

City of Irvine  
Community Development Dept.  
P.O. Box 19575  
Irvine, CA 92623-9575  
Attn: Mr. Bill Jacobs

UCI Archives  
Main Library  
Attn: Michelle Light  
ZOT 8100

Director Janet Mason  
Capital Planning  
ZOT: 4535

Director of Child Care Service  
Kathy White  
ZOT: 2250

Vice Chancellor Planning and Budget  
Meredith Michaels  
ZOT: 3025

Manuel Gomez  
Vice Chancellor  
Student Affairs  
ZOT: 5175

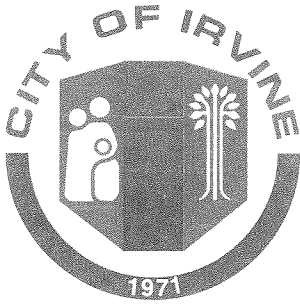
Assoc. Executive Vice Chancellor  
Dave Tomcheck  
ZOT: 1000

Executive Vice Chancellor  
Michael Gottfredson  
C/O Mr. Michael Arias  
ZOT: 1000  
Director of Campus Operations  
Gary Krekemeyer  
Design & Construction Services  
ZOT: 2450

Senior Project Manager  
Design & Construction Services  
Fran Porcella  
ZOT: 2450  
Director-Verano Place Housing  
Beverly Chaney  
ZOT: 6375

Melissa Falkenstein  
Department of Student Housing  
ZOT: 3250

President, AGS  
president@ags.uci.edu



**RECEIVED**

**APR 13 2010**

**UCI Campus & Environmental Planning**

April 9, 2010

Mr. Alexander S. Marks, AICP  
University of California, Irvine  
Office of Campus & Environmental Planning  
750 University Tower  
Irvine, CA 92697-2325

**SUBJECT: Review of UCI Verano Place Apartments Mitigated Negative Declaration**

Dear Mr. Marks:

The City of Irvine has reviewed the above referenced project and has the following comments:

COMMENT 1: Include a condition or mitigation that requires intersection improvements along Bonita Canyon Drive from Shady Canyon Drive to SR-73 ramps to be completed prior to occupancy of the project. The City of Irvine presumes these improvements are committed and will be constructed by 2013.

COMMENT 2: Provide the socioeconomic trip generation based on the City of Irvine's ITAM runs. This table should be included with the land use and vehicular trip generation presented in Table 1 of the traffic memorandum.

COMMENT 3: Expand the traffic memorandum to include the existing and interim (2015) traffic volumes and intersection level of service for with (600 beds) and without project scenario for the following intersections:

- Culver/Campus
- Culver/University

In addition, the interim impact of the project shall be identified and mitigated for the above intersections.

COMMENT 4: Since the construction phase of the development will likely utilize City streets, the report should include discussion and mitigation regarding construction related truck traffic. Construction traffic must comply with the City's Noise Ordinance:

Mr. Alexander S. Marks  
April 9, 2010  
Page 2

As specified in the City of Irvine's Noise Ordinance, construction activities may occur between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative.

Trucks, vehicles, and equipment that are making or are involved with material deliverables, loading, or transfer materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and Federal holidays unless a temporary waiver is granted by the City.

COMMENT 5: Mitigation of short term construction impacts should include compliance with the City's Designated and Restricted Truck Routes.

COMMENT 6: Provide information regarding location and number of parking stalls required and provided for the students during various phases of the project from September 2010 to September 2014. There is no mention of parking demand and supply during various phases of construction in the entire document.

Thank you for the opportunity to review and comment on the Verano Place Apartments Mitigated Negative Declaration. We would appreciate the opportunity to review any further information regarding this project as the planning process proceeds. If you have any questions, please contact me by telephone at (949) 724-6521 or by email at [bjacobs@ci.irvine.ca.us](mailto:bjacobs@ci.irvine.ca.us)

Sincerely,

A handwritten signature in black ink that reads "Sherman Jones for Bill Jacobs". The signature is written in a cursive, flowing style.

Bill Jacobs, AICP  
Principal Planner

## City of Irvine

### Comments 1 and 3

The Draft Initial Study (IS) is tiered from the UCI 2007 Long Range Development Plan (LRDP) Final Environmental Impact Report (FEIR). As stated in the Project Description, the proposed project is the redevelopment and replacement of an existing approximately 400-bed student housing complex. At project completion there would be no increase in vehicle trips from the existing project baseline. These existing trips were included in the baseline for the traffic analysis conducted for the LRDP FEIR.

Construction of the project would temporarily increase the number of beds available in Verano Place Unit Four (VPU-4) by approximately 200 beds prior to the completion of Phase II, a period of approximately two years. The project, including the temporary bed increase would not exceed the total number of student beds accommodated in the LRDP and analyzed in the LRDP FEIR. The IS traffic evaluation determined that the AM and PM peak hour trips resulting from the temporary increase in beds (which were considered new trips associated with the project) would be 23 and 44 respectively. Therefore, even under the City of Irvine's Traffic Impact Analysis Guidelines (August 2004) (which are not applicable to UCI but confirm the validity of UCI's approach to the analysis), neither a traffic nor limited scope traffic study would have been required for the project.

In any event, the traffic analysis prepared for the LRDP FEIR (Table 4.13-11 LRDP FEIR pages 4.13-44/45), indicated that the intersections noted in Comments 1 and 3 operate at acceptable AM and PM peak hour levels of service:

- Culver Drive/Bonita Canyon Drive: C/C
- Bonita Canyon Drive/Newport Coast Drive: C/A
- Bonita Canyon Drive/SR 73 NB Ramps: A/A
- Bonita Canyon Drive/SR 73 SB Ramps: A/A
- Culver Drive/Campus Drive: B/B
- Culver Drive/University Drive: A/C

As stated in the FEIR, full implementation of the LRDP, which is expected to occur by 2025-26, would affect the Bonita Canyon Drive/Newport Coast Drive (the only Bonita Canyon Drive intersection with LRDP impacts) and Culver Drive/University Drive intersections in the Year 2025 and Post 2025 conditions. Until these horizon years, traffic volumes generated by UCI are not anticipated to impact the levels of service of these intersections. Thus, the intersection improvements noted in Comment 1 are not relevant to the project's analysis and their completion is not required prior to its occupancy. UCI will continue to implement a range of measures in association with the LRDP to reduce vehicle trips and resulting impacts, and will monitor campus trip generation and distribution, and the performance of UCI Transportation Program intersections in relation to enrollment growth.

Based upon the project description and the estimated trip generation, the University determined that the interim trips generated by the availability of the 200 temporary beds would be negligible

and that the project would not result in any adverse impacts in the area. Upon completion of the project in approximately November 2014, traffic volumes generated within VPU-4 would return to existing conditions, and would not result in a direct impact to the listed intersections.

#### Comment 2

As stated in the IS response to checklist item 13.a (page 90), use of the Irvine Transportation Analysis Model (ITAM) in the project traffic evaluation was limited to derivation of the project trip distribution (i.e., general distribution on surrounding roadways for project trip assignment purposes) included in the LRDP traffic study. Trip rates assumed in the traffic evaluation are based on observed/field studies conducted for the main campus area, to support development of the trip forecasts for the UCI Main Campus Traffic Mode. These trip rates are presented in Table 1 of the traffic evaluation, along with the proposed project trip generation. The use of the ITAM's socioeconomic data would not have been feasible for evaluating this project's impacts.

#### Comment 4

A range of truck types will be required to transport machinery, supplies, remove waste materials, etc. on and off-site during the project's various construction stages. The heaviest of these trucks will likely be required during the grading phase; however, as there would be a balance of cut and fill (see page 7 in the IS) no trucks will be required to import or export soil. Air quality impacts related to construction traffic will be minimized through implementation of mitigation measure Air-2B, which includes the development by the construction contractor of a construction-traffic management plan that includes scheduling heavy-duty truck deliveries to avoid peak traffic periods and consolidating truck deliveries.

As stated in the IS (page 76-77) mitigation measure Noi-2A would reduce noise impacts from the project's construction traffic to a less than significant level. Provisions (i), (ii), and (iii) in this measure are consistent with the sections of the City's noise ordinance cited in comment 4. Significant noise, air quality, and traffic impacts are not expected as a result of the infrequent and temporary construction truck traffic associated with this project.

#### Comment 5

All trucks traveling to and from the project site during the construction of the project would comply with the City's Designated and Restricted Truck Routes.

#### Comment 6

The completed project would provide sufficient surface parking spaces to serve projected demand (a ratio of approximately one space per student bed). As stated in the IS (page 7) the sequence of demolition and subsequent reconstruction/replacement of Verano Place Unit Four's existing surface parking lots that will be established by the project design/build team, will ensure that adequate supply of parking spaces remains available throughout project construction. This may include access to on-site parking or in other campus parking areas. The IS does not discuss parking related to the project as there is no longer such a requirement within CEQA.



Linda S. Adams  
Secretary for  
Environmental Protection



## Department of Toxic Substances Control

Maziar Movassaghi, Acting Director  
5796 Corporate Avenue  
Cypress, California 90630



Arnold Schwarzenegger  
Governor

**RECEIVED**

APR 15 2010

April 14, 2010

UCI Campus & Environmental Planning

Mr. Alex Marks  
University of California, Irvine  
Office of Campus & Environmental Planning  
750 University Tower  
Irvine, California 92697-2325

### DRAFT MITIGATED NEGATIVE DECLARATION (ND) FOR UCI VERANO PLACE APARTMENTS UNIT FOUR REDEVELOPMENT PROJECT (SCH# 2010031090)

Dear Mr. Marks:

The Department of Toxic Substances Control (DTSC) has received your submitted document for the above-mentioned project. As stated in your document: "The proposed project would replace the aging apartment buildings in the University of California, Irvine's (UCI) Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project site encompasses approximately 17.4 acres in UCI's East Campus Sector. The replacement project would include approximately 225,000 gross square foot (GSF) of new student apartment buildings at a building height of four to six stories. The project would include approximately 200 apartment units at approximately 885 assignable square feet (ASF), to accommodate approximately 400 students. Each unit would include two-bedrooms, two bathrooms, common living space, and a kitchen. The proposed project also includes an approximately 9,000 GSF community building with office, conference, and community rooms, a kitchen, restrooms, and other support uses, and demolition and replacement on site of existing child-care facilities and freestanding laundry buildings".

Based on the review of the submitted document DTSC has the following comments:

- 1) The ND should identify and determine whether current or historic uses at the project area may have resulted in any release of hazardous wastes/substances.
- 2) The document states that the ND would identify any known or potentially contaminated sites within the proposed project area. For all identified sites, the

ND should evaluate whether conditions at the site may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:

- National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
  - EnviroStor, a database primarily used by the California Department of Toxic Substances Control, at [www. Envirostor.dtsc.ca.gov](http://www.Envirostor.dtsc.ca.gov).
  - Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
  - Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.
  - Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
  - GeoTracker: A List that is maintained by Regional Water Quality Control Boards.
  - Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
  - The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).
- 3) The ND should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If hazardous materials or wastes were stored at the site, an environmental assessment should be conducted to determine if a release has occurred. If so, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. It may be necessary to determine if an expedited response action is required to reduce existing or potential threats to public health or the environment. If no



immediate threat exists, the final remedy should be implemented in compliance with state laws, regulations and policies.

- 4) The project construction may require soil excavation and soil filling in certain areas. Appropriate sampling is required prior to disposal of the excavated soil. If the soil is contaminated, properly dispose of it rather than placing it in another location. Land Disposal Restrictions (LDRs) may be applicable to these soils. Also, if the project proposes to import soil to backfill the areas excavated, proper sampling should be conducted to make sure that the imported soil is free of contamination.
- 5) Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. A study of the site overseen by the appropriate government agency might have to be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.
- 6) If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the ND should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight.
- 7) If weed abatement occurred, onsite soils may contain herbicide residue. If so, proper investigation and remedial actions, if necessary, should be conducted at the site prior to construction of the project.
- 8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

Ms. Alex Marks  
April 14, 2010  
Page 4

- 9) DTSC can provide guidance for cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies that are not responsible parties, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see [www.dtsc.ca.gov/SiteCleanup/Brownfields](http://www.dtsc.ca.gov/SiteCleanup/Brownfields), or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

If you have any questions regarding this letter, please contact me at (714) 484-5472 or at "ashami@DTSC.ca.gov".

Sincerely,



Al Shami  
Project Manager  
Brownfields and Environmental Restoration Program - Cypress

cc: Governor's Office of Planning and Research  
State Clearinghouse  
P.O. Box 3044  
Sacramento, California 95812-3044

CEQA Tracking Center  
Department of Toxic Substances Control  
Office of Environmental Planning and Analysis  
1001 I Street, 22nd Floor, M.S. 22-2  
Sacramento, California 95814  
[ADelacr1@dtsc.ca.gov](mailto:ADelacr1@dtsc.ca.gov)

CEQA #2856

## State of California, Department of Toxic Substances Control

### Comments 1, 2, and 3

As stated in the Draft Initial Study (IS) response to checklist item 6.d (page 54) research conducted in conjunction with the UCI 2007 Long Range Development Plan (LRDP) Final Environmental Impact Report (FEIR) determined that there were no known hazardous waste sites in this part of the campus. In addition, UC Irvine reviewed the Department of Toxic Substances Control's EnviroStor database during the preparation of this Initial Study and confirmed the absence of any hazardous waste site in the project vicinity. No further investigations or mitigation measures are warranted with respect to site contamination, and there is no need to assign regulatory agency responsibility for oversight of any site investigations, testing, or site clean up activities. As stated in the LRDP FEIR (VI page 4.6-28), from which the IS is tiered, UCI performs lead and asbestos surveys for all remodeling and demolition projects. Standard specifications included in all campus construction contracts specify that contractors who disturb or potentially disturb asbestos or lead must comply with all federal, State, and local rules and regulations regarding hazardous materials. Contractors are also required to stop work and inform UCI if they encounter material believed to be asbestos, PCBs, lead, or other hazardous materials. Compliance with federal and State regulations, campus policies, and current UCI Environmental Health & Safety Department procedures minimizes the potential for exposure of workers to contaminated building materials.

### Comment 4

As stated above in response to comments 1-3, there is no evidence of any site contamination and improvements that might contain hazardous substances. The University's standard construction specifications require that contractors be responsible for identification and proper removal and disposal of any unexpected soil or water contaminants that might be encountered during grading operations.

### Comment 5

Please refer to the previous responses to comments 1 through 4. The existing land use of the site (student housing) is a land use that does not involve handling or release of substantial quantities of hazardous materials. There is no evidence of site contamination by hazardous substances and wastes and no impacts involving release of substances that could be harmful to people or the environment are expected.

### Comments 6 and 7

As stated above there is no evidence of any site contamination; however, standard contractor specifications will ensure that in the event that potentially hazardous substances are discovered during site grading, appropriate measures will be immediately taken to properly contain and remove contaminated materials. No further investigations are needed and no mitigation measures are warranted. As noted in the LRDP FEIR (VI page 4.6-2), herbicides are used on campus and may have been applied at the project site; however, such applications would have

been infrequent and on an as needed basis. As stated above, the project site is an existing student-housing complex, a use that does not involve the use of large quantities of herbicides. Additionally, as noted in the LRDP FEIR (VI page 4.6-28) UCI implements health and safety plans and site remediation plans for work within existing buildings as a condition of campus and contractor construction management.

#### Comment 8

As stated in the Initial Study project description, and summarized in the introductory portion of the letter from this author, the proposed project would build university student housing. No facilities are proposed that would involve processes that require storage or use of hazardous substances, or any activities that would generate of hazardous wastes. The Draft IS notes (page 52) that the proposed residential uses would likely involve storage, use and disposal of minor quantities of typical household hazardous materials, such as pesticides, fertilizers, interior and exterior paints and cleaning supplies. Given this, the Initial Study's response to questions 6 a and b (page 52) concluded that this project would not result in any significant impacts involving hazardous waste generation or disposal.

#### Comment 9

Comment noted

**DEPARTMENT OF TRANSPORTATION**

District 12  
3337 Michelson Drive, Suite 380  
Irvine, CA 92612-8894  
Tel: (949) 724-2267  
Fax: (949) 724-2592



*Flex your power!  
Be energy efficient!*

**April 20, 2010**

Mr. Alex Marks  
University of California, Irvine  
Office of Campus & Environmental Planning  
750 University Tower  
Irvine, California 92697-2325

File: IGR/CEQA  
SCH #: 2010031090  
Log #: 2475  
SR-73, I-405

**Subject: Verano Place Unit-Four Redevelopment**

Dear Mr. Marks:

Thank you for the opportunity to review and comment on the **Tiered Initial Study/Mitigated Negative Declaration for the Verano Place Unit-Four Redevelopment Project**. The proposed project would replace the aging apartment buildings in the University of California, Irvine's Verano Place Unit-Four student housing complex, with new apartment buildings for a total capacity of approximately 400 student beds. The project site comprises about 17.40 acres of land developed as a student apartment complex adjacent the western edge of California Avenue in the eastern part of the campus in the City of Irvine.

**The California Department of Transportation, District 12 is a commenting agency** on this project, and has no comment at this time.

Please continue to keep us informed of this project and any future developments which could potentially impact State transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Zhongping (John) Xu at (949) 724-2338.

Sincerely,

A handwritten signature in black ink that reads "Christopher Herre".

CHRISTOPHER HERRE  
Branch Chief, Local Development/Intergovernmental Review

c: Terry Roberts, Office of Planning and Research

**State of California, Department of Transportation, District 12**

This letter does not make any comments that require a response.



STATE OF CALIFORNIA  
GOVERNOR'S OFFICE of PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



ARNOLD SCHWARZENEGGER  
GOVERNOR

CYNTHIA BRYANT  
DIRECTOR

April 23, 2010

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MAY 6 2010  
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Alex Marks  
University of California, Irvine  
750 University Tower  
Irvine, CA 92697-2325

UCI Campus & Environmental Planning

Subject: UCI Verano Place Apartments Unit Four Redevelopment Project  
SCH#: 2010031090

Dear Alex Marks:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on April 20, 2010, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan  
Acting Director, State Clearinghouse

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2010031090  
**Project Title** UCI Verano Place Apartments Unit Four Redevelopment Project  
**Lead Agency** University of California, Irvine

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**Type** MND Mitigated Negative Declaration  
**Description** Implementation of the proposed project would replace the aging apartment buildings in the UCI Verano Place Unit-Four (VPU-4) student housing complex, with new apartment buildings. The project would demolish the existing apartment buildings and construct new student apartment buildings with ~200 apartment units to accommodate ~400 students. The proposed project also includes construction of a community building, and demolition and replacement on site of existing child-care facilities, laundry buildings, accessory structures, surface parking lots, pedestrian paths, bike paths, landscaping, and site lighting.

---

**Lead Agency Contact**

**Name** Alex Marks  
**Agency** University of California, Irvine  
**Phone** 949-824-8692 **Fax**  
**email**  
**Address** 750 University Tower  
**City** Irvine **State** CA **Zip** 92697-2325

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**Project Location**

**County** Orange  
**City** Irvine  
**Region**  
**Lat / Long** 33° 38' 45.55" N / 117° 49' 49.28" W  
**Cross Streets** California Ave/Adobe Circle Rd  
**Parcel No.**  

<b>Township</b>	<b>Range</b>	<b>Section</b>	<b>Base</b>
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**Proximity to:**

**Highways** SR 73  
**Airports**  
**Railways**  
**Waterways** San Diego Creek  
**Schools** 4 IUSD  
**Land Use**

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**Project Issues** Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

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**Reviewing Agencies** Resources Agency; Department of Fish and Game, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 12; Regional Water Quality Control Board, Region 8; Department of Toxic Substances Control; Native American Heritage Commission

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**Date Received** 03/22/2010 **Start of Review** 03/22/2010 **End of Review** 04/20/2010



**State of California, Governor's Office of Planning and Research**

This correspondence confirms completion of the State Clearinghouse review process for the Draft IS/MND. No state agencies submitted comments through the Clearinghouse.



## **APPENDIX E**

### **MITIGATION AND MONITORING PROGRAM**

# VERANO PLACE APARTMENTS UNIT FOUR REDEVELOPMENT PROJECT

## MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
<i>Aesthetics</i>			
<b>Aes-2A</b> Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (e.g., double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare.	CEP	Prior to project design approval <sup>(1)</sup>	
<b>Aes-2B</b> Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with <i>UCI's Campus Standards and Design Criteria</i> for outdoor lighting, the plan shall include, but not be limited to, the following design features:	CEP	During design development	CEP to confirm and document policy and guideline compliance
<ul style="list-style-type: none"> <li>i. Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors;</li> <li>ii. Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and</li> <li>iii. Shielding of direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping.</li> </ul>			
<i>Air Quality</i>			
<b>Air-2A</b> During project level environmental review of future projects that implement the 2007 LRDP and that could result in a significant air quality impact from construction emissions, UCI shall retain a qualified air quality specialist to prepare an air quality assessment of the anticipated project-related construction emissions. The assessment shall quantify the project's estimated construction emissions with and without implementation of applicable Best Management Practices (BMPs) listed in mitigation measure Air-2B and compare them with established SCAQMD significance thresholds. In addition, the air quality assessment shall include analysis of temporal phasing as a means of reducing construction emissions.	CEP	During environmental review	CEP to review and approve air quality assessment
<p>If the estimated construction emissions are under SCAQMD's significance thresholds or if mitigation measure Air-2B would reduce emissions to below established thresholds, then the project's direct impact to air quality would be less than significant and no additional mitigation would be required. If the project's construction emissions would exceed established thresholds with implementation of applicable BMPs listed in mitigation measure Air-2B, and no additional mitigation to reduce the</p>			

Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
<p>emissions below the threshold is feasible, then the project’s direct impact to air quality would remain significant following mitigation.</p>			
<p><b>Air-2B</b> Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall ensure that the project construction contract includes a construction emissions mitigation plan, including measures compliant with SCAQMD Rule 403 (Fugitive Dust) to be implemented and supervised by the on-site construction supervisor, which shall include, but not be limited to, the following Best Management Practices (BMPs):</p> <ul style="list-style-type: none"> <li>i. During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, non-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor.</li> <li>ii. During windy days when fugitive dust can be observed leaving the construction site, additional applications of water shall be required at a rate to be determined by the on-site construction supervisor.</li> <li>iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities.</li> <li>iv. Areas of the construction site that will remain inactive for three months or longer following clearing, grubbing and/or grading shall receive appropriate BMP treatments (e.g., revegetation, mulching, covering with tarps, etc.) to prevent fugitive dust generation.</li> <li>v. All exposed soil or material stockpiles that will not be used within 3 days shall be enclosed, covered, or watered twice daily, or shall be stabilized with approved non-toxic chemical soil binders at a rate to be determined by the on-site construction supervisor.</li> <li>vi. Unpaved access roads shall be stabilized via frequent watering, non-toxic chemical stabilization, temporary paving, or equivalent measures at a rate to be determined by the on-site construction supervisor.</li> <li>vii. Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered.</li> <li>viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites.</li> <li>ix. Where visible soil material is tracked onto adjacent public paved roads, the paved roads shall be swept and debris shall be returned to the construction site or transported off site for disposal.</li> <li>x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.</li> <li>xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable.</li> <li>xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.</li> </ul>	D&CS	Prior to commencement of construction activities and during construction	D&CS to develop and implement plan  CEP to confirm and monitor

<b>Mitigation Measure</b>	<b>Responsible Party</b>	<b>Mitigation Timing</b>	<b>Monitoring and Reporting Procedure</b>
<p>xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.</p> <p>xiv. Heavy construction equipment shall use low NO<sub>x</sub> diesel fuel to the extent that it is readily available at the time of construction.</p> <p>xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines.</p> <p>xvi. The construction contractor shall develop a construction traffic management plan that includes the following:</p> <ul style="list-style-type: none"> <li>• Scheduling heavy-duty truck deliveries to avoid peak traffic periods</li> <li>• Consolidating truck deliveries</li> </ul> <p>xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers.</p> <p>xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible.</p> <p>xix. Project constructions plans and specifications will include a requirement to define and implement a work program that would limit the emissions of reactive organic gases (ROG's) during the application of architectural coatings to the extent necessary to keep total daily ROG's for each project to below 75 pounds per day, or the current SCAQMD threshold, throughout that period of construction activity to the extent feasible. The specific program may include any combination of restrictions on the types of paints and coatings, application methods, and the amount of surface area coated as determined by the contractor.</p> <p>xx. The construction contractor shall maintain signage along the construction perimeter with the name and telephone number of the individual in charge of implementing the construction emissions mitigation plan, and with the telephone number of the SCAQMD's complaint line. The contractor's representative shall maintain a log of public complaints and corrective actions taken to resolve complaints.</p>			

**Biological Resources**

<p><b>Bio-3A</b> For future projects that implement the 2007 LRDP and are located on sites containing mule fat scrub or herbaceous wetland habitats, UCI shall retain a qualified biologist to conduct a survey of these habitats. If project-level surveys determine that mule fat scrub riparian habitat and/or herbaceous wetland habitat may be impacted by the project, then mitigation measures Bio-3B and 3C shall be implemented.</p>	CEP	During environmental review	CEP to confirm that determination was made and was specified in environmental analysis
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Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
<b>Bio-3B</b> For future projects that implement the 2007 LRDP and could impact mule fat scrub riparian habitat and/or herbaceous wetland habitats as determined by mitigation measure Bio-3A, design features shall be considered to avoid and/or minimize direct impacts to these sensitive vegetation communities, to the extent feasible. If it is not feasible to avoid these impacts, then mitigation measure Bio-3C shall be implemented.	CEP	Prior to construction	CEP to determine feasibility of avoidance
<b>Bio-3C</b> For future projects that implement the 2007 LRDP and would impact mule fat scrub riparian habitat and/or herbaceous wetland habitat, if these areas contain jurisdictional wetlands, all necessary regulatory permits shall be obtained and impacts shall be mitigated through implementation of Mitigation Measure Bio 4A. If no jurisdictional wetlands are present, impacts to mule fat scrub riparian habitat and/or herbaceous wetland habitat of greater than 0.1 acre shall be mitigated at ratios of 1:1 through habitat creation, restoration, or enhancement. Mitigation shall occur within dedicated campus open space areas where feasible, or at off campus locations if on-site mitigation is not feasible. A qualified biologist shall be retained to assist in preparation, implementation, and monitoring of a habitat restoration plan, identifying the site preparation and installation requirements, establishment, monitoring, and long term management of the mitigation areas. Impacts to less than 0.1 acre of these habitat types, where no jurisdictional wetlands are present, would not require mitigation.	CEP	Prior to construction	CEP to review and approve habitat restoration plan; D&CS to incorporate in construction documents and CEP to confirm
<b>Bio-4A</b> For future projects that implement the 2007 LRDP and are located on sites containing (or within 50 feet of) wetlands or other jurisdictional areas, or on sites containing (or within 25 feet of) a natural drainage course, UCI shall retain a qualified biologist to prepare a jurisdictional delineation. The jurisdictional delineation shall identify the presence of any areas that are subject to USACE, CDFG, or RWQCB jurisdiction and the potential for the project to affect them. If there is potential for the project to affect jurisdictional areas all necessary regulatory permits shall be obtained and impacts shall be avoided or mitigated through implementation of mitigation measures established through consultation with regulatory agencies and as specified in the final regulatory permits and conditions.	CEP	During environmental review  Prior to initiating construction	CEP to confirm that determination was made and specified in environmental analysis
<b>Cultural Resources</b>			
<b>Cul-1C</b> Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally-affiliated Native American) to monitor these activities. In the event of an unexpected archeological discovery during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological resources, in accordance with the procedures below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If the archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:  i. Perform appropriate technical analyses;	D&CS / CEP	During construction	On-site construction supervisor to notify CEP who will stop/direct work

Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
<ul style="list-style-type: none"> <li>ii. File any resulting reports with the South Coastal Information Center; and</li> <li>iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.</li> </ul>			
<p><b>Cul-4A</b> Prior to grading or excavation for future projects that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontologist to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring.</p>	D&CS / CEP	During construction and at time of find	Qualified consultant to notify CEP and D&CS who will stop/direct work
<p><b>Cul-4B</b> If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.</p>	CEP	At time of find	CEP to retain documentation that procedures were followed
<p><b>Cul-4C</b> For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:</p> <ul style="list-style-type: none"> <li>i. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI);</li> <li>ii. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and</li> <li>iii. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.</li> </ul>	CEP	When resource determined to be significant	CEP to retain documentation that procedures were followed
<b>Hazardous and Hazardous Materials</b>			
<p><b>Haz-6A</b> Prior to initiating on-site construction for future projects that implement the 2007 LRDP and would involve a lane or roadway closure, the construction contractor and/or UCI Design and Construction Services shall notify the UCI Fire Marshal. If determined necessary by the UCI Fire Marshal, local emergency services shall be notified of the lane or roadway closure by the Fire Marshal.</p>	D&CS/PTS	Prior to construction	D&CS to record Fire Marshal notification and notify CEP
<b>Hydrology and Water Quality</b>			
<p><b>Hyd-1A</b> As early as possible in the planning process of future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or greater, and for all development projects occurring on the North Campus in the watershed of the San Joaquin Freshwater Marsh, a qualified engineer shall complete a drainage study. Design features and other recommendations from the drainage study shall be incorporated into project development plans and construction documents. Design features shall be consistent with UCI's Storm Water Management Program, shall be operational at the time of project</p>	D&CS / CEP	Prior to project design approval <sup>(1)</sup>	D&CS to incorporate into project design, and submit study to CEP for use completing environmental analysis



Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
occupancy, and shall be maintained by UCI. At a minimum, all drainage studies required by this mitigation measure shall include, but not be limited to, the following design features:			
<ul style="list-style-type: none"> <li>i. Site design that controls runoff discharge volumes and durations shall be utilized, where applicable and feasible, to maintain or reduce the peak runoff for the 10-year, 6-hour storm event in the post-development condition compared to the pre-development condition, or as defined by current water quality regulatory requirements.</li> <li>ii. Measures that control runoff discharge volumes and durations shall be utilized, where applicable and feasible, on manufactured slopes and newly-graded drainage channels, such as energy dissipaters, revegetation (e.g., hydroseeding and/or plantings), and slope/channel stabilizers.</li> </ul>			
<b>Hyd-2A</b> Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve an erosion control plan for project construction. The plan shall include, but not be limited to, the following applicable measures to protect downstream areas from sediment and other pollutants during site grading and construction:	D&CS / CEP	Prior to construction	D&CS to confirm preparation plan, deliver to CEP, and incorporate in construction documents
<ul style="list-style-type: none"> <li>i. Proper storage, use, and disposal of construction materials.</li> <li>ii. Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter.</li> <li>iii. Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.</li> <li>iv. Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures.</li> <li>v. Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures.</li> <li>vi. Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures).</li> <li>vii. Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping.</li> <li>viii. Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.</li> </ul>			E&HS/CEP to confirm erosion control plan implementation by contractor
<b>Hyd-2B</b> Prior to project design approval for future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or more, the UCI shall ensure that the projects include the design features listed below, or their equivalent, in addition to those listed in mitigation measure Hyd-1A. Equivalent design features may be applied consistent with applicable MS4 permits (UCI's Storm Water Management Plan) at that time. All applicable design features shall be incorporated into project development plans and construction documents; shall be operational at the time of project occupancy;	D&CS/EH&S/ CEP	Prior to project design approval <sup>(1)</sup>	D&CS to confirm incorporation in construction documents  Notification to CEP and EH&S

Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
<p>and shall be maintained by UCI.</p> <ul style="list-style-type: none"> <li>i. All new storm drain inlets and catch basins within the project site shall be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCI standards.</li> <li>ii. Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment.</li> <li>iii. Permanent trash container areas shall be enclosed to prevent off-site transport of trash, or drainage from open trash container areas shall be directed to the sanitary sewer system.</li> <li>iv. At least one treatment control is required for new parking areas or structures, or for any other new uses identified by UCI as having the potential to generate substantial pollutants. Treatment controls include, but are not limited to, detention basins, infiltration basins, wet ponds or wetlands, bio-swales, filtration devices/inserts at storm drain inlets, hydrodynamic separator systems, increased use of street sweepers, pervious pavement, native California plants and vegetation to minimize water usage, and climate controlled irrigation systems to minimize overflow. Treatment controls shall incorporate volumetric or flow-based design standards to mitigate (infiltrate, filter, or treat) storm water runoff, as appropriate.</li> </ul>			E&HS/CEP to confirm implementation by contractor
<b>Noise</b>			
<p><b>Noi-2A</b> Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve contractor specifications that include measures to reduce construction/demolition noise to the maximum extent feasible. These measures shall include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>i. Noise-generating construction activities occurring Monday through Friday shall be limited to the hours of 7:00 am to 7:00 pm, except during summer, winter, or spring break at which construction may occur at the times approved by UCI.</li> <li>ii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) off-campus land uses shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction occurring on Sundays or holidays.</li> <li>iii. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-campus residential housing shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time.</li> <li>iv. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise.</li> <li>v. Stationary construction noise sources such as generators, pumps or compressors shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible.</li> </ul>	D&CS / CEP	Prior to construction	D&CS to confirm incorporation in construction documents  CEP notification

<b>Mitigation Measure</b>	<b>Responsible Party</b>	<b>Mitigation Timing</b>	<b>Monitoring and Reporting Procedure</b>
vi. Laydown and construction vehicle staging areas shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible. vii. All neighboring land uses that would be subject to construction noise shall be informed at least two weeks prior to the start of each construction project, except in an emergency situation. viii. Loud construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large-scale grading operations occurring within 600 feet of a residence or an academic building shall not be scheduled during any finals week of classes. A finals schedule shall be provided to the construction contractor.			

CEP = Campus and Environmental Planning  
 EH&S = Environmental Health and Safety  
 PTS = Parking and Transportation Services

<sup>(1)</sup> “Design approval” is the approval of project design by the Regents (or their delegates, per Regents policy).