UNIVERSITY of CALIFORNIA IRVINE

December 2010

Final Tiered Initial Study/Mitigated Negative Declaration for the University Hills Area 10 Faculty and Staff Housing Project

State Clearinghouse Number: 2009061048

Lead Agency:

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

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REVISIONS TO THE DRAFT IS/MND

Revision to the Project Description

As noted in Appendix A, Public Review/Response to Comments, a draft Initial Study/Mitigated Negative Declaration (IS/MND) for the Irvine Campus Housing Authority University Hills Area 10 Faculty and Staff Housing project was circulated to the public, responsible and trustee agencies, and the State Clearinghouse for a 30-day review period from June 12, 2009 to July 13, 2009. Since that review, the University of California, Irvine has revised the project by reducing the number of housing units proposed for construction from 260 units comprised of detached for-sale homes, clusters of detached for-sale homes, and rental or for-sale attached homes on approximately 35 acres to approximately 96 detached for-sale homes on approximately 23 acres. All other aspects of the Project, with the exception of grading only the western portion of the original 35 acre site as depicted on Exhibit 4, remain as included in the Project Description, and analyzed in the draft IS/MND circulated for review. Additionally, the reduced project scope would result in less construction and operational related traffic and a shorter overall construction schedule.

Revision to Evaluation of Environmental Impacts Section

The draft IS/MND, circulated for a 30-day review from June 12, 2009 to July 13, 2009, included a greenhouse gas emissions analysis (see pages 43-46 and Appendix A). The analysis predicted that Project related traffic and area source emissions would generate operational related carbon dioxide emissions of 5,269 metric tons per year and construction related emissions of 419 metric tons per year. Following preparation of the IS/MND, in the context of a subsequent project, UCI indentified a quantitative greenhouse gas emissions threshold (3,000 metric tons per year) based on proposed guidance from the SCAQMD. Using this threshold, the project as originally proposed would have resulted in a significant operational related impact. No impact with respect to construction related emissions would occur.

The substantial reduction in the number of units proposed in the revised project as described above; however, in addition to sustainable development-related design features incorporated into the project, as noted in the Project Description and Air Quality sections of the IS/MND (see pages 7-8 and 43-46), would reduce the revised project's operational related greenhouse gas emissions to below a level of significance. Thus, no impacts would occur and no mitigation would be required.

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Exhibits

Tables

PROJECT INFORMATION

1. **Project title:**

   University Hills Area 10 Faculty & Staff Housing

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 S. Marks, AICP, Associate Planner
   949-824-8692

4. **Project location:**

   As shown on Exhibit 1, 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 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue, in the southeastern part of the campus, as shown on Exhibit 2.

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

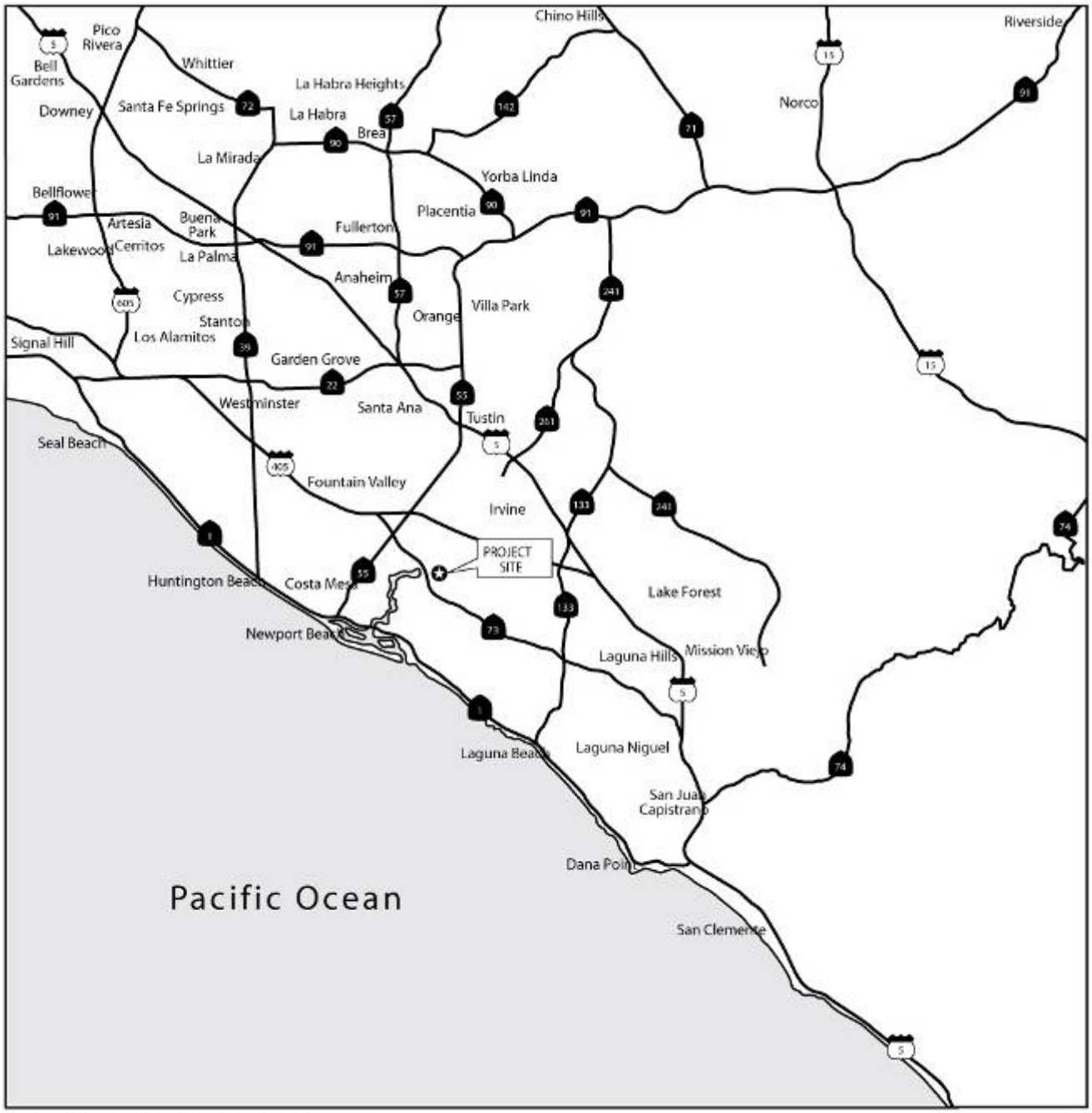
   University of California, Irvine
   Office of Campus & Environmental Planning
   750 University Tower
   Irvine, CA 92697-2325

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 Final EIR (State Clearinghouse No. 2006071024), certified by the Regents of the University of California, November 2007. Prepared by PBS&J, San Diego, California. 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: University of California, Irvine, 2006.

Not to Scale

Exhibit 1
Regional Location

Source: UCI, Office of Campus & Environmental Planning 12/30/08

Not to Scale

Exhibit 2
Vicinity Map/Aerial View

PROJECT DESCRIPTION AND LOCATION

1. Project Description:

The proposed project is referred to as *University Hills Area 10 Faculty and Staff Housing*. It is a development plan for approximately 260 homes, to be occupied by faculty and staff of the University of California, Irvine (UCI). The proposed project limits are depicted in Exhibit 3. The project will be developed by the Irvine Campus Housing Authority (ICHA), the non-profit organization created by the University of California (UC) Board of Regents to develop affordable faculty and staff housing at UCI.

Homes within the proposed project will consist of detached for-sale homes, clusters of detached for-sale homes, and rental or for-sale attached homes. A conceptual neighborhood site layout plan is provided in Exhibit 4. The precise mix and configuration of homes within the Area 10 development as depicted in Exhibit 4 is conceptual and will be finalized as part of the development process and determined by several factors including UCI faculty and staff recruiting needs and general economic conditions. The final development design constructed on the site would not substantially change the anticipated population within the project or the conclusions or standards that will be met to implement the project as described in the environmental analysis of the project contained herein.

The project site comprises approximately 35 acres (gross), located immediately southeast of the intersection of Gabrielino Drive and California Avenue, in UCI's East Campus Planning Sector (LRDP page 53). Development of the site is envisioned to include approximately 25 acres of neighborhoods and associated infrastructure such as roadways, on- and off-street parking, and recreational/open space amenities including an approximately one acre neighborhood park, conceptually illustrated on Exhibit 4. The proposed plan includes a minimum 50 foot wide landscape buffer along the southern edge of the development area adjacent to Bonita Canyon Drive. The remaining land area will consist of landscaped slopes and other common areas.

Homes and landscaping will be designed and constructed consistent with the scale, quality and character of other recently constructed neighborhoods in University Hills. Exterior finishes, colors

and roof materials will be consistent with the quality and character of other recently constructed homes in University Hills and the local off-campus community. Exhibit 5 provides conceptual elevations of the three proposed home types, given such parameters. Building heights would range from one to two stories for the single-family homes, and two to three stories for the attached homes. Building pads along the northern portion of the site would be approximately 15-30 feet higher in elevation than the adjacent segment of California Avenue, and about 30 feet higher than the nearest home sites that back onto California Avenue, along Murasaki Street. Building pad elevations in the lower half of the site would be similar in height to those in the adjacent University Hills neighborhood on the west side of Gabrielino and approximately 20-30 feet higher in elevation than the adjacent segment of Bonita Canyon Drive. In order to provide safe levels of illumination for pedestrians and motorists, street lights, building mounted fixtures, apartment parking area pole-lighting, and possibly walkway lighting will be part of the proposed development plan.

Homes and yards will be built with a number of energy-saving, waste reducing, water conserving and indoor air quality features. Examples of such features could include an overall energy efficiency that would exceed the previous standards of California Title 24 criteria by at least 25%, drought tolerant landscaping with reduced turf area and high efficiency irrigation systems, energy efficient lighting and appliances, low VOC paints and wood finishes, options for 'green flooring' materials, water efficient plumbing devices, and recycling of between 51 and 75% of all construction wastes.

Vehicle access to the project site will occur from the west, via a new street which connects to Gabrielino Drive, and from the east, via a new street connecting to Anteater Drive (see Exhibit 3). The vehicle entrances may include a landscaped median, as well a landscaped parkway located on either side of the roadway. An internal circulation network will be established consisting of streets, alleys, driveways, emergency vehicle access routes, and off-street bike and pedestrian linkages. Neighborhood-level streets will be designed with 36' of pavement and two 10' landscaped parkways. Garages and driveways would be included at each detached single family home and sufficient parking would be provided for all attached housing units. On street parking would be allowed on both sides of the internal streets serving the single family detached areas of the project. Appropriate landscaping will be provided on a project-wide and building level. Street trees and other landscape elements, consistent with the character of other areas of University Hills, will be installed as a part of the project road network. Islands and borders within the apartment parking areas would also be landscaped. The project will include pedestrian and bicycle connections to other areas of the campus, including the University Hills trail network, and

opportunities for future pedestrian links to future development of land immediately to the east, and to a City of Irvine trail recently completed along the northern edge of Bonita Canyon Drive. Although as stated above the precise mix and configuration of homes is conceptual, the two proposed vehicle access points would remain as depicted on Exhibit 3.

Construction is tentatively scheduled to begin in approximately late-2009 and is anticipated to occur over a period of three to six years. Specific project phasing will be influenced by UCI's faculty and staff recruitment needs and general economic conditions. A two-phase grading and development process is currently envisioned. The first would include a street connection to Gabrielino Drive and the proposed neighborhoods on the southern part of the site. The second phase would consist of development of the northern part of the site as well as the street connecting to Anteater Drive. The overall grading program would entail roughly 499,000 cubic yards (cy) of cut, and about 191,000 cy of fill. Excess materials would be stockpiled on vacant land adjacent the site to the east (see Exhibit 3), for use in future campus development. This material would be placed in a gradually sloping manner to drain toward Anteater Drive and would be at somewhat lower elevation than the northern portion of the Area 10 site, with elevations ranging from 30 to 40 feet above the adjacent segment of California Avenue. The stockpile would be hydroseeded with drought tolerant plants to provide ground covering to prevent erosion and improve the appearance.

The streets would be graded concurrent with on-site project grading. Dry utilities (electric, natural gas, and communications facilities) would be extended from the intersection of Gabrielino Drive and California Avenue, via underground conduit installed with the construction of the new neighborhood immediately west (University Hills Area 9-2). Sanitary sewer service would be provided through a connection to an existing ICHA sewer main line within Gabrielino Drive, or conveyed into an existing Irvine Ranch Water District (IRWD) sewer main stub located under Bonita Canyon Drive depending on the location within Area 10. Water supply would be provided from a new water line located in Gabrielino Drive.

Storm runoff from the upper portion of the development area would be collected on site and conveyed into a storm drain within California Avenue; this may require upsizing of the existing California Avenue storm drain or construction of a new, parallel drain as part of this project's infrastructure improvements. Runoff from the southwestern portion of the site would be collected in the storm drainage system in the project's streets and conveyed to a new 24-inch storm drain to be constructed beneath Bonita Canyon Drive, to connect to the Bonita Canyon box culvert on the southern side of that road. Runoff from the southeastern section of the site

would be collected by this project's local underground storm drain system and then conveyed into an existing 30-inch storm drain that flows beneath Bonita Canyon Drive into the box culvert on the south side of that road. In-line, structural stormwater filtration mechanisms will be provided within the project boundaries, to satisfy water quality control standards established in the countywide Drainage Area Master Plan.

2. Project Objectives:

- Expand the supply of affordable, on-campus housing for UCI faculty and staff.
- Provide housing resources to help fulfill the University's recruitment and retention objectives.
- Reduce commuter vehicle trips to and from the campus.
- Develop a new residential neighborhood integrated with the character and quality of the existing University Hills community.
- Incorporate appropriate landscaping elements, along with pedestrian and bicycle paths to connect to pedestrian and bicycle networks in the surrounding parts of the campus.

3. Surrounding land uses and environmental setting:

An aerial view of the local land use pattern is shown in Exhibit 2. Ground-level photographs of the project site and surroundings (taken in May 2009) are presented in Exhibits 7-9; a map showing photo locations is provided as Exhibit 6. The project site is undeveloped and covered with non-native grasses on rolling hillsides that generally slope to the south and contains no trees, rock outcroppings, water bodies, or other distinctive natural features. California Avenue borders the site on the north, with neighborhoods of single family homes immediately north of the street. A community park is located opposite the project site, at the northeast corner of California Avenue and Gabrielino Drive. A neighborhood of 72 single family homes, scheduled to be completed and occupied in 2009, is under construction on land immediately west of the site. A community center is under construction at the southwest corner of California Avenue and Gabrielino Drive.

Land to the east, extending to Anteater Drive, is of similar undeveloped character as the project site and is designated in the 2007 Long Range Development Plan (LRDP) (LRDP page 67) as Housing Reserve and Mixed-use/Neighborhood. Bonita Canyon Drive borders the site to the south and was recently widened to four lanes with a pedestrian/bicycle trail built along its northern right-of-way, adjacent the project site. On the opposite side of Bonita Canyon Drive in the City of Irvine, is the Mariners Church complex, which is bordered by Newport Coast Drive and Turtle Ridge Drive.

4. Discretionary approval authority and other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

The Regents of the University of California would consider the approval of the ground lease from The Regents to the Irvine Campus Housing Authority for the purpose of the implementation of the Area 10 Faculty and Staff Housing Project. Subsequent local campus review and approvals consistent with the terms of the ground lease would follow. After adoption of the IS/MND, no further environmental review would be required unless there are changes to the project or in the environment at the time of the subsequent approvals.

5. Consistency with the LRDP:

The 2007 LRDP accommodates a range of 1,250 to 1,700 faculty/staff housing units. As of the 2007-08 academic year there were 1,108 existing for-sale or rental faculty/staff housing units in University Hills. As stated on page 10, an additional 72 single family detached homes are currently under construction, which will bring the total on-campus faculty/staff housing inventory to 1,180. With approximately 260 additional units in the proposed project, the total potential number of housing units in University Hills would increase to 1,440. This would leave a balance of approximately 260 units that could be developed on campus in the future.

The project site is located entirely within the western edge of the approximately 54 acre Housing Reserve area, designated in the 2007 LRDP Land Use Plan. According to the LRDP (pages 61-64), the Housing Reserve is intended to accommodate future University housing needs. It is a flexible land use category that allows for a variety of residential facilities to meet the needs of students, faculty, staff, medical residents and interns, post-doctoral researchers, in accordance with campus priorities. This land use category also allows for residential-related uses, such as parking, child care, pre-school facilities, elementary schools, recreation facilities, community meeting space, classrooms and miscellaneous support uses. The proposed mix of for sale and rental homes for occupancy by faculty and staff is thus consistent with the LRDP Housing Reserve land use policies.

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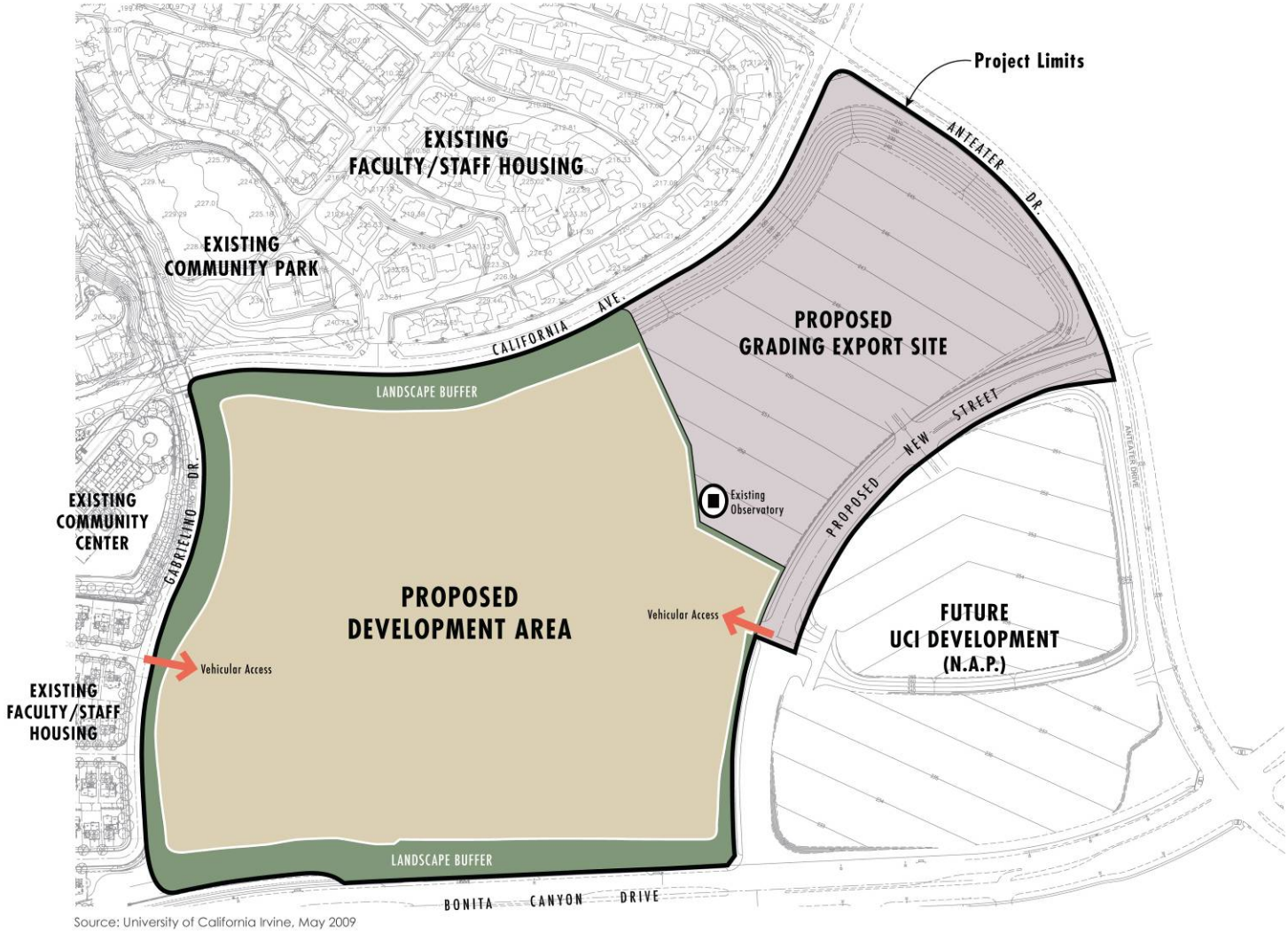

Source: University of California Irvine, May 2009

Not to Scale

Exhibit 3
Proposed Project Limits

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Source: University of California Irvine, May 2009

Notes: As stated in the Project Description (page 7), this exhibit represents a conceptual layout plan of the Area 10 neighborhood. The precise mix and configuration of homes will be finalized as part of the development process.

Not to Scale

Exhibit 4
Conceptual Neighborhood Layout Plan

Detached For-Sale
Home Concept

Cluster Detached For-Sale
Home Concept

For-Sale or Rent Attached
Home Concept

Exhibit 5
Conceptual Home Elevations

Source: Google Maps, Oct. 23, 2007

Not to Scale

Exhibit 6
Site Photographs Location Key Map

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1 *Towards project site, in center of view*

2 *Site is on the left, including slope area and beyond*

3 *Along California Avenue, away from the site*

Photos taken May 4, 2009

Exhibit 7
Site Photographs: Views 1-3

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4 *Grassland adjacent to (east of) project site*

5 *Grassland within project site*

6 *Southern edge of site, along Bonita Canyon Drive trail construction*

Photos taken May 4, 2009

Exhibit 8
Site Photographs: Views 4-6

7 *Continuation of view 6, along southern edge of site*

8 *New segment of Gabrielino Drive, immediately west of site*

9 *Toward adjacent faculty and staff housing, under construction*

Photos taken May 4, 2009

Exhibit 9
Site Photographs: Views 7-9

III

DETERMINATION

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.

Signature

6/11/09

Date

Printed Name

For

IV

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

Impact Questions and Responses

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

The 2007 Long Range Development Plan Final Environmental Impact Report (LRDP FEIR) did not identify any scenic vistas in this area or elsewhere on campus (LRDP FEIR VI page 4.1-6).

Discussion of Potential Project Impacts

Development of the project site and its surroundings with faculty and staff housing was assumed and evaluated in the LRDP FEIR (LRDP FEIR VI page 3-20). It was concluded that future development under the 2007 LRDP in the East Campus area would not result in significant aesthetic impacts (LRDP FEIR VI pages 4.1-8/9). The proposed project is consistent in terms of land use types and intensities with the Housing Reserve policies established by the LRDP; therefore, this project would not result in new or more significant impacts involving scenic views or the visual character and quality of the site and surroundings.

Mitigation Measure Aes-1a was adopted to ensure that future development in the adjacent South Campus Area would be sensitively designed to integrate in a visually compatible way with nearby neighborhoods through architectural and landscape treatments, and to retain a visual buffer along Bonita Canyon Drive. Although the project site is within the East Campus Planning Sector and not subject to MM Aes-1a, due to its location in the vicinity of Bonita Canyon Drive, the requirements of the measure have been incorporated into the project's design to minimize any potential visual impacts from off campus areas, including as previously described in the Project Description: a minimum 50 foot landscaped buffer along Bonita Canyon Drive, extensive project landscaping, and design character, scale, and massing similar to nearby neighborhoods in University Hills. Therefore, the proposed project would not result in an adverse effect on any scenic views or degrade the visual character and quality of the site and surroundings.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Aes-1a: Prior to project design approval for future projects that implement the 2007 LRDP and are located in the South Campus, in the vicinity of Bonita Canyon Drive, UCI shall ensure that the projects include design features to minimize visual impacts from off-campus areas. These design features shall include, but are not limited to, the following:

i. A 50-foot wide (minimum) landscaped buffer located along the edge of the campus along the project frontage;

ii. Building mass and/or proportions and exterior treatments and/or colors that are compatible with the surrounding development and visual character; and

iii. Project landscape design that reduces visual impacts and integrates the project into the visual landscape.

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

1.b) Scenic Resources: No Impact

Relevant Elements of Project

There are no trees, rock outcroppings, water features or any unique or visually distinct landscape features and no development features on this site. Bonita Canyon Drive is a major arterial within the City of Irvine arterial network and is not a state scenic highway.

Discussion of Potential Project Impacts

Since there are no scenic resources on site, this project would have no impact on such resources.

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

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

Relevant Elements of Project

Please refer to the response to item 1.a.

Discussion of Potential Project Impacts

Please refer to the response to item 1.a.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Aes-1a (Please refer to response to item 1.a.)

Significance Determination after LRDP EIR Mitigation Measures

Not applicable

Additional Project-Level Mitigation Measures

None required

Significance Determination after All Mitigation

Not applicable

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

Relevant Elements of Project

There are no lighting sources within the undeveloped project site. Nearby lighting sources include street lights and outdoor lighting fixtures within neighboring home sites. Ambient lighting levels, therefore, are low. As described in the project description (page 8) various outdoor lighting fixtures will be included in the project.

Discussion of Potential Project Impacts

All outdoor lighting will be designed in accordance with the restrictions set forth in LRDP FEIR mitigation measures Aes 2A and Aes-2B. Measure Aes-2A requires use of non-reflective materials for lighting fixtures, low-reflectance windows and other glazing and exterior surfaces that produce glare and will be ensured through project design specifications which indicate that non-reflective glass must be used on all exterior surfaces, and that no reflective surfaces, treatments or coatings will be permitted. Measure Aes-2B requires pre-construction approval of an outdoor lighting plan for each development project to require lighting design, shielding, orientation, and intensity limitations to prevent light spillage off site and avoid off-site glare impacts and will be ensured through UCI's routine plan check procedures. Compliance with these measures will ensure that this project does not produce significant light or glare impacts (LRDP FEIR VI page 4.1-16).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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

Not applicable

2. AIR 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
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) Result in greenhouse gas emissions that would hinder or delay the campus' ability to meet the UC climate change goals contained in the UC Policy on Sustainable Practices?		✓			

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

Relevant Elements of Project

The UCI campus is 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) that is administered by the South Coast Air Quality Management District (SCAQMD) to achieve compliance with state and national air quality standards. The AQMP is based on population projections which are developed by the Department of Finance (DOF) for California on a county by county basis. 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 page 4.2-11).

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. As the proposed project is consistent with LRDP's land use policies the project would not conflict with implementation of the 2007 AQMP. Therefore, no impacts would occur.

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

2.b) Air Quality Standards: Less Than Significant with Project Level Mitigation Incorporated

Relevant Elements of Project

The 2007 LRDP FEIR concluded that implementation of the LRDP could exceed SCAQMD's suggested significance thresholds for several criteria pollutants, including: CO, VOCs (volatile organic compounds), NOx (oxides of nitrogen), PM_{10} and $PM_{2.5}$ (LRDP FEIR VI page 4.2-14) This could occur as a result of multiple simultaneous construction projects on campus, and with long-term operational emissions from future projects. Construction activities would result in air pollutants generated in the form of fugitive dust and exhaust emissions (LRDP FEIR VI page 4.2-12. Operational emissions would be incremental and result from area, stationary, and vehicular sources (LRDP FEIR VI page 4.2-15).

Discussion of Potential Project Impacts

Consistent with LRDP FEIR mitigation measure Air-2A, an air quality assessment (see Appendix A) was prepared in conjunction with this environmental review to assess the project's anticipated construction related emissions. The assessment was prepared utilizing the latest software recommended by the California Air Resources Board (URBEMIS 2007 v. 9.2.4) and assumed implementation of all 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).

The assessment determined that the project's post-grading construction-period emissions would be below the SCAQMD significance thresholds for all criteria pollutants and that grading-related emissions would be below all

thresholds except for the daily NOx limit. Additional measures would be needed to reduce the level of NOx generated by combustion of diesel fuel used in the earth moving equipment. Such measures could include some combination of filtering devices, such as diesel oxidation catalysts, diesel particulate filters, as well as use of CARB Tier 3 or later certified equipment, and/or an extended or altered grading program to reduce the amount of earthwork per day. A project-specific mitigation measure has therefore been developed to ensure that final grading specifications will reduce the project's NOx emissions to less than 100 pounds/day.

The project's anticipated use of equipment which would result in emissions of Diesel Particulate Matter could create health effects for sensitive receptors in proximity to the project. As noted in Table 2 (page 5) within the Air Quality analysis, these effects could include aggravation of respiratory and cardio respiratory and cardio respiratory diseases, increased cough and chest discomfort, and lung damage. Compliance with measures Air-2B and Ps-1, included below, as well as required SCAQMD regulations, would reduce grading period and construction related air quality impacts, including emissions related to the use of diesel equipment and trucks to a less than significant level.

The air quality analysis completed in compliance with Air-2A also modeled emissions associated with the project's anticipated long-term operations (Appendix A pages 19-20). Results of this modeling determined that these emissions would be below SCAQMD thresholds and would not violate any air quality standards. Thus, impacts associated with the project's operational emissions would also be less than significant.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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.

Significance Determination after LRDP EIR Mitigation Measures

Less Than Significant

Additional Project-Level Mitigation Measures

Ps-1: Prior to initiating on-site construction, the UCI Office of Campus and Environmental Planning shall ensure that the project's construction emissions mitigation plan includes a grading plan which identifies the NOx control measures and the complete set of earthmoving equipment to be employed on a typical grading day along with calculations of daily NOx emissions to verify that total daily emissions would be below the SCAQMD threshold of 100 pounds/day. Emission reductions may be achieved through the use of any combination of CARB certified Tier 3 equipment, diesel oxidation catalysts, hourly limits on the operation of certain pieces of equipment, an extended or altered grading program, or other equivalently effective control measures.

Significance Determination after All Mitigation

Less Than Significant

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

Relevant Elements of Project

As noted in the 2007 LRDP FEIR (VI page 4.2-2), the air basin in which UCI is located is currently in non-attainment status with respect to California standards for ozone (O_3) and visibility-reducing particulates (PM_{10}), and non-attainment with respect to federal standards for ozone, carbon monoxide (CO), PM_{10} and $PM_{2.5}$.

Discussion of Potential Project Impacts

As discussed in the preceding response, the project would generate a variety of particulate and gaseous emissions during the construction phases that would contribute to local and regional levels of ozone and PM10, for which the air quality study for this project has determined that, with control measures required by LRDP mitigation measures Air-2A and Air-2B, construction emissions of these criteria pollutants would not exceed SCAQMD thresholds. It is concluded, therefore, that construction emissions would not have a cumulatively considerable effect with respect to state air quality standards for ozone or PM_{10} levels, or with respect to federal standards for ozone, CO, PM_{10} or $PM_{2.5}$. The air quality study completed for the project also determined that long-term operational emissions would be well below the SCAQMD thresholds for all criteria pollutants and would not, therefore, have a cumulatively considerable effect with respect to state air quality standards for ozone or PM_{10} levels, or with respect to federal standards for ozone, CO, PM_{10} or $PM_{2.5}$.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Air-2A and Air-2B, with respect to construction emissions (please refer to full text of these measures, in the preceding response to item 2b).

Significance Determination after LRDP EIR Mitigation Measures

Less Than Significant

Additional Project-Level Mitigation Measures

None required

Significance Determination after All Mitigation

Not applicable

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

Relevant Elements of Project

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. 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 dioxide impacts associated with vehicular traffic (LRDP FEIR VI pages 4.2-21/24).

Discussion of Potential Project Impacts

Construction activities would be short-term in nature and would not generate significant quantities of diesel exhaust or any other gases or particulates that would result in substantial and adverse pollutant concentrations near sensitive receptors. All construction control measures required by LRDP MM Air-2B and Ps-1 will be implemented by this project's contractors, to minimize total construction-related emissions. This will ensure that construction-site emissions are sufficiently minimized, through direct controls and/or contained within the active construction zone.

The proposed residential development and recreational amenities would not include any sources of toxic air contaminants or any sources of other pollutants that could result in substantial concentrations that could adversely affect neighboring residential neighborhoods. Project-related vehicular traffic would incrementally increase the number of trips and the volume of automotive exhausts on the surrounding street network. The traffic impact study prepared for this project (Appendix B) determined that no on or off-campus intersections are projected to operate at deficient levels of service due to project traffic; therefore, substantial concentrations of carbon monoxide associated with idling vehicles at local intersections would not result from this project.

The findings of the HRA, as addressed in the LRDP FEIR, indicate that although emissions would increase with the implementation of the 2007 LRDP, no significant impacts would occur. Further, the predicted carbon dioxide concentrations would be below established standards, resulting in less than significant impacts. Thus, the 2007 LRDP FEIR concluded that long-term implementation of the LRDP would have a less than significant impact involving exposure of sensitive receptors to substantial pollutant concentrations and no mitigation measures were deemed necessary (LRDP FEIR VI page 4.2-26).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Air-2B and Ps-1, with respect to construction emissions (please refer to full text of these measures, in the preceding response to item 2b.

Significance Determination after LRDP EIR Mitigation Measures

Less Than Significant

Additional Project-Level Mitigation Measures

None required

Significance Determination after All Mitigation

Not applicable

2.e) Objectionable Odors: Less Than Significant

Relevant Elements of Project

There are presently no odor-producing sources at the undeveloped project site and none in the vicinity.

Discussion of Potential Project Impacts

Proposed construction activities would not require any unique machinery, materials or processes that would generate unusual odors not typically associated with residential development. Proposed single family and apartment buildings and residential/recreation activities would normally not generate odors outside of the homes and the potential for adverse odors affecting a substantial number of people is considered insignificant. Vehicular exhausts from traffic to/from the developed site would generate the same kind of exhausts generated throughout the campus street network and throughout the country. Such exhausts are not recognized as significant sources of objectionable odors; therefore, no adverse odors due to vehicular exhaust are anticipated. The 2007 LRDP FEIR concluded that implementation of the LRDP would not create objectionable odors affecting a substantial number of people (LRDP FEIR VI page 4.2-27). This conclusion is based on the land use and transportation characteristics of the campus, which do not include significant sources of odors.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

None required

Significance Determination after LRDP EIR Mitigation Measures

Not applicable

Additional Project-Level Mitigation Measures

Not applicable

Significance Determination after All Mitigation

Not applicable

2.f) Greenhouse Gas Emissions: Project Impact Adequately Addressed in LRDP EIR

Relevant Elements of Project

Implementation of the 2007 LRDP, including the proposed project, would increase greenhouse gas (GHG) emissions associated with campus construction and operation, particularly from vehicle exhaust emissions. GHGs emitted as a result of expanded campus operations would include carbon dioxide, nitrous oxide, hydrofluorocarbons, ozone, and aerosols. Despite these additional emissions, implementation of the LRDP, including the proposed project, is not expected to generate enough GHGs to directly influence global climate change. Thus, combined with all other sources of GHGs, implementation of the 2007 LRDP would incrementally contribute to cumulative effects on global climate change resulting from the production of GHG emissions (LRDP FEIR VI pages 5-8/9).

At this time, the State of California has neither issued final guidance for evaluating climate change in CEQA documents nor established thresholds to determine whether GHG emissions from a given project would be significant. In January 2009, the Governor's Office of Planning and Research released Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions pursuant to SB 97. In response to the importance of this environmental issue and in anticipation of future State regulations, UC and UCI are taking steps to reduce global climate change impacts. UC is developing a long-term strategy for meeting the State of California's goal pursuant to the California Global Warming Solutions Act of 2006, (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, *et seq*., or AB 32), of reducing GHG emissions to 1990 levels by 2020. Additionally, Each UC campus, including UCI, is developing a climate action plan and is a member of the California Climate Action Registry (CCAR).

Further, UC has implemented the Policy on Sustainable Practices to provide specific scope, direction and expectations for implementing sustainable new capital projects, facility operations, and campus transportation resources. Section III of the Policy concerns Climate Protection Practices with an overall goal of reducing GHG

emissions while maintaining enrollment accessibility for every eligible student, enhancing research, promoting community service and operating campus facilities more efficiently. Consistent with this University Policy, UCI is a member of the CCAR and has completed its GHG inventory using the CCAR's protocol.

Discussion of Potential Project Impacts

The air quality analysis prepared for this project (See Appendix A) noted that the proposed project would contribute to long-term increases in GHGs as a result of vehicle traffic increases (mobile sources) and minor secondary fuel combustion emissions from space heating. Development occurring as a result of the proposed project would also result in secondary operational increases in GHG emissions as a result of electricity generation to meet project-related increases in energy demand. Short-term GHG emissions will also derive from the project's construction related activities.

The analysis found that worst case construction emissions would occur if Phase 2 and Roadway grading were to occur simultaneously. During project construction, the URBEMIS2007 computer model predicts that a peak activity day will generate the following CO2 emissions from a combination of these two activities:

Grading (Phase 2 and Roadway):	18,501 pounds/day
Construction and Trenching:	2,897 pounds/day
Coating and Paving (Phase 2 and Roadway):	2,982 pounds/day

The estimated annual GHG impact is estimated as follows:

Grading (12,764 lbs/day x 20 peak days/year) / 2,000 lbs/ ton:	185 tons/year
Construction (2,897 lbs/day x 100 peak days/year)/2,000 lbs/ton:	145 tons/year
Paving (2,982 lb/day x 60 peak days/year)/2,000 lbs/ton:	89 tons/year

As stated in the air quality analysis, in 2004 the statewide annual GHG inventory in CO2-equivalent levels (including all non-CO2 gases weighted by their thermal absorption potential) was 492,000,000 metric tons (541,000,000 short tons). Thus, the worst-case project construction impact of 419 tons/year represents approximately 0.00008 percent of the statewide burden. New daily operational CO2 emissions from project-related traffic and area source emissions are predicted to be 28,869 pounds per day. Annually, this translates into 5,269 tons per year, which represents approximately 0.001 percent of the most recent statewide inventory. As stated in the Project Description construction is tentatively scheduled to begin in approximately late-2009 and envisioned to be phased over a period of three to six years.

As stated above, there are currently no adopted thresholds of GHG emissions significance; climatic impacts are global in scale and any project-specific contribution would be less than significant. In the absence of any definitive thresholds of significance, the emphasis is to incorporate project design features that reduce energy consumption and reduce vehicular travel as much as is reasonably feasible. These features, as discussed previously in this Air Quality section which would reduce criteria air pollutants (those with ambient air quality standards), reduce trip generation or trip lengths, and promote energy conservation have been incorporated into the project to reduce GHG emissions. As noted in the project description, the project would include an overall energy efficiency that would exceed the standards of California Title 24 criteria by at least 25%, drought tolerant landscaping, energy efficient lighting and appliances, low VOC paints and wood finishes, options for 'green flooring' materials, water efficient plumbing devices, and recycling of between 51 and 75% of all construction wastes. All of these proposed energy and water saving features, and use of low-emissions coatings will reduce total GHG emissions from building construction and operations, compared to simply complying with the standards of California Title 24. An objective of the Project (page 9) is to provide faculty and staff housing in close proximity to their workplaces in order to reduce campus related vehicle traffic, a primary contributor of UCI's climate change impacts. These project design measures are consistent with the overall UC Policy on Sustainable Practices, UCI's individual emissions reduction strategy efforts, and the Sate of California Emission Reduction Strategy.

The following existing UCI programs which contribute to GHG emission reduction are expected to continue under implementation of the 2007 LRDP, including this project (LRDP FEIR page 5-9):

1. Provision of on-campus housing to reduce commuter trips to campus, also an objective of the project (See page 5-9).
2. Incorporation of native and drought tolerant landscaping.
3. Incorporation of UCI's Transportation Demand Management program to reduce single vehicle occupant use and reduce miles traveled.
4. Implement waste prevention and recycling programs.

Emission reduction strategies instituted under the UC Policy on Sustainable Practices and included in the 2007 LRDP FEIR include those related to green building design, clean energy, climate protection, transportation, operations, recycling and waste management, and environmentally preferable procurement (LRDP FEIR VI page 5-9 to 11). This policy is updated periodically. In anticipation of future modifications during the life of this IS/MND only excerpts of the policy are presented. The full text of the Policy can be viewed at http://www.ucop.edu/ucophome/coordrev/policy/PP032207ltr.pdf.

As noted above, implementation of the 2007 LRDP would also adhere to the GHG emission strategies currently set by the State of California, as well as regulations likely to be developed in the future. Categories of the State's current strategies for reducing GHG emissions include the following:

- Reduce emissions generated by vehicles
- Reduce emissions by reducing diesel vehicle idling
- Reduce hydrofluorocarbons
- Promote alternative fuels with lower emissions
- Promote hydrogen as alternative fuel
- Increase recycling
- Plant trees
- Build energy efficient buildings
- Purchase energy efficient appliances
- Promote jobs/housing balance to reduce commute length
- Purchase renewable energy

By implementing these actions, UCI is making reasonable, foreseeable progress on GHG emissions reductions. The proposed project's compliance with UC GHG emissions reduction policies would reduce its contribution to GHG emissions and global climate change further assisting California in meeting the goals of AB 32 and the Governor's Executive Order S 3 05. The proposed project would not result in new or substantially more severe significant sources of GHGs anticipated in the LRDP FEIR. The project would not conflict with AB 32 or UC policy adopted to meet State goals. Accordingly, the project would make a less-than- significant contribution to the cumulative impact of GHG emissions in California, and that contribution would not be cumulatively considerable. Project-related impacts involving generation of greenhouse gases and influence on climate change would be less than significant.

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

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 California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?					✓
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?					✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?					✓
e) Conflict with any applicable policies protecting biological resources?					✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?					✓

3.a) Species Impacts: Project Impact Adequately Addressed in LRDP EIR

Relevant Elements of Project

Situated on a dry landscape where cattle grazing occurred for many years, the project site, including the adjacent soil export area, as described in the project description is comprised of non-native grassland, ruderal (weedy) areas and open ground surfaces; there are no trees on site. This disturbed open landscape is suitable

habitat for the western burrowing owl, a declining raptor species classified by the California Department of Fish and Game as a "Species of Special Concern." No burrowing owls were observed in this area during the biological surveys conducted for the LRDP 2007 FEIR, and all previously identified burrow sites on campus had been developed. The LRDP FEIR determined that "It is unlikely that special status species may occur in the large Planning Area west of Anteater Drive due to the disturbed condition of the area. California gnatcatcher, grasshopper sparrow, burrowing owl, and rufous-crowned sparrow are not known to occur in this Planning Area and are not likely to occupy this portion of the campus, although these species could occasionally forage or disperse throughout this area (LRDP FEIR VI, pages 4.3-23/24). According to the 2007 LRDP FEIR, there is suitable habitat in the project area for southern tarplant, a plant species considered rare and threatened by the California Native Plant Society (page 4.3-37)

Discussion of Potential Project Impacts

The 2007 LRDP FEIR determined that impacts to southern tarplant would be considered less than significant (LRDP FEIR VI, page 4.3-37). Since there is no habitat on site that is suitable for rare, threatened or endangered species listed under federal and state endangered species acts, there would be no impact to such species. Although it is considered unlikely that project-related grading would destroy any burrows occupied by burrowing owls, LRDP FEIR MM Bio-2A will be implemented to ensure that no owls are impacted during the earth-moving activities.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Bio-2A Prior to initiating on-site construction for future projects in the east campus and west campus that implement the 2007 LRDP and that involve land clearing, grading, or similar land development activities adjacent to suitable habitat for the western burrowing owl (i.e., large open areas of non-native grassland, ruderal (weedy) areas, and scrub habitat), UCI shall retain a qualified biologist to conduct a burrowing owl survey of the respective habitat areas within 300 feet of the approved limits of disturbance. If occupied burrows are detected from the survey, then they shall not be disturbed during the nesting season (February 1 through August 31) until the biologist verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows. When destruction of occupied burrows is unavoidable, relocation burrows shall be created (by installing artificial burrows) at a ratio of 1:1 in suitable foraging habitat. The biologist shall document all findings and results in a report submitted to UCI.

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

3.b) Riparian Habitat: No Impact

Relevant Elements of Project

As noted in the response to item 3.a, the project site is a disturbed landscape dominated by non-native grassland, ruderal vegetation and bare ground surfaces. A remnant piece of an ephemeral drainage swale occurs in the southeastern part of the site, lightly vegetated with scrub elements that do not comprise a riparian community (2007 LRDP FEIR Vi page 4.3-16). Biological surveys conducted for the 2007 LRDP FEIR VI (page 4.3-24) determined that none of the drainage swales in this area of the East Campus Planning Sector exhibit sufficient evidence of flow, such as bed, bank, and ordinary high water mark, to be considered jurisdictional by the California Department of Fish and Game. No portion of this site is identified as a sensitive natural community in any local, state or federal plans, policies or regulations.

Discussion of Potential Project Impacts

Since there are no riparian resources or any other sensitive natural communities within or near the proposed grading footprint, this project would have no impact on such resources.

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

3.c) Federally Protected Wetlands: No Impact

Relevant Elements of Project

The remnant drainage swale in the southeastern part of the site, as described in the previous response, only carries surface flows after rainwater drains from upland areas. Biological surveys conducted for the 2007 LRDP FEIR (VI page 4.3-24) determined that none of the drainage swales in this Planning Area exhibit sufficient evidence of flow, such as bed, bank, and ordinary high water mark, to be considered jurisdictional wetlands regulated under Section 404 of the Clean Water Act.

Discussion of Potential Project Impacts

Since there are no federal wetlands features within or adjacent to the proposed grading footprint, this project would have no effect on such resources.

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

3.d) Wildlife Corridors: No Impact

Relevant Elements of Project

The 2007 LRDP FEIR determined that because the project area is bordered by off campus mixed use and residential areas there are limited wildlife movement corridors in the vicinity. The project site is also greater than 0.50 mile from drainage culverts that were placed under the SR-73 Toll Road in part to support wildlife movement between the Bonita Canyon Wetland areas, San Joaquin Hills, and the Natural Community

Conservation Plan Reserve System lands on campus (LRDP FEIR VI page 4.3-48).

Discussion of Potential Project Impacts

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

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

3.e) Conflict with Applicable Policies: No Impact

Relevant Elements of Project

There are no LRDP or other state or federal policies for protection of biological resources that apply to the East Campus, Southern Area.

Discussion of Potential Project Impacts

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

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

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

Relevant Elements of Project

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

Discussion of Potential Project Impacts

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

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

4. CULTURAL 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) 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 undeveloped 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, is located in the eastern section of the UCI campus off California Avenue between Campus Drive and Anteater Way, hundreds of feet away from the project site.

Discussion of Potential Project Impacts

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

Applicable LRDP EIR Mitigation Measures Incorporated in Project

None required

Significance Determination after LRDP EIR Mitigation Measures

No impact

Additional Project-Level Mitigation Measures

No mitigation measures are required

Significance Determination after All Mitigation

No impact

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

Relevant Elements of Project

Recorded prehistoric resources located within the UCI campus are summarized in Volume I, Table 4.4-1 of the 2007 LRDP FEIR. Two archaeological sites have been discovered and recorded in the East Campus. Data and artifacts from both have been recovered and no further archaeological testing is required. To date, there has been no evidence of any archaeological resources within or adjacent to the project limits. There is some possibility, however, that unknown archaeological remains could occur beneath the ground surface (LRDP FEIR VI page 4.4-4).

Discussion of Potential Project Impacts

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 (see below) would avoid significant impacts to archaeological resources (LRDP FEIR VI page 4.4-14).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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 archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological 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 archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If an

archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

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

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

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

Relevant Elements of Project

Paleontological investigations conducted for the 1989 LRDP determined that the Topanga Formation geologic units under the campus are considered to be of high paleontologic sensitivity for vertebrate and invertebrate fossils. The assessment noted that one of the most unique features on the campus is the micro-paleontological material found along Bonita Canyon Drive, consisting of microscopic fossils of single-celled animals that inhabited the sea floor. The fossils contained in these exposures are of regional and interregional significance, because they provide the basis for comparisons between the depositional histories of various parts of the Los Angeles Basin (LRDP FEIR VI page 4.4-19).

Discussion of Potential Project Impacts

Given the geological setting and recognized high sensitivity for vertebrate and invertebrate fossils in this area of the campus, development of the proposed project might expose fossil remains due to excavation operations (trenching and/or tunneling) which cut into geologic formations. According to the 2007 LRDP FEIR, any project involving excavation into either the Topanga Formation or the terrace deposits could have an adverse effect on paleontological resources. Implementation of LRDP mitigation measures Cul-4A to Cul-4C will avoid significant

impacts to paleontological resources (LRDP FEIR VI pages 4.4-19/20).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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.

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

4.d) Human Remains: No Impact

Relevant Elements of Project

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. Since human remains are often found buried beneath the ground surface, there is a possibility that such remains could occur somewhere on site.

Discussion of Potential Project Impacts

Earth moving activities might result in the uncovering and possibly disturbance of human remains. If human remains are 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.

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

No impact

5. GEOLOGY AND SOILS

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) 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?					✓

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

Relevant Elements of Project

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 ¼ mile to the east 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 RUZ is hundreds of feet beyond this project site and does not extend west of Anteater Road.

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 1997 and 1998 Seismic Hazard Zones Maps prepared by the California Geological Survey indicate that slopes in the South Campus area are not susceptible to potential earthquake-induced landslides (LRDP FEIR VI page 4.5-9).

Discussion of Potential Project Impacts

Since the project site is not located within the RUZ or in the immediate vicinity of any known active faults, this project would have 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. People residing in the proposed residential development could be exposed to these hazards. However, grading, foundation, and building structure elements would be designed to meet or exceed the California Building Code 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 will 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 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 page 5.5-9).

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

5.b) Soil Erosion: Less Than Significant Impact

Relevant Elements of Project

A majority of the undeveloped site and proposed off-site soil stockpile area retain native topsoil, due to lack of ground disturbances that would have removed it. Near Gabrielino Drive and along the California Avenue frontage, native topsoils have been removed due to street and slope construction activities. The slope embankment along California Avenue is landscaped, which provides some erosion control benefits. There is little sign of surficial erosion on this sloping terrain, most of which is covered by non-native grassland.

Discussion of Potential Project Impacts

All of the remaining topsoil would be removed, and other areas of artificial fill and recent disturbance would be excavated, as part of the proposed grading plan. Topsoil materials may be retained and mixed into engineered materials placed on site, and may also end up in the stockpile area, where excess graded materials will be stored for later application in development projects adjacent to this project. Site grading and construction activities must comply with the CBC and the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities which requires that construction Best Management Practices (BMPs) be implemented to prevent soil erosion and sedimentation generation. 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).

Within the completed development site, impervious surfaces (roofs, streets, driveways, sidewalks, patios and other paved areas) will replace open grassland in many areas, while manufactured slopes and yard areas will be landscaped. A storm drainage system will be constructed to collect runoff from streets and building areas, for

conveyance to local and regional storm drainage networks, thus reducing surface runoff that could affect natural topsoil on surrounding land. As a result, erosion potential would be significantly reduced and less than significant impacts involving soil erosion are anticipated.

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

5.c) Unstable Soil: Less Than Significant Impact

Relevant Elements of Project

The 2007 LRDP FEIR indicates there are loose or compressible soils in undeveloped areas with deposits of alluvium or slope wash/colluvium in the South Campus bordering Bonita Canyon Drive. Since the project site is immediately east of the South Campus area, on similar gently sloping grassland, a similar potential for loose or compressible soils is anticipated. Subsidence (settling of surface materials due to weakening of underlying support materials, usually due to withdrawal of ground water, oil or gas) has not been detected anywhere on campus and is not expected to occur within the project site (LRDP FEIR VI page 4.5.-5).

There are several knolls and numerous slopes of varying angles that occur on this site. Slopes steeper than 25 degrees (approximately 2:1 [horizontal to vertical]) are more susceptible to instability (LRDP FEIR VI page 5.5-12). Approximately 7.4% of the site contains slopes steeper than 25%; these are mainly along the California Avenue and Gabrielino Drive frontages.

Discussion of Potential Project Impacts

If loose or compressible soil materials occur on site, they may be subject to settlement under increased loads, or due to an increase in moisture content from site irrigation or changes in drainage conditions. Typical measures to treat such unstable materials involve removal and replacement with properly compacted fill, compaction

grouting, or deep dynamic compaction. The proposed grading plan would reconfigure the topography of the entire site, including removal of existing unstable materials and steep slope areas and recontouring with engineered materials that meet CBC grading standards for stability and safety. As stated previously, a site-specific geotechnical investigation will be conducted and any recommendations therein implemented, in accordance with the CBC. As noted in the LRDP FEIR, impacts associated with unstable materials or steep slopes would be less than significant (LRDP FEIR VI page 4.5-12).

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

5.d) Expansive Soil: Less Than Significant Impact

Relevant Elements of Project

Expansive topsoils 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 8 to 12% swell with an underlying material generally consisting of non-expansive to moderately expansive terrace deposits with a swell ranging from 0 to 8%.

Discussion of Potential Project Impacts

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. Due to its location adjacent Bonita Canyon Drive, as stated in the response to 5c, it is anticipated that the project site also contains loose or compressible soil. The geotechnical investigations and soils testing to be conducted as part of the routine final design process will determine the extent of any expansive or compressible soils that occur on the site. Implementation of the

geotechnical investigation and compliance with the CBC would reduce potential impacts to less than significant (LRDP FEIR VI pages 4.5-12/13).

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

Less than significant

5.e) Alternative Waste Disposal Systems: No Impact

Relevant Elements of Project

All wastewater generated by the proposed project would be conveyed vial 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

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) 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

Implementation of the 2007 LRDP would involve the continued transport, use, and disposal of hazardous material (LRDP FEIR VI page 4.6-21). Temporary and short-term related 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 the long-term, 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.

Discussion of Potential Project Impacts

Contractors 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 homes 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 & 30).

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

Less than significant

6.c) Proximity to Schools: No Impact

Relevant Elements of Project

Three schools are located within one-quarter mile of the proposed project: The Tarbut v' Torah School, Vista Verde Elementary 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.

Discussion of Potential Project Impacts

Routine construction controls, as described in the preceding response, along with existing campus programs, practices, and procedures will ensure that there are no significant accidental releases of hazardous substances that could potentially threaten any local schools (LRDP FEIR VI pages 4.6-31/32). No impacts to schools are anticipated.

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

No impact

6.d) Hazardous Materials Sites: No Impact

Relevant Elements of Project

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 recorded hazardous materials site is located on the North Campus Corporation Yard, more than one mile away from the project site to the north. 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). Further, review of the State Department of Toxic Substance Control's latest

"Cortese List", which is a record compilation of known hazardous waste sites compiled pursuant to California Government Code Section 65962.5, confirms that there are no reported hazardous material sites within the project site.

Discussion of Potential Project Impacts

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.

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

No impact

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

Relevant Elements of Project

The proposed project site is within the airport planning area for the John Wayne Airport (JWA), a public facility located approximately 1.5 miles to the southeast. The Airport Land Use Commission (Commission) for Orange County defined the planning area for JWA as all areas within the 60 db CNEL Noise Contour. There are no private airstrips in the vicinity of the UCI campus.

Discussion of Potential Project Impacts

The Commission 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 in the vicinity of 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).

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

Less than significant

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

Relevant Elements of Project

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

Discussion of Potential Project Impacts

Construction-related lane or road closures are not anticipated, although there may be some limited work within the rights-of-way of California Avenue, Gabrielino Road and possibly Bonita Canyon Road, for installation of utility line connections. Such work would not obstruct access by any emergency vehicles to the project site or nearby residential areas; however, if temporary closure of a travel lane is deemed necessary by a contractor, compliance with LRDP Mitigation Measure Haz-6A will 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 land and would not interfere with the ability of local residents to evacuate along California Avenue or Gabrielino Road. Further, operational aspects of the proposed residential development would not interfere with an adopted emergency response plan or emergency evacuation plan.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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.

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

6.h) Wildland Fires: Less Than Significant Impact

Relevant Elements of Project

As stated in the project description, the proposed project site is located next to undeveloped campus property covered with non-native grasses to the east. Existing neighborhoods within the University Hills community are located adjacent to the project site to the north, the Area 9/2 Housing Project is under construction directly to the west, and a church within the City of Irvine is located to the south across Bonita Canyon Drive. As noted in the LRDP FEIR, grasses are considered to be a flashy fuel which can easily ignite during dry conditions. The moisture content of grasses is largely dependent on weather conditions; typically, grasses will gain and lose moisture in a matter of hours. For this reason, under dry conditions grasses can be prone to catching fire year-round. Grass fires are typically low-intensity fires and tend to extinguish quickly And though while they are usually quickly contained and do not expand into large scale wildfires, they can still pose a risk to life or property (LRDP FEIR VI page 4.6-35).

Discussion of Potential Project Impacts

Development of the project site could expose proposed homes and residents to potential risks associated with fires on the open grassland to the east, until such time as that land is developed as designated in the LRDP Land Use Plan. The LRDP FEIR indicates that development within the Housing Reserve must follow current OCFA fuel modification zone guidelines, which include graduated zones of fuel reduction. Therefore, with these fire safety measures in place, hazards from potential grassland fires would be less than significant (LRDP FEIR VI page 4.6-36).

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

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

There are no water bodies, detention or retention basins, stream courses, wetlands or other surface drainage and water storage features on the undeveloped site. There is no waste discharge of any sort occurring on site at present. Runoff currently consists of overland flows during rainstorms, and the water quality is comprised of chemical elements present in rain water, along with sediments and vegetation residues from the grassland-covered landscape.

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). Site development would generate new sources of urban runoff from the project's streets, driveways, parking areas, roofs, patios and landscaped areas.

As stated in the project description, runoff from the residential sites would be directed into a local storm drainage network within the project's internal streets. 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). Runoff from the manufactured slope that descends to Bonita Canyon Drive on the southern edge of the project would be dissipated through vegetative cover planted on the slope, prior to flowing across the sidewalk adjacent the roadway and into the street drainage system and also eventually reaching the Bay.

Applicable water quality standards developed by the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Board (RWQCB) for storm water are set forth in applicable storm water permits (which also serve as waste discharge requirements), including the General Construction Storm Water Permit applicable to this project, which would control pollutants contained in runoff generated from campus properties (LRDP FEIR VI page 4.17-19).

Site development, as proposed, would generate new sources of urban runoff from streets, driveways, parking areas, roofs, patios and landscaped slope areas. Runoff from the residential sites would flow into a local storm drainage network within the internal streets, while runoff from the manufactured slope that descends to Bonita Canyon Drive would be dissipated through vegetation cover, before flowing into the storm drainage system.

Discussion of Potential Impacts

Potential water quality impacts during the construction phases for this project would be of 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 impact 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. Depending on the location of the construction site at its discharges, pollutants could drain to one or more of the receiving waters identified for the UCI campus (LRDP FEIR VI page 4.7-21).

Landscaping when installed could also result in water quality impacts due to the use of fertilizers. If fertilizers are discharged, they could adversely affect aquatic plants and animals downstream in receiving waters through a reduction in oxygen levels and an increase in eutrophication. Eutrophication is 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, including the transport and placement of excess soil materials at the off-site soil stockpile site, will 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 new residential wastewater that would be generated by the new homes and apartments will be discharged into a local sanitary sewer system that will convey 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 will 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 storm water permits described above which serve to control pollutants in runoff from campus no impact would occur with regard to violation of storm water standards or waste discharge requirements and 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).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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.

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

7.b) Groundwater: No Impact

Relevant Elements of the Project

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

Discussion of Potential Impacts

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).

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

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

Relevant Elements of the Project

There are no rivers or streams on site. A majority of the undeveloped site slopes southward, and overland flows that are not absorbed into the ground or by surface vegetation end up in the Bonita Canyon Drive storm drain system. The northern site perimeter slopes toward and drains onto California Avenue.

Discussion of Potential Impacts

Although the project site's topography will be reconfigured to create building pads, streets and manufactured slopes existing drainage patterns will generally be retained. Features that control run-off volumes and durations to minimize or eliminate erosion and siltation will be depicted on final construction plans. All common area slopes will be fully landscaped and include terrace drains that tie into the project's storm drain system. Energy

dissipaters and other control devices will be incorporated as needed. Drainage control measures will be implemented during rough grading to ensure that discharge volumes and durations are controlled on newly-graded channels. Strategies such as desiltation basins, rip-rap, sandbag chevrons, straw waddles, etc. will be incorporated into the project's Storm Water Pollution Prevention Plan (SWPPP) both during and after grading. Potential erosion or siltation impacts during and following construction will be reduced to less than significant levels through compliance with the conditions of the General Construction Storm Water Permit and MMs Hyd-2A and 2B, as described in the response to item 7.a.

Applicable LRDP Measures Incorporated in the Project

Hyd-2A and Hyd-2B, as listed in the response to 7.a.

Significance Determination after LRDP EIR Mitigation Measures

Less than significant

Additional Project-Level Mitigation Measures

None required

Significance Determination After All Mitigation

Not applicable

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

Relevant Elements of the Project

As stated above, flows not absorbed into the ground or vegetation would be conveyed to the Bonita Canyon Drive or California Avenue storm drain system. There are no rivers or streams on site.

Discussion of Potential Impacts

A substantial portion of the currently undeveloped site will be converted to developed surfaces, including impervious surfaces (rooftops, driveways, streets, etc.) that will increase the rate and amount of runoff. 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 preliminary drainage study (see Appendix C) prepared in compliance with Hyd-1A determined that the proposed storm drain system would not discharge volumes of water greater than the off-campus system's capacity to receive and accommodate such flows. The drainage system will be built to maintain or reduce the peak runoff from 25-year and 100-year storm events, which by design will manage the 10-year storm event referred to in Hyd-1A (listed below). Additional

hydrological analysis will be conducted as part of the final design process to specify all primary and secondary 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 the storm drainage networks in California Avenue and Bonita Canyon Drive. No additional mitigation measures would be required to provide an adequate level of protection from flooding.

Applicable LRDP Measures Incorporated in the Project

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.

Significance Determination after LRDP EIR Mitigation Measures

Less than significant

Additional Project-Level Mitigation Measures

None required

Significance Determination After All Mitigation

Not applicable

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

Relevant Elements of the Project

There are no storm drainage facilities within the presently undeveloped project site, and site runoff currently travels by overland flow to the California Avenue and Bonita Canyon Drive storm drainage systems.

Discussion of Potential Impacts

As stated in the project description, construction of the project would include stormwater management infrastructure system improvements, including either upsizing the existing California Avenue storm drain or constructing a new, parallel drain, and a new 24-inch storm drain bored beneath Bonita Canyon Drive connecting to an existing box-culvert. Preliminary engineering evaluations (see Appendix C) have indicated that runoff from the developed site would be accommodated by the Bonita Canyon culvert.

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

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

Relevant Elements of the Project

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

Discussion of Potential Impacts

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

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

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

Relevant Elements of the Project

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

Discussion of Potential Impacts

Since there are no 100-year flood hazard areas on the UCI campus, this housing project would have no impact involving placement 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).

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

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

Relevant Elements of the Project

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

Discussion of Potential Impacts

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).

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

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

Relevant Elements of the Project

There are no levees or dams anywhere on or in the vicinity of the UCI campus.

Discussion of Potential Impacts

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 as a result 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).

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

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

Relevant Elements of the Project

A tsunami is the secondary effect of an earthquake which occurs as waves are generated in the ocean at a point near the earthquake source and may appear as a rapidly rising or falling tide, a series of breaking waves, or a bore. 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 occur near the campus. There are no major hillsides where mudflow conditions could occur (LRDP FEIR VI pages 4.7-24/25).

Discussion of Potential Impacts

As the UCI campus is over 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 within 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?					✓
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 proposed project would be located within the western portion of an area, designated in the 2007 LRDP Land Use Plan as Housing Reserve and is bordered by a portion of the University Hills residential community, which includes existing single family detached residences, a park to the north, and a neighborhood of single family homes under construction to the west. Undeveloped land, also designated in the LRDP as Housing Reserve, lies between this site and Anteater Road. Circulation and infrastructure systems, also described in the project description, to serve the project have been built or are under construction.

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; only local streets connecting to the existing street network would be constructed. No existing trails connecting to neighboring parts of University Hills would be eliminated. The proposed project would complement the existing community by introducing a consistent and similarly designed residential development within the expanding fabric of the established University Hills community. 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

Significance Determination after All Mitigation

No impact

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

Relevant Elements of Project

As stated above, the subject site is entirely within the Housing Reserve area of the UCI campus, as designated in the 2007 LRDP Land Use Plan for development of a variety of housing types to meet the needs of students, faculty and staff, along with related residential support facilities. 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. There are no LRDP policies for this area that were adopted with the intent of avoiding or mitigating an environmental effect (LRDP FEIR VI page 4.8-15).

Discussion of Potential Project Impacts

Since this land is not governed by any policies or regulations adopted to avoid or mitigate an environmental effect, there would be no impact. The proposed housing project is consistent with the 2007 LRDP land use plan.

Further, UCI is not subject to municipal regulations such as the City of Irvine General Plan.

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

No impact

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

Relevant Elements of Project

The East Campus, including the project site, is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other kind of land conservation plan.

Discussion of Potential Project Impacts

Because this part of the campus is not located within any habitat or open space conservation plans, no conflict will result.

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

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

Relevant Elements of Project

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

Discussion of Potential Project Impacts

The proposed project is being designed as a compatible extension of the University Hills community and it would not create other land use impacts.

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

No impact

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?		✓			

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
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: Project Impact Adequately Addressed in LRDP EIR

Relevant Elements of Project

As discussed in the LRDP FEIR (VI page 4.9-24), 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. These criteria indicate that single family residential uses are normally acceptable in areas with exterior noise levels below 60 dBA CNEL and multi-family residential uses in areas below 65 dBA.

The primary noise source that would affect future residents within the proposed single family and multi-family homes would be vehicular traffic noise (LRDP FEIR VI page 4.9-24). Other, minor noise sources in this area include outdoor activities at nearby single family detached residences and the community park at the northeast corner of Gabrielino and California Avenue, and parking lot noises and large outdoor events held at the Mariners Church complex on the south side of Bonita Canyon Road. A community building and limited, passive outdoor recreation spaces are planned for development at the southwest corner of Gabrielino Drive and California Avenue; this would not be considered to be a major noise source.

Discussion of Potential Project Impacts

The noise study prepared for the 2007 LRDP FEIR determined that long-term noise levels along Bonita Canyon Drive would reach approximately 74 dBA, above the levels considered acceptable for single family or multi family residential uses, without noise attenuation features. The projected 60 dBA and 65 dBA CNEL contours occur at 205 feet and 125 feet respectively, from the centerline of Bonita Canyon Drive (LRDP FEIR VI page 4.9-18). As such, the southernmost homes proposed at a distance of less than 205 feet away from the street's centerline, would lie within the 60 dBA CNEL noise countour line.

Noise mitigation in association with any single family homes located within the 60 dBA CNEL contour adjacent Bonita Canyon Drive would be accomplished by the project's incorporation of noise walls or other solid barriers. These design practices will implement the performance standards set forth in LRDP FEIR MM Noi-1A, included below, which will reduce noise impacts associated with Bonita Canyon Drive to less than significant.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Noi-1A: Prior to project design approval for future projects that implement the 2007 LRDP and include noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), UCI shall ensure that the project design will adhere to the following state noise standards: 60 dBA CNEL (single-family campus housing); 65 dBA CNEL (multi-family campus housing, dormitories, lodging); and 70 dBA CNEL (classrooms, libraries, clinical facilities). Applicable project design features may include, but are not limited to, the following:

i. Specific window treatments, such as dual glazing, and mechanical ventilation when the 45 dBA CNEL limit within habitable rooms and the 50 dBA CNEL limit within classrooms can only be achieved with a closed window condition.

ii. Setbacks; orientation of usable outdoor living spaces, such as balconies, patios, and common areas, away from roadways; and/or landscaped earthen berms, noise walls, or other solid barriers.

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

9.b) Groundborne Noise: No Impact

Relevant Elements of Project

As stated in the project description, the proposed project would include a mix of housing types, passive recreational/open space amenities, streets, utility connections, and trails, none of which would generate groundborne noise or vibration. There are no sources of groundborne noise or vibration in the vicinity of the project site. The adjacent segment of Bonita Canyon Drive is not a designated truck route in the City of Irvine and would not, therefore, produce any significant groundborne vibration.

Discussion of Potential Project Impacts

Construction of the proposed project should not require the use of any equipment that would generate significant groundborne noise or vibrations. The project does not require demolition of existing structures and conventional earth moving equipment is expected to be sufficient to prepare the site for development. None of the proposed residential or recreational land uses would produce groundborne vibrations or groundborne noise levels. Further, the project site is located within an area of the campus which consists of residential uses and undeveloped grassland which do not produce groundborne vibrations or groundborne noise. Because no element of the project and no activities surrounding the project site produce groundborne vibrations or groundborne noise, no person would be exposed to such impacts.

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

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

Relevant Elements of Project

As stated in the project description, the proposed project site consists of a variety of housing types bordered by single family detached residences and a park to the north, single family homes under construction to the west and undeveloped land between the site and Anteater Road. Common activities associated with residential uses occurring within private yards and patios, street traffic, and recreational activities at the open space area would introduce additional permanent noise sources into this residential area. Implementation of the 2007 LRDP would 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 driveways (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. Noise generating outdoor events hosted at the University Hills homes could potentially result in a public nuisance, particularly if they involve significant noise late at night or early in the morning, such events would be addressed by the campus police. Recreational noise sources within the project's open space area would typically consist of passive activities such as picnics, walking, sitting, children at play, walking dogs, etc. Due to limited vehicular parking, the area would not be conducive for large group events; therefore, no significant impacts involving large group recreational events are expected. Permanent noise impacts due to ordinary residential and recreational activities would not be significant.

As stated in the response to 9.a, the 2007 LRDP FEIR analysis of long-term noise impacts determined that traffic generated by on campus land uses would not have a cumulatively considerable impact with respect to traffic noise levels along Bonita Canyon Road (LRDP FEIR VI page 4.9-39). That analysis accounted for the traffic that would be generated throughout the Housing Reserve area designated in the Land Use Element of the LRDP. Since this project is consistent with the land use intensity policies for the Housing Reserve, 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

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

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

Relevant Elements of Project

Construction of the project would cause a temporary increase in ambient noise levels, and once inhabited, the proposed residential and recreational uses would generate periodic outdoor noise that does not presently occur on the undeveloped site.

Discussion of Potential Project Impacts

Conventional construction techniques and equipment typically associated with residential construction such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous trucks are expected to be sufficient for this project. 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 existing homes. 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 90 dBA at 50 feet from the source. Noise from construction equipment propagates as a point source which decays at a rate of 6 dB per doubling of distance from the source (assuming no ground interaction). For example, noise from construction equipment generating a 90 dBA noise level at 50 feet could exceed 75 dBA at a distance of 300 feet from the source (LRDP FEIR VI pages 4.9-31/32). This noise level is substantially higher than ambient levels and would thus be heard and possibly experienced as loud at the homes nearest to active construction areas, especially those existing homes closest to Gabrielino Drive and California Avenue.

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, will 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 will 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 activities at the homes and apartment areas will occur; however, these are considered minor noise sources and would not result in a substantial increase in ambient noise levels.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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 jack hammering, 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.

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

9.e) Public Airport Noise: Less Than Significant

Relevant Elements of Project

The proposed project site is located approximately 1.5 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 60 db CNEL Noise Contour.

Discussion of Potential Project Impacts

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.

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

9.f) Private Airport Noise: No Impact

Relevant Elements of Project

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

Discussion of Potential Project Impacts

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

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

10. POPULATION AND HOUSING

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) 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 stated in the project description, the proposed project would be located entirely within land designated as Housing Reserve and would accommodate growth planned under the 2007 LRDP for dwelling units on the main campus. Circulation and infrastructure systems, including wet and dry utilities within the existing street system, 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).

Discussion of Potential Project Impacts

Based on the 2000 Census and California Department of Finance, the average number of persons per household in Irvine is 3.0, which is higher than the state wide average of 2.87. If this same household size is applied to the proposed project, it could accommodate approximately 780 people. This number represents an increase in the City of Irvine's 2008 population of approximately 0.4 percent.[1] This level of population growth as detailed in the

[1] January 2008 estimate by California Department of Finance was 209,806.

project description is consistent with population growth anticipated in the 2007 LRDP, which was circulated for public review to nearby jurisdictions and the Southern California Association of Governments. Since the population growth induced by this project was considered in the 2007 LRDP, which was determined to not directly induce substantial population growth in the area and have less than significant impacts, its direct effect on population generation would be less than significant (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, no substantial changes to off-campus utilities provided to UCI by other entities are anticipated in order 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.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

Less than significant

10.b-c) Replacement Housing: No Impact

Relevant Elements of Project

The proposed project site is currently vacant and has not been previously developed.

Discussion of Potential Project Impacts

The proposed project would not displace any housing or any people, because the site is currently undeveloped and unoccupied. As such, the project would not necessitate the construction of replacement housing elsewhere.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

No impact

11. PUBLIC SERVICES

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 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?					✓

11.a) Fire Protection: Less Than Significant Impact

Relevant Elements of Project

Fire protection and emergency response services to University Hills 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, this station has adequate capacity to accommodate existing demand on the main campus. 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. UCI employs a Fire Marshal whom is responsible for the campus fire prevention practices and provides services such as plan review and construction inspections.

Discussion of Potential Project Impacts

Full implementation of the 2007 LRDP would result in an approximately 39 percent increase in the on-campus population of students, faculty, and staff by 2025, compared to the 2005-06 on-campus population. Assuming that the increase in call generation for fire protection services would be equivalent to the increase in campus population, the number of calls for such services can be expected to increase by approximately 39 percent. Therefore, the projected call volume from UCI would increase by an estimated 259 calls, for a total of 923 estimated annual UCI calls for fire protection services. Added to the existing call volume, the total projected call volume would be an estimated 3,023 calls, which would be within the determined Station #4 capacity of 3,500 calls for fire protection services. The LRDP FEIR concluded that no new fire stations or expansions to 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). The proposed project would not result in more homes 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 Land Use Plan 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.

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.b) Police Protection: Less Than Significant Impact

Relevant Elements of Project

The UCI Police Department is located in the Public Services building on the East Campus. The Department provides all police services (all patrol, investigation, crime prevention education, and related law enforcement duties) for the campus, including University Hills (LRDP FEIR VI page 4.11-3). UCI's campus population in 2005-06 was 23,155 students and 7,463 faculty and staff, for a total campus population of 30,618. The UCI Police Department employs 30 sworn officers. The Public Services Building, which houses the UCI Police Department, was renovated prior to adoption of the 2007 LRDP.

Discussion of Potential Project Impacts

Demands on police protection services for UCI are likely to increase with campus population growth (LRDP FEIR VI page 4.11-8). Some expansion or renovation of existing facilities or construction of new facilities may be required to maintain adequate service levels. No specific facilities plans are identified in the LRDP; however, any additional facilities would be subject to assessment of environmental impacts and mitigation measures, pursuant to the University's obligations under CEQA, and no significant impacts associated with additional police facilities were anticipated in the LRDP FEIR. The proposed project would not result in more homes or population than anticipated in the LRDP FEIR or any change in need for police department services. Impacts associated with maintaining adequate police services associated with the proposed project would be less than significant.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

11.c) Schools: Less Than Significant Impact

Relevant Elements of Project

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 school campuses in the district. The 1989 LRDP had allocated land on-campus for an IUSD school to serve UCI and community needs; however, due to decreasing district-wide demand and construction of the new Vista Verde School south of the UCI campus, UCI and IUSD determined that an on-campus public school site was not required, thus no site was included in the 2007 LRDP (LRDP FEIR VI page 4.11-10).

Discussion of Potential Project Impacts

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. It is likely that some of the proposed homes would be occupied by families with school age children, a majority of who would enroll in IUSD K-12 schools, creating additional demand for school facility capacity. The LRDP FEIR however concluded that these new students represent a small percentage of IUSD enrollment, which may not even be perceivable within the IUSD's yearly student enrollment fluctuations. To offset its incremental impact on school district facilities, the proposed project would pay development impact fees to IUSD to support local school construction and operation. Additionally, two elementary schools and two middle schools are planned in IUSD over the next several years and this 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).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

11.d) Parks: Less Than Significant Impact

Relevant Elements of Project

As stated in the project description the proposed plan includes a neighborhood park amenity as well as pedestrian and bike trail linkages to the campus trail network. A precise plan for the neighborhood park has not been developed; however, it is anticipated that it would be limited to passive landscaped areas and since it is within easy walking distance of most homes in the project, limited vehicle parking. Residents of the proposed housing project would also have access to the existing community park located directly to the north of the project site at the northeast corner of Gabrielino and California and at the park and community center building under construction, at the southwest corner of Gabrielino and California. Other recreation facilities readily available on campus include Aldrich Park, the Anteater Recreation Center (ARC), and the Crawford Athletics Complex.

Discussion of Potential Project Impacts

As discussed in previous sections, the project site does not contain any significant agricultural, biological or cultural resources; therefore, the proposed neighborhood park site would not affect such resources. Noise sources in this park amenity would typically consist of passive recreation activities such as picnics, walking, sitting, children at play, walking dogs, etc. Any outdoor lighting fixtures necessary would be at a scale and intensity to provide a safe level of illumination, which would create an insignificant impact outside of the recreation area. Further, due to the small size of the park and the limited vehicular parking, this would not be a convenient site for large group events. As such, development and operation of the proposed outdoor recreation site would not have any adverse physical effect on the environment.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

11.e) Other Public Facilities: No Impact

Relevant Elements of Project

There are no public facilities within this undeveloped site and none have been planned here as part of the LRDP.

Discussion of Potential Project Impacts

This small-scale residential development is consistent with the 2007 LRDP land use policies and would not generate any unique demands for other public facilities that could result in physical environmental impacts.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

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

Relevant Elements of Project

There are no governmental or public service facilities on campus that are not operated as part of the UCI services network.

Discussion of Potential Project Impacts

This small-scale residential development is consistent with the LRDP land use policies and would not generate any unique demands for public services that could result in physical environmental impacts.

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

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: Less Than Significant Impact

Relevant Elements of Project

As stated in the project description, construction would include a neighborhood park amenity as well as walking/biking trail linkages to the campus trail network. As stated above in response to 11d, residents of the proposed project would also have access to the neighborhood park located at the northeast corner of Gabrielino Drive and California Ave and the community center at the southwest corner of Gabrielino Drive/California Avenue. Additional parks and recreation areas found within UCI which the residents of the project would have access to include Aldrich Park, the ARC, and several parks located within University Hills. Off-campus recreation opportunities are also available, including numerous city, county, and state parks and private health clubs located in the campus vicinity.

Discussion of Potential Project Impacts

As discussed in the LRDP FEIR the increased campus population would proportionally increase demand for on- and off-campus recreational facilities. The 2007 LRDP analysis assumed that the current level of maintenance of the ARC would continue and that substantial deterioration of the facility would not occur as a result of implementation of the 2007 LRDP. Further, as noted above, other recreational opportunities are available to the residents of the proposed project. Therefore, with proper maintenance of the ARC, the additional neighborhood park space included in this project, and the availability of many parks and trails in the immediate area, an increase of approximately 260 dwelling units to the campus community would result in a less than significant impact to existing on-campus recreational facilities (LRDP FEIR VI pages 4.12-5/6).

Use of off-campus public recreational facilities in the surrounding neighborhoods by UCI faculty, staff, and their families could increase as a result of the proposed project. However, such use is expected to be minor based on the recreational opportunities currently provided within the Campus. Thus, development of the proposed housing project is not anticipated to result in a significant increase in demand for use of off-campus public recreational facilities (LRDP FEIR VI page 4.12-6).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

Less than significant

12.b) Construction of Recreational Facilities: Less Than Significant Impact

Relevant Elements of Project

As stated previously, the project includes a neighborhood park/open space area and walking/biking trail linkages to the campus trail network.

Discussion of Potential Project Impacts

As discussed in previous sections, the project site does not contain any significant agricultural, biological or cultural resources; therefore, neither the proposed park area nor walking/biking trails would affect such resources. Noise sources within the proposed neighborhood park would typically consist of passive recreation activities such as picnics, walking, sitting, children at play, walking dogs, etc. Due to the small size of the park and the limited vehicular parking, this would not be a convenient site for large group events, which could potentially produce temporary traffic impacts and loud noise. As such, development and operation of the proposed one acre outdoor recreation site would not have any adverse physical effect on the environment.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

Less than significant

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) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				✓	
b) Exceed, either individually or cumulatively, a level of service standard 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) Result in inadequate parking capacity?					✓
g) Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				✓	

13.a) Cause an Increase in Traffic: Less Than Significant Impact

Relevant Elements of Project

A traffic study was prepared for this Initial Study (Appendix B) to analyze the project's impact on the campus and surrounding transportation network. Consistent with the traffic study prepared for the 2007 LRDP, 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 traffic study. The MCTM was used for evaluating the on campus roadway system. The model is a detailed traffic forecasting procedure 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).

Specifically, the traffic study prepared for this Initial Study provides an analysis of the existing performance of the circulation network and in the future (year 2015) upon completion of the project. The existing performance of the circulation network is used to determine any preexisting traffic congestion issues in the circulation network surrounding the project and whether or not capacity remains. Future, with-project conditions were analyzed to project the project's impacts to intersections in the surrounding circulation network. The traffic study also estimates the total daily traffic which the project could generate.

As stated in the project description, vehicular access to the site would be provided from the west via Gabrielino Drive and from Anteater Drive to the east, via a two lane street built as a component of the project. Traffic counts taken in 2007/2008 at a number of intersections near the project site, both on and off-campus, were used as a basis for the study's analysis and are included in the appendix of the traffic study. An annual growth factor of three percent was applied to the traffic count volumes used to formulate Year 2015 baseline (no-project) volumes.

The traffic analysis utilizes a set of performance criteria for evaluating intersection capacity to determine potential project impacts. Traffic level of service (LOS) is designated "A" through "F" with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. A LOS D is established as the minimum performance standard for signalized intersections on and off-campus. This represents an intersection capacity utilization (ICU) ratio of 0.90 or less and is calculated through an examination of the intersection geometry and turning movement volumes.

Discussion of Potential Project Impacts

The results of the roadway intersection traffic analysis, utilizing the count data described above are presented in Table 1, below. As the data indicate, all of the intersections analyzed are currently operating at a LOS A or B during the peak hours, except at Culver Drive/Bonita Canyon Drive/Shady Canyon Drive, which operates at LOS D in the AM peak period and LOS C in the PM peak period. Based on this analysis of existing conditions, there are no existing traffic congestion problems in the surrounding roadway network, and there is remaining capacity to handle additional vehicle trips at all locations, before reaching an ICU ratio of 0.90 (LOS D performance standard).

Table 1: Existing Intersection Conditions

Location	AM Peak Hour ICU and LOS	PM Peak Hour ICU and LOS
California/Campus	.47/A	.66/B
Culver/Campus	.60/A	.57/A
California/Adobe Circle N.	.19/A	.35/A
California/Arroyo	.22/A	.44/A
California/Adobe Circle S.	.22/A	.35/A
Culver/Vista Del Campo	.3233A	.34A
California/Anteater	.36/A	.36A
Bonita Canyon/Newport Coast	0.60/A	.54/A
Turtle Ridge/Bonita Canyon	.42/A	.66/B
Culver/Bonita Canyon/Shady Canyon	.88/D	.75/C
Newport Coast/Turtle Ridge	.35/A	.27/A
Newport Coast/SR-73 NB Ramp	.32/A	.28/A
Bonita Canyon/SR-73 NB Ramps	.43/A	.48/A
Bonita Canyon/SR-73 SB Ramps	.29/A	.12/A
Gabrielino/California	.13/A	.12/A

Based on standard trip generating factors for the types of housing units proposed, the traffic study estimates the total daily traffic that could be generated by this project at approximately 2,470 trips, with approximately five percent (130) in the AM peak hour and approximately six percent (156) in the PM peak hour. Distribution of the project trips was determined in accordance with the ITAM and is based upon average daily trip (ADT). When fully developed, approximately 73% of project traffic is projected to arrive/depart via the proposed street connecting to Anteater Drive, and 27% via Gabrielino Drive. The traffic study also notes that Bonita Canyon Drive between Culver Drive/Shady Canyon Drive and SR-73 was recently widened to four lanes and that associated intersection improvements will be implemented by 2015.

Results of the traffic forecasting and intersection impact analysis for future with- and without-project conditions are presented in Table 2, below. As shown, the project-related traffic would not result in any intersections operating below the LOS D performance standard and would not, therefore, have a significant congestion impact. The traffic study also determined that project-related peak hour trips on Bonita Canyon Road, between Turtle Ridge Drive and Anteater Drive/Shady Canyon Drive, would continue to operate at a high level of efficiency, projected at a volume/capacity ratio of .54 and LOS A.

Table 2: 2015 Traffic Impact Analysis

	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection (N/S Rd & E/W Rd)	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. California & Campus	.55	A	.79	C	.57	A	.81	D
2. Culver & Campus	.71	C	.68	B	.71	C	.68	B
3. California & Adobe Circle N	.23	A	.42	A	.23	A	.44	A
4. California & Arroyo	.26	A	.53	A	.28	A	.53	A
5. California & Adobe Circle S	.25	A	.41	A	.25	A	.44	A
6. Culver & Vista Del Campo	.38	A	.40	A	.39	A	.40	A
7. California & Anteater	.44	A	.42	A	.48	A	.45	A
8. Bonita Cyn & Newport Coast	.38	A	.52	A	.39	A	.53	A
9. Turtle Ridge & Bonita Cyn	.41	A	.64	B	.41	A	.65	B
10. Culver/Bonita Cyn & Shady Cyn	.61	B	.57	A	.63	B	.58	A
11. Newport Coast & Turtle Ridge	.41	A	.33	A	.41	A	.33	A
12. Newport Coast & SR-73 NB Ramps	.38	A	.32	A	.38	A	.32	A
13. Bonita Cyn & SR-73 NB Ramps	.45	A	.54	A	.45	A	.56	A
14. Bonita Cyn & SR-73 SB Ramps	.34	A	.57	A	.34	A	.58	A
15. Gabrielino & California	.15	A	.14	A	.17	A	.17	A
21. Anteater & Road "B"	--	--	--	--	.30	A	.35	A

Level of service ranges:	.00 - .60 A
	.61 - .70 B
	.71 - .80 C
	.81 - .90 D
	.91 – 1.00 E
	Above 1.00 F
Abbreviations:	ICU – intersection capacity utilization
	LOS – level of service

Traffic generated by the proposed project would not cause the performance criteria to be exceeded at any of the intersections and off-campus roadway links included in the analysis' study area. The circulation system analyzed for year 2015 conditions has adequate capacity to accommodate the proposed project land uses. In addition, the assumptions and conclusions of this traffic study are consistent with the findings and conclusions of the traffic analysis prepared for the 2007 LRDP. Implementation of the proposed project would not result in significant traffic impacts, no project level mitigation would be necessary. The campus would continue to implement the 2007 LRDP FEIR traffic and transportation related mitigation program, which includes MM Tra-1B regarding affordable housing and Tra-1J regarding roadway closures, both provided below.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

Tra-1B UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus.

Tra-1J If a campus construction project or a specific campus event requires an on-campus lane or roadway closure, or could otherwise substantially interfere with campus traffic circulation, the contractor or other responsible party will provide a traffic control plan for review and approval by UCI. The traffic control plan shall ensure that adequate emergency access and egress is maintained and that traffic is allowed to move efficiently and safely in and around the campus. The traffic control plan may include measures such as signage, detours, traffic control staff, a temporary traffic signal, or other appropriate traffic controls. If the interference would occur on a public street, UCI shall apply for all applicable permits from the appropriate jurisdiction

Significance Determination after LRDP EIR Mitigation Measures

Not applicable

Additional Project-Level Mitigation Measures

None required

Significance Determination after All Mitigation

Not applicable

13.b) Congestion Management: Less Than Significant Impact

Relevant Elements of Project

The nearest elements of the Orange County Congestion Management Plan (CMP) highways and arterials network are Jamboree Road and MacArthur Boulevard, located approximately 2.5 miles and 2 miles from the southeast corner of the campus (Culver Drive/Campus Drive intersection). 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).

Discussion of Potential Project Impacts

The traffic impact study prepared for this project (Appendix B) determined that project-generated traffic would diminish as a share of overall street volume as distance from the campus increases, and that this project would generate insignificant levels of traffic beyond the 16 study area intersections shown in Figure 8 of the traffic study. Consequently, traffic from the proposed project would not have a significant impact at any of the three nearest CMP intersections, and an assessment of impacts under CMP guidelines is not required.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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.c) Air Traffic Patterns: No Impact

Relevant Elements of Project

As stated previously, the proposed project site is located approximately 1.5 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).

Discussion of Potential Project Impacts

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

Applicable LRDP EIR Mitigation Measures Incorporated in Project

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

Relevant Elements of Project

The LRDP FEIR concluded that continued expansion of the transportation network on-campus to handle increased traffic would be compatible with existing campus transportation plans and adjacent land uses (LRDP FEIR VI page 4.13-61).

Discussion of Potential Project Impacts

All of the project's streets will be designed in accordance with the same street standards applied to other

elements of the campus road network and would have no unique aspects not anticipated in the LRDP FEIR. A typical perpendicular, at grade intersection connection to Gabrielino Drive is proposed, and the street that would extend to Anteater Drive would follow the preliminary alignment identified in the LRDP Circulation Plan. The project does not require any other alterations to existing streets or highways and the proposed residences would not interfere with sight distance at any intersections or have any other effect on driver visibility corridors or any traffic controls. The 2007 LRDP FEIR determined no impacts would occur from hazards due design features or incompatible uses and that the issue was adequately addressed in the aforementioned initial study. (LRDP FEIR VI page 4.13-61).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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.e) Inadequate Emergency Access: No Impact

Relevant Elements of Project

The proposed project does not include any alterations to existing vehicular access or drive approaches and would not remove any existing routes of vehicular access. As stated in the project description, vehicular access would be provided from the adjacent section of Gabrielino Drive and a street connecting to Anteater Drive. Both are designed to collect and distribute local traffic to the campus arterial network and to provide immediate routes for emergency access. Development associated with implementation of the 2007 LRDP is subject to the UCI Fire Marshal whom reviews all projects to ensure that adequate emergency access is incorporated (LRDP FEIR VI page 4.13-61).

Discussion of Potential Project Impacts

Project construction would not require complete closure of any adjacent streets or service drive that provides primary emergency access to other land uses. Emergency access by fire protection crews, ambulances, police

crews, or other emergency vehicles will be maintained to the active construction zones and surrounding land uses. With review of the proposed project by the UCI Fire Marshal no impacts related to emergency access would occur (LRDP FEIR VI page 4.13-61).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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.f) Inadequate Parking Capacity: No Impact

Relevant Elements of Project

There is no demand for parking nor is there a parking area on the undeveloped project site and on-street parking is prohibited along the adjacent segments of California Avenue and Gabrielino Drive.

Discussion of Potential Project Impacts

Parking is being designed in accordance with the following standards, derived from the City of Irvine's development standards:

- Single Family Detached homes: 2 driveway and 2 garage parking spaces along with 1 on-street parking space per unit.
- Apartments: 2 parking spaces per unit, with a mix of garages and stalls.

The proposed project would supply sufficient on-site parking for residents and their guests, and no impact to campus parking resources off site is anticipated.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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.g) Alternative Transportation: Less Than Significant Impact

Relevant Elements of Project

UCI implements a broad range of infrastructure to promote the 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. Off-street bike trails are identified in Figure 5-5 (page 74) of the 2007 LRDP Circulation Element along Gabrielino Drive and Bonita Canyon Drive and an on-street bike trail is planned along the connector street between the project site and Anteater Drive. Figure 5-6 of the 2007 LRDP (page 76) identifies planned pedestrian trails along Gabrielino Drive and Bonita Canyon Drive. The proposed project would provide linkages to these trails as well as a City of Irvine trail under construction along the northern side of Bonita Canyon Road.

UCI administers an extensive program of Transportation Demand Management (TDM) measures that encourage commuters to use alternate modes of transportation, including walking, bicycling, carpooling, vanpooling, and riding the UCI shuttle, other local shuttle systems, train, or bus. With these measures, UCI has been successful in achieving an average vehicle ridership of 1.9, which exceeds the AQMD regional goal of 1.7 (LRDP FEIR VI page 4.13-58).

Discussion of Potential Project Impacts

The proposed project would comply with UC's sustainable transportation policy, which requires each campus to incorporate alternative means of transportation to, from, and within each campus to improve the quality of life on campus and in the surrounding community. The proposed project would directly implement this policy by expanding the stock of affordable on-campus housing for faculty and staff. This will substantially reduce private automobile-based commuter trips and many trips associated with recreational activities, since residents could walk, ride a bicycle or ride the campus shuttle to academic and recreational areas on campus. The proposed pedestrian and bicycle trail linkages would expand the on-campus trails network and implement planned linkages identified in the 2007 LRDP Circulation Element. Therefore, project effects involving alternative

transportation plans, policies and programs would be beneficial.

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. UTILITIES AND SERVICE SYSTEMS

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) 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				✓	

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:					
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 to the campus' sanitary sewer network, which conveys flows to the IRWD wastewater treatment system. Wastewater from the UCI 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.

Discussion of Potential Project Impacts

Wastewater flows from the proposed single family homes and apartments would consist of the same kinds of chemical composition found in toilets, sinks, showers, bathtubs, and washing machine 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 adequately 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

No 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

14.b) Construction of Treatment Facilities: Less Than Significant Impact

Relevant Elements of Project

Water and wastewater infrastructure would be constructed on-site to serve the proposed residential development. As stated in the project description, the new infrastructure would connect to distribution systems located within adjacent street segments. Potable and reclaimed water service and wastewater collection and treatment service would be provided by the IRWD.

Discussion of Potential Project Impacts

Construction impacts would occur as part of the general site development phase, when all street and utility improvements are installed. No alterations to existing main line facilities would be required to provide adequate potable or irrigation water flows to this project, or to provide sufficient sanitary sewer service. Construction of these components of the project 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.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

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

Relevant Elements of Project

As stated in the project description, the proposed project site is characterized as undeveloped rolling hills dominated by non-native grassland; there are no storm drainage facilities on site. There are storm drain inlets in the adjacent segments of Gabrielino Drive and California Avenue, as well as two in the site's southern edge that extend beneath Bonita Canyon Road to convey runoff to an existing box culvert on the south side of that road. The proposed project includes new storm drainage facilities that would connect to these existing facilities.

Discussion of Potential Project Impacts

Construction of the project may require the California Avenue storm drain be upsized or a new, parallel storm drain may need to be installed to handle the added volume of runoff from the project. Two-way through traffic and emergency vehicle access would be maintained through appropriate traffic controls, as required for all such on-campus underground utility projects that must occur within street areas. Construction of the new 24-inch RCP beneath Bonita Canyon Drive, as described in the project description, would be accomplished through boring beneath the existing street and would not require closure of the street. No disruption of traffic flow would result and no adverse impacts are anticipated. Construction of these project 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.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

14.d) Water Supplies: Less Than Significant Impact

Relevant Elements of Project

This project would create a demand for domestic and reclaimed water supplies not presently existing at the site. Connections to the campus water and reclaimed water supply and distribution systems are proposed to meet the project's water needs, including potable and irrigation purposes. 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 in the next 15-20 years or so, with full implementation of the 2007 LRDP, to 4.9 mgd. UCI's 2006 reclaimed water demand was 0.6 mgd and is projected to increase to 1.2 mgd due to full implementation of the 2007 LRDP land use plan (LRDP FEIR VI page 4.14-17).

Discussion of Potential Project Impacts

The IRWD has developed an Urban Water Management Plan (UWMP, 2005) 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 to water supply reliability would not be compromised (LRDP FEIR VI page 4.14-17). This conclusion presumes that irrigation needs throughout the campus will continue to be fully met through reclaimed water supplies. Although, implementation of the 2007 LRDP would result in less than significant impacts to water supply, UCI will continue to work cooperatively with IRWD to reduce domestic water demand on campus consistent with UCI sustainability goals, as follows:

- Continue to use reclaimed water for all landscape irrigation uses where feasible and permissible by law.
- Work with IRWD to identify opportunities for additional uses of reclaimed water on-campus to reduce domestic water demand including central utility plant applications, dual plumbing systems in buildings, and other applications to reduce demand for domestic water.
- Work collaboratively with IRWD to complete a comprehensive water conservation study to identify feasible programs, projects, and measures to reduce domestic water demand, to include a plan for implementation of feasible measures.

Since the proposed project's domestic and reclaimed water demand are accounted for in the projections developed for the 2007 LRDP and anticipated in the UWMP forecasts, this project would not require any additional water supply resources or entitlements (LRDP FEIR VI pages 4.14-17/18).

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.e) Wastewater Capacity: Less Than Significant

Relevant Elements of Project

There are presently no wastewater collection or disposal/treatment facilities at the undeveloped project site. As stated previously, this project proposes connections to existing sewer lines. Campus wastewater is conveyed for treatment at the MWRP located just west of UCI and operated by the IRWD.

Discussion of Potential Project Impacts

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 would be less than significant (LRDP FEIR VI pages 4.14-12/13).

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.f) Landfill Capacity: Less Than Significant Impact

Relevant Elements of Project

Non-hazardous solid wastes generated in the University Hills area, and throughout the campus are 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). Trash pick-up and disposal services would be provided by the same company that provides that service in the City of Irvine. Separate containers for collection of trash, green wastes and recyclable materials will be provided at each single family home, and several shared solid waste storage containers would be provided in the apartment complex.

Discussion of Potential Project Impacts

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). This project's construction program will recycle more than 50% of all construction wastes. Refuse collected from the occupied residences would be managed in accordance with UCI policy to divert residential wastes from landfill disposal. As such, this project would not generate wastes that would exceed the permitted capacity of the FRB (LRDP FEIR VI pages 4.14-19).

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

14.g) Solid Waste Regulations: Less Than Significant Impact

Relevant Elements of Project

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).

Discussion of Potential Project Impacts

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, each of the single family homes will be provided with containers for trash, recyclable materials, and green wastes and the apartments with centralized 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 household wastes. The project's impact, therefore, would be less than significant.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

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

Relevant Elements of Project

Not applicable

Discussion of Potential Project Impacts

This residential development is consistent with the LRDP and 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 a-g.

Applicable LRDP EIR Mitigation Measures Incorporated in Project

No 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

15. MANDATORY FINDINGS OF SIGNIFICANCE

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
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):					

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
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

No significant environmental impacts of any kind have been identified in the responses to questions regarding project effects organized under the preceding 14 topics. As discussed in the responses to items 3a-3f, the project site does not contain or support or connect to any sensitive biological resources and not adversely affect any such resources. There are no historic resources on this undeveloped site and in the unexpected event that a prehistoric resource is discovered during grading, compliance with LRDP MM Cul-1c will ensure that such resources are properly evaluated by a qualified archaeologist to recover any information of scientific importance.

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

This project would be a permanent conversion of undeveloped land to a residential community, in accordance with the land use policies established by the 2007 LRDP. It would accomplish key faculty and staff housing objectives and support the University's sustainability policies through expansion 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 (p. 11) 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 impact study prepared for this project considered the cumulative effects of present and future traffic volumes throughout the study area network, including estimated growth due to continued campus development and growth outside of the campus that affects the same roadways. As discussed in the responses to items 13.a-b herein, no significant traffic congestion impacts are forecast for the near-term (Year 2015), with or without this project's traffic. 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 planned in the South or East Campus Areas during the next few years while this project is built and occupied. As stated in the project description (page 10), a neighborhood of 72 single family homes is under construction west of the project site, which is expected to be completed prior to commencement of construction of the proposed project. Construction of a new parking structure and approximately 21 new buildings to house approximately 1,760 new students is underway in the East Campus. The parking structure will be located next to the ARC and the student housing will be sited adjacent to Campus Drive and Arroyo Drive. Work on the parking structure is anticipated to be completed by Fall 2009, and the student housing units by Fall 2010, with occupancy likely to occur immediately thereafter. A 26,650 square foot expansion to the ARC is nearly complete and will be finished well before the proposed project is under construction. Because the East Campus area construction is distant from the project site, and as the proposed project is scheduled to begin construction in late 2009, with phased development and occupancies through roughly 2015, there would be insignificant linkages between construction impacts on this site and remaining construction activities in the East Campus area. No significant short-term cumulative impacts resulting from construction activities occurring on multiple sites are anticipated.

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 measure 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 to neighboring homes by emergency vehicles would be maintained throughout the construction phases and the developed site would not constrain emergency access to any portion of University Hills.

SUPPORTING INFORMATION SOURCES

Adams Streeter Civil Engineers Inc. *Storm Drain Exhibit Planning Area 10*. June 16 2008.

Adams Streeter Civil Engineers Inc. *Sewer Exhibit Alternative "A" Planning Area 10*. June 16, 2008.

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Adams Streeter Civil Engineers Inc. *Domestic Water Exhibit Planning Area 10.* June 16, 2008.

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California Department of Conservation. *Farmland Mapping and Monitoring Program.* 2004

California Department of Toxic Substances Control. *EnviroStor: Hazardous Waste and Substances Site List.* June 2008

California Geological Survey. *Alquist-Priolo Earthquake Fault Zones*. http://www.conservation.ca.gov/cgs/rghm/ap/Pages/affected.aspx. May 1, 1999. May 2008

Giroux & Associates, *Air Quality Analysis, University Hills Area 10 Faculty and Staff Housing Project.* March 26, 2009.

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APPENDIX A: AIR QUALITY STUDY

AIR QUALITY ANALYSIS

UNIVERSITY HILLS AREA 10-FACULTY AND STAFF HOUSING PROJECT

CITY OF IRVINE, CALIFORNIA

Prepared for:

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Date:

March 26, 2009

Project No.: P08-063A

METEOROLOGICAL SETTING

The project site's climate, as with all Southern California, is dominated by the strength and position of the semi-permanent high pressure pattern over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, and infrequent rainfall. It drives the cool daytime sea breeze, and it maintains comfortable humidities and ample sunshine after the frequent morning clouds dissipate. Unfortunately, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the large population attracted in part by the desirable climate. Portions of the Los Angeles Basin therefore experience some of the worst air quality in the nation for certain pollutants.

Temperatures in the City of Irvine average 61 degrees annually. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby oceanic thermal reservoir. In contrast to the steady temperature regime, rainfall is highly variable. Measurable precipitation occurs mainly from early November to mid-April, but total amounts are generally small. Irvine averages 12 inches of rain annually with January as the wettest month.

Winds in the project vicinity display several characteristic regimes. During the day, especially in summer, winds are from the south in the morning and from the west in the afternoon. Daytime wind speeds are 7 – 9 miles per hour on average. At night, especially in winter, the land becomes cooler than the ocean, and an off-shore wind of 3-5 miles per hour develops. Early morning winds are briefly from the south-east parallel to the coastline before the daytime on-shore flow becomes well established again. One other important wind regime occurs when high pressure occurs over the western United States that creates hot, dry and gusty Santa Ana winds from the north and northeast across Irvine.

The net effect of the wind pattern on air pollution is that any locally generated emissions will be carried offshore at night, and toward inland Orange County by day. Daytime ventilation is much more vigorous. Unless daytime winds rotate far into the north and bring air pollution from developed areas of the air basin into Irvine, warm season air quality is much better in the project vicinity than in inland valleys of the air basin. Both summer and winter air quality in the project area is generally good.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Because of Irvine's location relative to the ocean, the incoming marine air during warm season onshore flow contains little air pollution. Local air quality is not substantially affected by the regional subsidence inversions.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These

inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. During the long nocturnal drainage flow from land to sea, the exhaust pollutants continually accumulate within the shallow, cool layer of air near the ground. Some areas of Orange County thus may experience elevated levels of carbon monoxide and nitrogen oxides because of this winter radiation inversion condition. However, the coastal areas of Orange County have not substantially been affected by limited nocturnal mixing effects (no elevated levels of CO) in approximately 10 years. Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger on winter nights when nights are long and air is cool. The governing role of these inversions in atmospheric dispersion leads to a substantially different air quality environment in summer in the South Coast Air Basin than in winter.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed University Hills Area 10 Faculty and Staff Housing project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		Revoked (2006)		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	–
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		–		
Lead	30-Day average	1.5 µg/m³	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	–	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	–	
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		–	–	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer– visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

California ARB (06/26/08)

Table 2

Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Because the South Coast Air Basin (SCAB) was far from attaining the 1-hour federal standard, the 8-hour ozone non-attainment designation did not substantially alter the attainment planning process. As noted above, compliance deadline for meeting the 8-hour ozone standard has been extended to 2021.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted on June 20, 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in April 2005, which mirrors the federal standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.08 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. As part of the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As a consequence of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted.

Of the standards shown in Table 1, those for ozone (O_3), and particulate matter (PM-10 and PM-2.5) are exceeded at times in portions of the SCAB. They are called "non-attainment pollutants." Because of the variations in both the regional meteorology and in area-wide differences in levels of air pollution emissions, patterns of non-attainment have strong spatial and temporal differences.

AS LN AR Q ALT

Existing and probable future levels of air quality in Irvine can be best inferred from ambient air quality measurements conducted by the South Coast Air Quality Management District (SCAQMD) at its Costa Mesa and Mission Viejo monitoring stations. These stations measure both regional pollution levels such as dust (particulates) and smog, as well as levels of primary vehicular pollutants such as carbon monoxide.

Table 3 summarizes the last six years of the published data from a composite of gaseous species monitored at Costa Mesa and particulates at Mission Viejo (there are no particulate data available from Costa Mesa). The following conclusions can be drawn from these data:

a. Photochemical smog (ozone) levels only occasionally exceed standards. The former Federal one-hour standard has not been exceeded within the last six years, while the new 8-hour state ozone standard has been exceeded only 7 times in the past four years. The 1-hour state standard has been violated a total of 6 times for the last six years near Costa Mesa. Ozone levels are generally low near Orange County's central coastal areas.

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels periodically exceed the state standard, but the less stringent federal PM-10 standard has never been violated since PM-10 measurements began at El Toro/ Mission Viejo. There were three violations of the state PM-10 standard in 2007, the most since 2002.

d. No violations of the recently revoked federal ultra-fine particulate (PM-2.5) standard of 65 $\mu g/m^3$ have been recorded in six years of measurements. However, the recently adopted, more stringent standard of 35 $\mu g/m^3$ has been exceeded an average of 2 percent of all measurement days.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3

Air Quality Monitoring Summary (2002-2007)
(Number of Days Standards Were Exceeded, and Maximum Levels During Such Violations)
(Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	2002	2003	2004	2005	2006	2007
Ozone						
1-Hour > 0.09 ppm (S)	0	4	2	0	0	0
1-Hour > 0.12 ppm (F)*	0	0	0	0	0	0
8-Hour > 0.07 ppm (S)	-	-	5	0	0	2
8- Hour > 0.08 ppm (F)	0	1	1	0	0	0
Max. 1-Hour Conc. (ppm)	0.09	0.11	0.10	0.09	0.07	0.08
Carbon Monoxide						
1-hour > 20. ppm (S)	0	0	0	0	0	0
8- Hour > 9. ppm (S,F)	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	5.0	7.0	5.0	5.0	4.0	5.0
Max 8-hour Conc. (ppm)	4.3	5.8	4.1	3.2	3.0	3.1
Inhalable Particulates (PM-10)						
24-hour > 50 $\mu g/m^3$ (S)	5/60	2/57	0/57	0/55	1/50	3/58
24-hour > 150 $\mu g/m^3$ (F)	0/60	0/57	0/57	0/55	0/50	0/58
Max. 24-Hr. Conc. ($\mu g/m^3$)	80.	64.	47.	31.	57.	74.
Ultra-Fine Particulates (PM-2.5)						
24-Hour > 65 $\mu g/m^3$ (F)	0/119	0/109	0/111	0/114	0/106	0/98
24-Hour > 35 $\mu g/m^3$ (F)**	4/119	3/109	3/111	0/114	1/106	2/98
Max. 24-Hr. Conc. ($\mu g/m^3$)	58.	51.	49.	35.	47.	47.

* standard revoked in 2006 ** revised standard adopted in 2006

Source: South Coast Air Quality Management District, Costa Mesa Station for gaseous species; Mission Viejo for particulates.

(S) = state standard, (F) = federal standard

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 AQMP was approved by the EPA in 2004. The Air Quality Management Plan (AQMP) outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. Components of the 2003 air plan included:

- How the federal standard for CO will be maintained.
- Control measures to further reduce emissions from business, industry and paints.
- Measures to be adopted by CARB and EPA to further reduce pollution from:
  - Cars
  - Trucks
  - Construction equipment
  - Aircraft
  - Ships
  - Consumer products

Table 4

South Coast Air Basin Emissions Forecasts
(Emissions in tons/day)

Pollutant	2005[a]	2010[b]	2015[b]	2020[b]
NOx	999	755	600	493
ROG	729	569	518	496
CO	4129	2950	2472	2198
PM-10	313	256	296	306
PM-2.5	112	103	103	105

[a]2005 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.

Source: California Air Resources Board, The 2008 California Almanac of Emission & Air Quality.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date will "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

The 2007 AQMP was adopted on June 1, 2007, after extensive public review. The 2007 AQMP recognizes the interaction between photochemical processes that create both ozone and the smallest airborne particulates (PM-2.5). The 2007 AQMP is therefore a coordinated plan for both pollutants. Key emissions reductions strategies in the updated air quality plan include:

- Ultra-low emissions standards for both new and existing sources (including on-and-off-road heavy trucks, industrial and service equipment, locomotives, ships and aircraft).
- Accelerated fleet turnover to achieve benefits of cleaner engines.
- Reformulation of consumer products.
- Modernization and technology advancements from stationary sources (refineries, power plants, etc.)

Development, such as the proposed University Hills Area 10 Faculty and Staff Housing project do not directly relate to the AQMP in that there are no specific air quality programs or regulations governing "general" development. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of master planned growth is determined. If a given project incorporates any available transportation control measures that can be implemented on a project-specific basis, and if the scope and phasing of a project are consistent with adopted forecasts as shown in the Regional Comprehensive Plan (RCP), then the regional air quality impact of project growth would not be significant because of planning inconsistency. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

SIGNIFICANCE CRITERIA

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they measurably contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offer the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results 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 that exceed quantitative thresholds for ozone precursors).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

PRIMARY POLLUTANTS

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the SCAB for PM-10 and PM-2.5, an aggressive dust control program is required to control fugitive dust for any new construction.

SECONDARY POLLUTANTS

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of the significance of such emissions is thus based on a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional impact significance independent of chemical transformation processes. Projects within the SCAB with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant:

SCAQMD Emissions Significance Thresholds (lbs/day)

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

ADDITIONAL INDICATORS

In its CEQA handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation.
- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.
- Project could generate vehicle trips that cause a CO hot spot.

The SCAQMD CEQA Handbook also identifies various secondary significance criteria related to toxic, hazardous or odorous air contaminants. Hazardous air contaminants are contained within the small diameter particulate matter ("PM-2.5") fraction of diesel exhaust. Such exhaust will be generated by heavy off-road construction equipment and by diesel-powered delivery trucks delivering construction materials to the project site.

Health risks from toxic air contaminants (TAC's) are cumulative over an assumed 70-year lifespan. Measurable off-site public health risk from diesel TAC exposure would occur for only

a brief portion of a project lifetime during facility construction, and only in dilute quantity because of substantial source-receiver separation.

SENSITIVE RECEPTORS

Air quality impacts are analyzed relative to those persons with the greatest sensitivity to air pollution exposure. Such persons are called “sensitive receptors”. Sensitive population groups include young children, the elderly and the acutely and chronically ill (especially those with cardio-respiratory disease).

Residential areas are considered to be sensitive to air pollution exposure because they may be occupied for extended periods, and residents may be outdoors when exposure is highest. Schools are similarly considered to be sensitive receptors. The University Hills Area 10 Faculty and Staff Housing project site is surrounded by residential uses to the north and undeveloped land to the east and west. A church is located south of the site.

CONSTRUCTION ACTIVITY IMPACTS

Dust is typically the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions.” Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into midrange average values. This assumption may or may not be totally applicable to site-specific conditions on the proposed project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a considerable degree of imprecision.

Average daily PM-10 emissions during site grading and other disturbance are stated in the SCAQMD Handbook to be 26.4 pounds/acre. This estimate is based upon required dust control measures in effect in 1993 when the AQMD CEQA Air Quality Handbook was prepared. Rule 403 was subsequently strengthened to require use of a greater array of fugitive dust control on construction projects. All construction projects in the SCAQMD are required to use strongly enhanced control procedures. Use of enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a substantially higher PM-10 control efficiency. Daily emissions with use of reasonably available control measures (RACMs) for PM-10 can reduce emission levels to around ten (10) pounds per acre per day. With the use of best available control measures (BACMs) the California Air Resources Board URBEMIS2007 computer model predicts that emissions can be reduced to 1-2 pounds per acre per day.

The University Hills Area 10 Faculty and Staff Housing project can be broken down into the following phases with the indicated grading assumptions:

Phase 1 205,145 CY cut 153,665 CY fill 51,480 CY export locally	20.4 acres	Start construction 2009, occupy 2012
Phase 2 289,058 CY cut 9,788 CY fill 279,270 CY export locally	13.7 acres	Start construction 2012, occupy 2015
Roadway Construction 5,100 CY cut 27,350 CY fill 22,300 CY import locally	2 acres	Grade and pave in 2014

The Air Resource Board URBEMIS2007 computer model was used to calculate emissions. For Phase 1, the model predicts that for the total 20.4 acreage, 5.1 acres could be under simultaneous heavy construction at some point during the build-out lifetime of this construction phase. With the use of RACMs, daily PM-10 emissions during site grading would be 51 pounds per day (5.1 X 10.0 = 51 lb/day). The SCAQMD significance threshold of 150 pounds per day would not be exceeded. With the use of Best Available Control Measures (BACM), daily PM-10 emissions can be further reduced. Because of the PM-10 non-attainment status of the air basin, construction activity dust emissions are considered to have a cumulatively significant impact. Use of BACMs is thus required even if SCAQMD individual CEQA thresholds are not exceeded by use of RACMs.

Current research in particulate-exposure health suggests that the most adverse effects derive from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material. A national clean air standard for particulate matter of 2.5 microns or smaller in diameter (called "PM-2.5") was adopted in 1997. A limited amount of construction activity particulate matter is in the PM-2.5 range. PM-2.5 emissions are estimated by the SCAQMD to comprise 20.8 percent of PM-10. Other studies have shown that the fugitive dust fraction of PM-2.5 is closer to 10 percent. Daily PM-2.5 emissions during construction will be less than 8 pound per day compared to the SCAQMD CEQA significance threshold of 55 pounds per day.

In addition to fine particles that remain suspended in the atmosphere semi-indefinitely, construction activities generate many larger particles with shorter atmospheric residence times. This dust is comprised mainly of large diameter inert silicates that are chemically non-reactive and are further readily filtered out by human breathing passages. These fugitive dust particles are therefore more of a potential soiling nuisance as they settle out on parked cars, outdoor furniture or landscape foliage rather than any adverse health hazard. The deposition distance of

most soiling nuisance particulates is less than 100 feet from the source (EPA, 1995). There are few sensitive receptors within 100 feet from the project construction site.

Exhaust emissions will result from on and off-site heavy equipment. The types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Initial clearing and will gradually shift toward building construction and then for finish construction, paving, landscaping, etc. The URBEMIS2007 computer model was used to calculate emissions from the following prototype construction equipment fleet:

Phase 1

Grading	1 Grader
	2 Rubber Tired Dozers
	6 Scrapers
	1 Water Truck
Trenching	2 Excavators
	1 Other Equipment
	1 Tractor/Loader/Backhoe
Paving	1 Paver
	2 Paving Equipment
	4 Cement Mixers
	1 Roller
Construction	1 Crane
	2 Forklifts
	1 Generator Set
	1 Tractor/Loader/Backhoe
	3 Welders

Phase 2

Grading	1 Grader
	2 Rubber Tired Dozers
	6 Scrapers
	1 Water Truck
Trenching	2 Excavators
	1 Other Equipment
	1 Tractor/Loader/Backhoe
Paving	1 Paver
	2 Paving Equipment
	4 Cement Mixers
	1 Tractor/Loader/Backhoe
	1 Roller
Construction	1 Crane
	2 Forklifts
	1 Generator Set
	1 Tractor/Loader/Backhoe
	3 Welders

Roadway Construction

Grading	1 Grader
	1 Rubber Tired Dozer
	1 Tractor/Loader/Backhoe
	1 Water Truck
Paving	1 Paver
	1 Tractor/Loader/Backhoe
	4 Cement Mixers
	1 Roller

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Calculated construction activity emissions are summarized by phase as follows:

Phase I Construction Activity Emissions (pounds/day)

Activity	ROG	NOx	CO	SO_2	PM-10	PM-2.5	CO_2
Grading (late 2009) 88 days							
No Mitigation	16.9	155.4	75.9	0.0	360.0	79.8	13,873.2
With Mitigation	16.9	95.1*	75.9	0.0	33.8	7.8	13,873.2
Construction and Trenching (2010) Trenching 64 days, Construction 197 days							
No Mitigation	4.4	21.3	28.8	0.0	1.5	1.3	4,109.6
With Mitigation	4.4	18.2	28.8	0.0	0.5	0.3	4,109.6
Coating and Paving (2011) 181 days)							
No Mitigation	8.1	14.9	10.2	0.0	1.3	1.2	1,470.8
With Mitigation	8.1	12.7	10.2	0.0	0.2	0.2	1,470.8
SCAQMD Threshold	75	100	550	150	150	55	-

Source: URBEMIS2007 Model, Output in Appendix
*Scrapers, graders and dozers utilizing Tier 3 rated engines

Phase 2 Construction Activity Emissions (pounds/day)

Activity	ROG	NOx	CO	SO_2	PM-10	PM-2.5	CO_2
Grading (late 2012) 86 days							
No Mitigation	14.9	133.9	62.9	0.0	465.9	101.1	14,554.6
With Mitigation	14.9	83.4*	62.9	0.0	43.7	9.8	14,554.6
Construction and Trenching (2013) Trenching 64 days, Construction 197 days							
No Mitigation	3.2	16.0	17.4	0.0	1.1	1.0	2,987.0
With Mitigation	3.2	13.9	17.4	0.0	0.3	0.2	2,987.0
Coating and Paving (2014) 181 days							
No Mitigation	3.5	14.9	11.7	0.0	1.2	1.1	1,758.1
With Mitigation	3.1	12.7	11.7	0.0	0.2	0.2	1,758.1
SCAQMD Threshold	75	100	550	150	150	55	-

Source: URBEMIS2007 Model, Output in Appendix
*Scrapers, graders and dozers utilizing Tier 3 rated engines

Roadway Construction Activity Emissions (pounds/day)

Activity	ROG	NOx	CO	SO_2	PM-10	PM-2.5	CO_2
Grading (2014) 15 days							
No Mitigation	3.0	26.0	14.1	0.0	221.3	47.0	3,946.9
With Mitigation	3.0	23.2	14.1	0.0	20.9	4.6	3,946.9
Paving (late 2014) 28 days							
No Mitigation	1.6	9.7	8.1	0.0	0.8	0.7	1,224.0
With Mitigation	1.6	8.3	8.1	0.0	0.1	0.1	1,224.0
SCAQMD Threshold	75	100	550	150	150	55	-

With the use of mitigation, peak daily construction activity emissions will be well below CEQA SCAQMD thresholds and are further reduced by recommended mitigation. The recommended emissions mitigation measures are detailed in the "Mitigation" section of this report. Even if Roadway Construction and Phase 2 were to occur simultaneously, emissions thresholds would not be exceeded.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. Public exposure to heavy equipment emissions will be an extremely small fraction of the above dosage assumption. Diesel equipment is also becoming progressively "cleaner" in response to air quality rules on new off-road equipment. Any public health risk associated with project-related heavy equipment operations exhaust is therefore not quantifiable, but small.

Construction activity air quality impacts occur mainly in close proximity to the surface disturbance area. There may, however, be some "spill-over" into the surrounding community. That spill-over may be physical as vehicles drop or carry out dirt or silt is washed into public streets. Passing non-project vehicles then pulverize the dirt to create off-site dust impacts. “Spillover” may also occur via congestion effects. Construction may entail roadway encroachment, detours, lane closures and competition between construction vehicles (trucks and contractor employee commuting) and ambient traffic for available roadway capacity. Emissions controls require good housekeeping procedures and a construction traffic management plan that will maintain such "spill-over" effects at a less-than-significant level.

OPERATIONAL IMPACTS

Possible project-related air quality concerns will derive from the mobile source emissions that will be generated from the religious and educational uses proposed for the project site. At project completion, additional trip generation is estimated to be 2,403 daily trips with an associated 24,272 vehicle miles traveled (VMT).

Operational emissions for project-related traffic were calculated using a computerized procedure developed by the California Air Resources Board (CARB) for urban growth mobile source emissions. The URBEMIS2007 model was run using the trip generation factors specified by the project traffic consultant for this specific project. The model was used to calculate area source emissions and the resulting vehicular operational emissions for an assumed project build-out year of 2015. The results are shown in Table 5.

The project will not cause the SCAQMD’s recommended threshold levels to be exceeded. Project-related emission levels for the two ozone precursor pollutants (ROG and NOx) would each represent 52 and 34 percent respectively of the significance threshold. Carbon monoxide (CO) would similarly not exceed the suggested significance threshold by a large margin of safety. Operational emissions will be at a less-than-significant level.

Table 5
Project-Related Emissions Burden

	Emissions (lbs/day)						
Year 2015	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**PM-2.5**	**CO2**
Area Sources	15.2	3.3	8.7	0.0	0.0	0.0	4,053.1
Mobile Sources	13.3	15.6	164.8	0.3	41.9	8.1	24,815.7
Total	**28.5**	**18.9**	**173.5**	**0.3**	**41.9**	**8.1**	**28,868.8**
SCAQMD Threshold	55	55	550	150	150	55	-
Percent of Threshold	52	34	32	<1	28	16	NA
Exceeds Threshold?	No	No	No	No	No	No	NA

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. The Governor's Office of Planning and Research is in the process of developing CEQA significance thresholds for GHG emissions but thresholds have yet to be established. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, over the next 13 years (by 2020).
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Additionally, through the California Climate Registry (CCAR), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Impacts - Greenhouse Gas Emissions

Implementation of the proposed project would contribute to long-term increases in greenhouse gases (GHGs) as a result of traffic increases (mobile sources) and minor secondary fuel combustion emissions from space heating, etc. Development occurring as a result of the proposed project would also result in secondary operational increases in GHG emissions as a result of electricity generation to meet project-related increases in energy demand. Electricity generation in California is mainly from natural gas-fired power plants. However, since California imports about 20 to 25 percent of its total electricity (mainly from the northwestern and southwestern states), GHG emissions associated with electricity generation could also occur outside of California. Short-term GHG emissions will also derive from construction activities.

Worst case construction emissions would occur if Phase 2 and Roadway grading were to occur simultaneously. During project construction, the URBEMIS2007 computer model predicts that a peak activity day will generate the following CO_2 emissions from a combination of these two activities:

Grading (Phase 2 and Roadway)	-	18,501 pounds/day
Construction and Trenching	-	2,897 pounds/day
Coating and Paving (Phase 2 and Roadway)	-	2,982 pounds/day

For purposes of analysis, it was assumed that non-CO2 GHG emissions are negligible, and that the total project construction GHG burden can be characterized by 20 peak grading days and 100 peak construction days, 60 peak coating and paving days and that all the above activities occur in a single year. The estimated annual GHG impact is estimated as follows:

Grading = (18,501 lbs/day x 20 peak days/year) / 2,000 lbs/ ton =	185 tons/year
Construction = (2,897 lbs/day x 100 peak days/year)/2,000 lbs/ton =	145 tons/year
Paving = (2,982 lb/day x 60 peak days/year)/2,000 lbs/ton =	89 tons/year
Total =	419 tons/year

In 2004, the statewide annual GHG inventory in CO_2-equivalent levels (including all non-CO_2 gases weighted by their thermal absorption potential) was 492,000,000 metric tons (541,000,000 short tons). The worst-case project construction impact of 419 tons/year represents approximately 0.00008 percent of the statewide burden.

New daily operational CO_2 emissions from project-related traffic and area source emissions are predicted to be 28,869 pounds per day. Annually, this translates into 5,269 tons per year. This represents approximately 0.001 percent of the most recent statewide inventory.

There are no adopted thresholds of GHG emissions significance. However, GHG emissions are implicated in the acceleration of global warming experienced in the last several decades. Climatic impacts are global in scale. Any project-specific contribution to the global issue is miniscule. In

the absence of any definitive thresholds of significance, the GHG emphasis on a project-specific level is to incorporate project design features that reduce energy consumption and reduce vehicular travel as much as is reasonably feasible. Unless there is a greater shift to clean energy such as solar, hydroelectric, wind, nuclear, etc., no substantial reduction in GHG is likely attainable by conventional methods except through energy conservation

Greenhouse Gas Emissions Reduction Measures

GHG reduction options on a project-level basis are similar to those measures designed to reduce criteria air pollutants (those with ambient air quality standards). Measures that reduce trip generation or trip lengths, measures that optimize the transportation efficiency of a region, and measures that promote energy conservation within a development will reduce GHG emissions. Additionally, carbon sequestering can be achieved through urban forestry measures.

Project-specific mitigation recommendations to reduce the global cumulative impact from project implementation include the following:

Land Use and Transportation

- Promote increased utilization of public transit
- Provide continued support for rideshare programs to encourage the use of alternatives to the single occupant vehicle (SOV) for site access and trips originating at the site

Energy Conservation

- Construct the new residential building to exceed California Title 24 energy efficiency requirements by ten (10) percent.
- Maximize use of low pressure sodium and/or fluorescent lighting
- Require acquisition of new appliances and equipment to meet Energy Star certification

Urban Forestry

- Participate in green waste collection and recycling programs for landscape maintenance
- Promote the use of fast growing landscaping to sequester CO_2

MITIGATION

CONSTRUCTION EMISSIONS MITIGATION

Construction activity air pollution emissions are not anticipated to individually exceed SCAQMD CEQA thresholds. Regardless, the non-attainment status of the air basin requires that Best Available Control Measures (BACMs) be used where feasible. Recommended construction activity mitigation including BACM's includes:

Dust Control

- Apply soil stabilizers to inactive areas.
- Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces and haul roads 3 times/day.
- Cover all stock piles with tarps.
- Replace ground cover in disturbed areas as soon as feasible.
- Reduce speeds on unpaved roads to less than 15 mph.

Exhaust Emissions

- Require 90-day low-NOx tune-ups for off-road equipment.
- Limit allowable idling to 5 minutes for trucks and heavy equipment.
- Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.
- Utilize diesel particulate filter on heavy equipment where feasible.
- Utilize Tier 3 rated engines for scrapers, graders and dozers.

Painting and Coatings

- Use low VOC coatings and high pressure-low volume sprayers.

OPERATIONAL EMISSIONS MITIGATION

Operational emissions will not exceed adopted significance thresholds.

APPENDIX

URBEMIS2007 Computer Model Output

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\UCI\UCI Area 10 Phase 1 Construction 2009-2012.urb924

Project Name: UCI Area 10 Phase I 2009-2012 Construction

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

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	16.93	155.44	75.91	0.00	353.47	6.54	360.01	73.82	6.02	79.84	13,873.15
2009 TOTALS (lbs/day mitigated)	16.93	95.12	75.91	0.00	32.78	1.02	33.80	6.85	0.94	7.79	13,873.15
2010 TOTALS (lbs/day unmitigated)	4.36	21.34	28.84	0.03	0.11	1.35	1.47	0.04	1.24	1.28	4,109.65
2010 TOTALS (lbs/day mitigated)	4.36	18.15	28.84	0.03	0.11	0.34	0.45	0.04	0.31	0.35	4,109.65
2011 TOTALS (lbs/day unmitigated)	8.09	14.85	10.22	0.00	0.01	1.26	1.28	0.01	1.16	1.17	1,470.79
2011 TOTALS (lbs/day mitigated)	7.28	12.73	10.22	0.00	0.01	0.21	0.23	0.01	0.20	0.20	1,470.79

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/1/2009-12/31/2009 Active Days: 88	**16.93**	**155.44**	**75.91**	0.00	**353.47**	**6.54**	**360.01**	**73.82**	**6.02**	**79.84**	**13,873.15**
Mass Grading 09/01/2009-12/31/2009	16.93	155.44	75.91	0.00	353.47	6.54	360.01	73.82	6.02	79.84	13,873.15
Mass Grading Dust	0.00	0.00	0.00	0.00	353.45	0.00	353.45	73.81	0.00	73.81	0.00
Mass Grading Off Road Diesel	16.78	154.30	72.91	0.00	0.00	6.49	6.49	0.00	5.97	5.97	13,437.97
Mass Grading On Road Diesel	0.07	0.98	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	123.97
Mass Grading Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 1/1/2010-3/31/2010 Active Days: 64	2.67	21.34	11.49	0.00	0.01	1.20	1.21	0.00	1.11	1.11	2,166.54
Trenching 01/01/2010-03/31/2010	2.67	21.34	11.49	0.00	0.01	1.20	1.21	0.00	1.11	1.11	2,166.54
Trenching Off Road Diesel	2.63	21.28	10.51	0.00	0.00	1.20	1.20	0.00	1.10	1.10	2,042.10
Trenching 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 4/1/2010-12/31/2010 Active Days: 197	4.36	20.19	28.84	**0.03**	0.11	1.35	1.47	0.04	1.24	1.28	4,109.65
Building 04/01/2010-12/31/2010	4.36	20.19	28.84	0.03	0.11	1.35	1.47	0.04	1.24	1.28	4,109.65
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.23	2.74	2.05	0.00	0.02	0.11	0.13	0.01	0.10	0.11	517.25
Building Worker Trips	0.48	0.91	15.59	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,971.20
Time Slice 1/1/2011-6/30/2011 Active Days: 181	8.09	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19
Coating 01/01/2011-06/30/2011	8.09	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19
Architectural Coating	8.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19

Time Slice 7/1/2011-10/28/2011 Active Days: 86	2.60	14.85	10.22	0.00	0.01	1.26	1.28	0.01	1.16	1.17	1,470.79
Asphalt 07/01/2011-10/29/2011	2.60	14.85	10.22	0.00	0.01	1.26	1.28	0.01	1.16	1.17	1,470.79
Paving Off-Gas	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.17	8.17	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,131.92
Paving On Road Diesel	0.04	0.58	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	90.05
Paving Worker Trips	0.06	0.11	1.84	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.83

Phase Assumptions

Phase: Mass Grading 9/1/2009 - 12/31/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 20.37

Maximum Daily Acreage Disturbed: 5.09

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2564 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 29.25

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

6 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2010 - 3/31/2010 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

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

Phase: Paving 7/1/2011 - 10/29/2011 - Default Paving Description

Acres to be Paved: 5.09

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Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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

2 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

Phase: Building Construction 4/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

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 Generator Sets (49 hp) operating at a 0.74 load factor for 8 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 1/1/2011 - 6/30/2011 - Default Architectural Coating Description

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

Time Slice 9/1/2009-12/31/2009 Active Days: 88	**16.93**	95.12	**75.91**	0.00	32.78	1.02	33.80	6.85	0.94	7.79	**13,873.15**
Mass Grading 09/01/2009-12/31/2009	16.93	95.12	75.91	0.00	32.78	1.02	33.80	6.85	0.94	7.79	13,873.15
Mass Grading Dust	0.00	0.00	0.00	0.00	32.76	0.00	32.76	6.84	0.00	6.84	0.00
Mass Grading Off Road Diesel	16.78	93.98	72.91	0.00	0.00	0.97	0.97	0.00	0.90	0.90	13,437.97
Mass Grading On Road Diesel	0.07	0.98	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	123.97
Mass Grading Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 1/1/2010-3/31/2010 Active Days: 64	2.67	18.15	11.49	0.00	0.01	0.18	0.19	0.00	0.17	0.17	2,166.54
Trenching 01/01/2010-03/31/2010	2.67	18.15	11.49	0.00	0.01	0.18	0.19	0.00	0.17	0.17	2,166.54
Trenching Off Road Diesel	2.63	18.09	10.51	0.00	0.00	0.18	0.18	0.00	0.17	0.17	2,042.10
Trenching 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 4/1/2010-12/31/2010 Active Days: 197	4.36	17.71	28.84	**0.03**	0.11	0.34	0.45	0.04	0.31	0.35	4,109.65
Building 04/01/2010-12/31/2010	4.36	17.71	28.84	0.03	0.11	0.34	0.45	0.04	0.31	0.35	4,109.65
Building Off Road Diesel	3.65	14.06	11.20	0.00	0.00	0.18	0.18	0.00	0.16	0.16	1,621.20
Building Vendor Trips	0.23	2.74	2.05	0.00	0.02	0.11	0.13	0.01	0.10	0.11	517.25
Building Worker Trips	0.48	0.91	15.59	0.02	0.09	0.05	0.14	0.03	0.04	0.08	1,971.20
Time Slice 1/1/2011-6/30/2011 Active Days: 181	7.28	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19
Coating 01/01/2011-06/30/2011	7.28	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19
Architectural Coating	7.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.19

Time Slice 7/1/2011-10/28/2011 Active Days: 86	2.60	12.73	10.22	0.00	0.01	0.21	0.23	0.01	0.20	0.20	1,470.79
Asphalt 07/01/2011-10/29/2011	2.60	12.73	10.22	0.00	0.01	0.21	0.23	0.01	0.20	0.20	1,470.79
Paving Off-Gas	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	12.04	8.17	0.00	0.00	0.19	0.19	0.00	0.17	0.17	1,131.92
Paving On Road Diesel	0.04	0.58	0.21	0.00	0.00	0.02	0.03	0.00	0.02	0.02	90.05
Paving Worker Trips	0.06	0.11	1.84	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.83

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 9/1/2009 - 12/31/2009 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

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

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

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

PM10: 61% PM25: 61%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Scrapers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Trenching 1/1/2010 - 3/31/2010 - Default Trenching Description

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 7/1/2011 - 10/29/2011 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 4/1/2010 - 12/31/2010 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2011 - 6/30/2011 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\UCI\UCI Area 10 Phase 2 Construction 2012-2015.urb924

Project Name: UCI Area 10 Phase 2 2012-2015 Construction

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

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	14.85	133.95	62.86	0.01	460.58	5.38	465.95	96.19	4.95	101.14	14,554.61
2012 TOTALS (lbs/day mitigated)	14.85	83.36	62.86	0.01	42.73	0.96	43.69	8.93	0.89	9.81	14,554.61
2013 TOTALS (lbs/day unmitigated)	3.20	15.98	17.40	0.01	0.06	1.02	1.08	0.02	0.94	0.96	2,986.98
2013 TOTALS (lbs/day mitigated)	3.20	13.89	17.40	0.01	0.06	0.23	0.29	0.02	0.21	0.23	2,986.98
2014 TOTALS (lbs/day unmitigated)	3.47	14.92	11.67	0.00	0.02	1.22	1.24	0.01	1.12	1.13	1,758.08
2014 TOTALS (lbs/day mitigated)	3.13	12.73	11.67	0.00	0.02	0.20	0.21	0.01	0.18	0.19	1,758.08

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 9/3/2012-12/31/2012 Active Days: 86	**14.85**	**133.95**	**62.86**	0.01	**460.58**	**5.38**	**465.95**	**96.19**	**4.95**	**101.14**	**14,554.61**
Mass Grading 09/01/2012-12/31/2012	14.85	133.95	62.86	0.01	460.58	5.38	465.95	96.19	4.95	101.14	14,554.61
Mass Grading Dust	0.00	0.00	0.00	0.00	460.53	0.00	460.53	96.18	0.00	96.18	0.00
Mass Grading Off Road Diesel	14.43	129.21	59.01	0.00	0.00	5.19	5.19	0.00	4.78	4.78	13,437.97
Mass Grading On Road Diesel	0.36	4.61	1.71	0.01	0.03	0.18	0.20	0.01	0.16	0.17	805.66
Mass Grading Worker Trips	0.06	0.12	2.14	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Time Slice 1/1/2013-3/29/2013 Active Days: 64	1.74	14.16	8.76	0.00	0.01	0.68	0.69	0.00	0.63	0.63	1,839.02
Trenching 01/01/2013-03/31/2013	1.74	14.16	8.76	0.00	0.01	0.68	0.69	0.00	0.63	0.63	1,839.02
Trenching Off Road Diesel	1.72	14.12	7.97	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,714.64
Trenching Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.38
Time Slice 4/1/2013-12/31/2013 Active Days: 197	3.20	15.98	17.40	**0.01**	0.06	1.02	1.08	0.02	0.94	0.96	2,986.98
Building 04/01/2013-12/31/2013	3.20	15.98	17.40	0.01	0.06	1.02	1.08	0.02	0.94	0.96	2,986.98
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.16	1.76	1.48	0.00	0.02	0.07	0.09	0.01	0.06	0.07	470.25
Building Worker Trips	0.17	0.32	5.72	0.01	0.04	0.02	0.07	0.02	0.02	0.04	895.54
Time Slice 1/1/2014-6/30/2014 Active Days: 181	3.47	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82
Coating 01/01/2014-06/30/2014	3.47	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82
Architectural Coating	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82

Time Slice 7/1/2014-10/29/2014 Active Days: 87	2.51	14.92	11.67	0.00	0.02	1.22	1.24	0.01	1.12	1.13	1,758.08
Asphalt 07/01/2014-10/29/2014	2.51	14.92	11.67	0.00	0.02	1.22	1.24	0.01	1.12	1.13	1,758.08
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.56	9.90	0.00	0.00	1.21	1.21	0.00	1.11	1.11	1,418.44
Paving On Road Diesel	0.02	0.26	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	59.81
Paving Worker Trips	0.05	0.09	1.66	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83

Phase Assumptions

Phase: Mass Grading 9/1/2012 - 12/31/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 13.67

Maximum Daily Acreage Disturbed: 3.42

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 3613 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 190.09

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

6 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2013 - 3/31/2013 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 7/1/2014 - 10/29/2014 - Default Paving Description

Acres to be Paved: 3.42

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Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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

2 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 4/1/2013 - 12/31/2013 - Default Building Construction Description

Off-Road Equipment:

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 Generator Sets (49 hp) operating at a 0.74 load factor for 8 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 1/1/2014 - 6/30/2014 - Default Architectural Coating Description

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

Time Slice 9/3/2012-12/31/2012 Active Days: 86	**14.85**	83.36	**62.86**	0.01	42.73	0.96	43.69	8.93	0.89	9.81	**14,554.61**
Mass Grading 09/01/2012-12/31/2012	14.85	83.36	62.86	0.01	42.73	0.96	43.69	8.93	0.89	9.81	14,554.61
Mass Grading Dust	0.00	0.00	0.00	0.00	42.69	0.00	42.69	8.92	0.00	8.92	0.00
Mass Grading Off Road Diesel	14.43	78.62	59.01	0.00	0.00	0.78	0.78	0.00	0.72	0.72	13,437.97
Mass Grading On Road Diesel	0.36	4.61	1.71	0.01	0.03	0.18	0.20	0.01	0.16	0.17	805.66
Mass Grading Worker Trips	0.06	0.12	2.14	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Time Slice 1/1/2013-3/29/2013 Active Days: 64	1.74	12.04	8.76	0.00	0.01	0.11	0.11	0.00	0.10	0.10	1,839.02
Trenching 01/01/2013-03/31/2013	1.74	12.04	8.76	0.00	0.01	0.11	0.11	0.00	0.10	0.10	1,839.02
Trenching Off Road Diesel	1.72	12.00	7.97	0.00	0.00	0.10	0.10	0.00	0.09	0.09	1,714.64
Trenching Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.38
Time Slice 4/1/2013-12/31/2013 Active Days: 197	3.20	13.89	17.40	**0.01**	0.06	0.23	0.29	0.02	0.21	0.23	2,986.98
Building 04/01/2013-12/31/2013	3.20	13.89	17.40	0.01	0.06	0.23	0.29	0.02	0.21	0.23	2,986.98
Building Off Road Diesel	2.88	11.82	10.20	0.00	0.00	0.14	0.14	0.00	0.13	0.13	1,621.20
Building Vendor Trips	0.16	1.76	1.48	0.00	0.02	0.07	0.09	0.01	0.06	0.07	470.25
Building Worker Trips	0.17	0.32	5.72	0.01	0.04	0.02	0.07	0.02	0.02	0.04	895.54
Time Slice 1/1/2014-6/30/2014 Active Days: 181	3.13	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82
Coating 01/01/2014-06/30/2014	3.13	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82
Architectural Coating	3.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.82

Time Slice 7/1/2014-10/29/2014 Active Days: 87	2.51	12.73	11.67	0.00	0.02	0.20	0.21	0.01	0.18	0.19	1,758.08
Asphalt 07/01/2014-10/29/2014	2.51	12.73	11.67	0.00	0.02	0.20	0.21	0.01	0.18	0.19	1,758.08
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	12.38	9.90	0.00	0.00	0.18	0.18	0.00	0.17	0.17	1,418.44
Paving On Road Diesel	0.02	0.26	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	59.81
Paving Worker Trips	0.05	0.09	1.66	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 9/1/2012 - 12/31/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

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

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

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

PM10: 61% PM25: 61%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Scrapers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Trenching 1/1/2013 - 3/31/2013 - Default Trenching Description

For Excavators, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Excavators, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Other General Industrial Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Other General Industrial Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 7/1/2014 - 10/29/2014 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 4/1/2013 - 12/31/2013 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2014 - 6/30/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\UCI\UCI Area 10 Roadway Construction 2014.urb924

Project Name: UCI Area 10 Roadway

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

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	3.00	26.04	14.08	0.02	220.17	1.14	221.32	45.99	1.05	47.04	3,946.96
2014 TOTALS (lbs/day mitigated)	3.00	23.18	14.08	0.02	20.46	0.39	20.85	4.28	0.36	4.64	3,946.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 11/3/2014-11/21/2014 Active Days: 15	**3.00**	**26.04**	**14.08**	**0.02**	**220.17**	**1.14**	**221.32**	**45.99**	**1.05**	**47.04**	**3,946.96**
Mass Grading 11/03/2014-11/21/2014	3.00	26.04	14.08	0.02	220.17	1.14	221.32	45.99	1.05	47.04	3,946.96
Mass Grading Dust	0.00	0.00	0.00	0.00	220.11	0.00	220.11	45.97	0.00	45.97	0.00
Mass Grading Off Road Diesel	2.41	19.08	10.74	0.00	0.00	0.89	0.89	0.00	0.82	0.82	2,247.32
Mass Grading On Road Diesel	0.57	6.92	2.60	0.01	0.05	0.25	0.31	0.02	0.23	0.25	1,575.27
Mass 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
Time Slice 11/24/2014-12/31/2014 Active Days: 28	1.60	9.73	8.08	0.00	0.01	0.78	0.79	0.00	0.72	0.72	1,224.04
Asphalt 11/24/2014-12/31/2014	1.60	9.73	8.08	0.00	0.01	0.78	0.79	0.00	0.72	0.72	1,224.04
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.51	9.54	6.74	0.00	0.00	0.77	0.77	0.00	0.71	0.71	979.23
Paving On Road Diesel	0.01	0.12	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	27.17
Paving Worker Trips	0.04	0.07	1.29	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.65

Phase Assumptions

Phase: Mass Grading 11/3/2014 - 11/21/2014 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1823 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 371.67

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 11/24/2014 - 12/31/2014 - Default Paving Description

Acres to be Paved: 0.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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

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
Time Slice 11/3/2014-11/21/2014 Active Days: 15	**3.00**	23.18	**14.08**	**0.02**	20.46	0.39	20.85	4.28	0.36	4.64	**3,946.96**
Mass Grading 11/03/2014-11/21/2014	3.00	23.18	14.08	0.02	20.46	0.39	20.85	4.28	0.36	4.64	3,946.96
Mass Grading Dust	0.00	0.00	0.00	0.00	20.40	0.00	20.40	4.26	0.00	4.26	0.00
Mass Grading Off Road Diesel	2.41	16.22	10.74	0.00	0.00	0.13	0.13	0.00	0.12	0.12	2,247.32
Mass Grading On Road Diesel	0.57	6.92	2.60	0.01	0.05	0.25	0.31	0.02	0.23	0.25	1,575.27
Mass 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
Time Slice 11/24/2014-12/31/2014 Active Days: 28	1.60	8.30	8.08	0.00	0.01	0.13	0.14	0.00	0.12	0.12	1,224.04
Asphalt 11/24/2014-12/31/2014	1.60	8.30	8.08	0.00	0.01	0.13	0.14	0.00	0.12	0.12	1,224.04
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.51	8.11	6.74	0.00	0.00	0.12	0.12	0.00	0.11	0.11	979.23
Paving On Road Diesel	0.01	0.12	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	27.17
Paving Worker Trips	0.04	0.07	1.29	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.65

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/3/2014 - 11/21/2014 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

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

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

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

PM10: 61% PM25: 61%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 11/24/2014 - 12/31/2014 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

1/8/2009 11:12:25 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: UCI Area 10 Operational

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

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	15.21	3.26	8.68	0.00	0.03	0.03	4,053.06

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.26	15.62	164.79	0.26	41.85	8.09	24,815.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	28.47	18.88	173.47	0.26	41.88	8.12	28,868.78

1/8/2009 11:12:25 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.24	3.17	1.35	0.00	0.01	0.01	4,040.63
Hearth - No Summer Emissions							
Landscape	1.01	0.09	7.33	0.00	0.02	0.02	12.43
Consumer Products	13.34						
Architectural Coatings	0.62						
TOTALS (lbs/day, unmitigated)	15.21	3.26	8.68	0.00	0.03	0.03	4,053.06

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	5.20	6.18	65.16	0.10	16.55	3.20	9,812.67
Apartments mid rise	4.98	5.85	61.73	0.10	15.68	3.03	9,296.21
Condo/townhouse general	3.08	3.59	37.90	0.06	9.62	1.86	5,706.84
TOTALS (lbs/day, unmitigated)	13.26	15.62	164.79	0.26	41.85	8.09	24,815.72

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

1/8/2009 11:12:25 AM

Analysis Year: 2015 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	31.67	10.00	dwelling units	95.00	950.00	9,597.66
Apartments mid rise	2.63	9.00	dwelling units	100.00	900.00	9,092.52
Condo/townhouse general	4.06	8.50	dwelling units	65.00	552.50	5,581.80
					2,402.50	24,271.98

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.8	0.2	99.6	0.2
Light Truck < 3750 lbs	6.9	0.0	98.6	1.4
Light Truck 3751-5750 lbs	24.2	0.0	100.0	0.0
Med Truck 5751-8500 lbs	10.9	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

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

B

APPENDIX B: TRAFFIC IMPACT STUDY

University of California, Irvine

UNIVERSITY HILLS AREA 10
FACULTY/STAFF HOUSING PROJECT

Traffic Study

June 2009

AUSTIN-FOUST ASSOCIATES, INC.

University of California, Irvine

UNIVERSITY HILLS AREA 10
FACULTY/STAFF HOUSING PROJECT
Traffic Study

Prepared by:

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(714) 667-0496

June 8, 2009

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University of California, Irvine
UNIVERSITY HILLS AREA 10
FACULTY/STAFF HOUSING PROJECT
Traffic Study

This report summarizes the results of a traffic analysis for the proposed faculty/staff housing development ("proposed project") in the southern portion of University Hills referred to as Area 10 on the University of California, Irvine, (UCI) main campus.

INTRODUCTION

Illustrated in Figure 1, the proposed project site is located in University Hills Area 10 and is generally bounded by the recently extended Gabrielino Drive to the west, California Avenue to the north, Bonita Canyon Drive to the south, and undeveloped land to the east.

The mix and configuration of homes shown in Figure 1 are conceptual at this time and will be finalized as part of the development process. For purposes of the traffic analysis presented in this report, the proposed project comprises approximately 259 residential units that will be subdivided into 139 single family detached units, and 120 apartments. The proposed project also includes a park that will serve the proposed community and generate very little traffic (i.e., residents will not drive their cars to reach it) and a new road connecting the community to Anteater Drive. There are currently no developed land uses on the proposed project site. Full development of the proposed project is assumed in the with-project future conditions analysis of this report. Discussion on the potential traffic impacts should only a portion of the proposed project be built will also be presented. Also assumed with development of the proposed project is a connector road to Anteater Drive on the east side of the proposed project.

The current UCI Long Range Development Plan (LRDP) was adopted in 2007 and established a land use plan and physical planning framework to accommodate projected enrollment levels, additional academic facilities and housing, and the on-campus circulation system through the 2025-2026 horizon year. The baseline (no-project) condition in this report assumes the existing UCI campus population and level of development.

Source: UCI

Figure 1

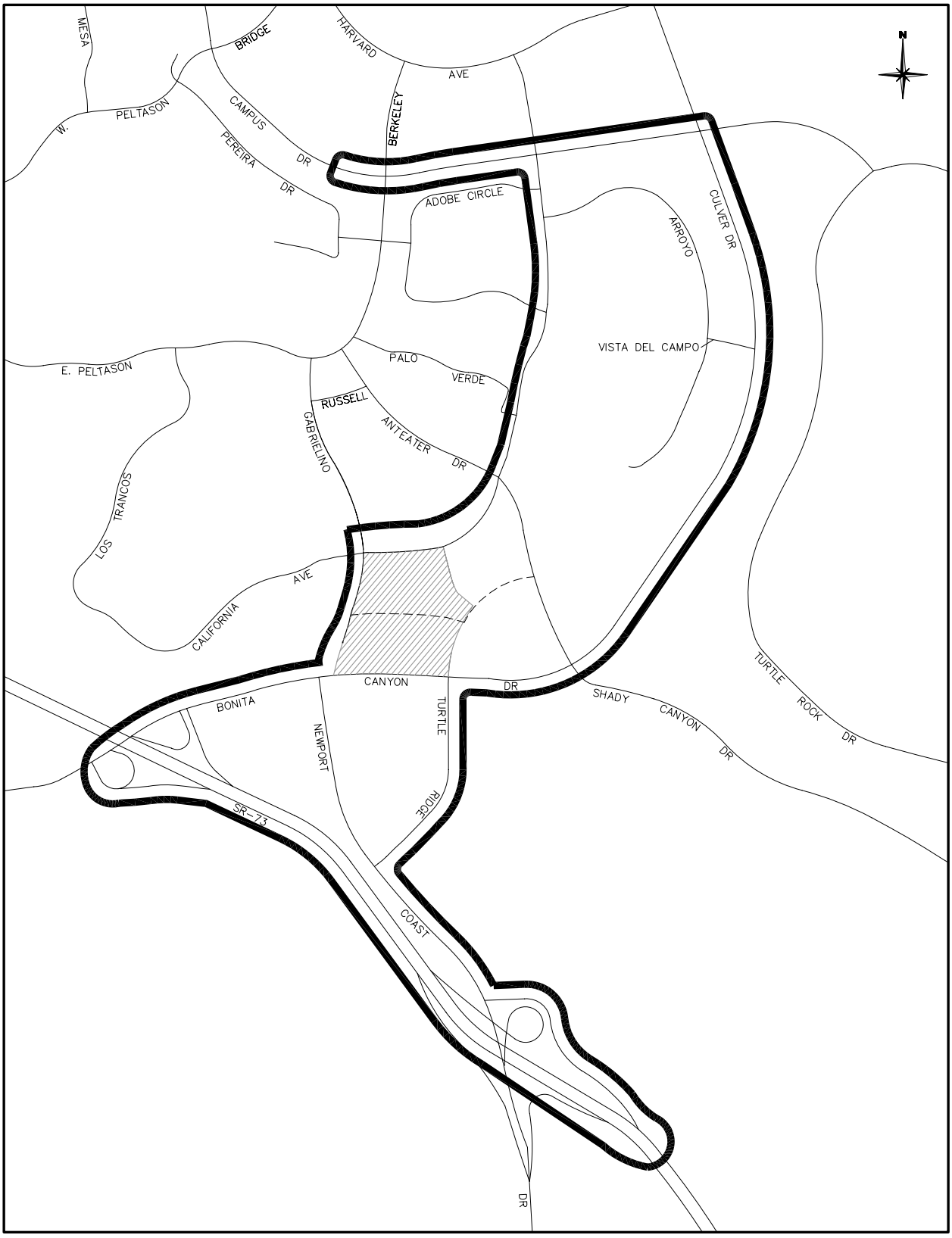
CONCEPT PLAN

The development program for the proposed project was assumed in the LRDP. Hence long-range traffic analysis findings associated with the proposed project would be in conformance with those contained in the traffic report prepared for the 2007 LRDP. For this reason, no new long-range (Post-2025) impact analysis has been carried out for the overall campus roadway system.

ANALYSIS SCOPE AND METHODOLOGY

The locations analyzed in this traffic study fall within the area shown in Figure 2. This study area was determined by where the project impact becomes insignificant on a peak hour basis (i.e., less than .02 difference and acceptable level of service conditions). This methodology is consistent with other analyses in the City of Irvine. Since the proposed project is within the development limits of the adopted LRDP, any necessary mitigation measures required by the proposed project that are identified in this report would be included in the traffic improvement needs for overall campus development identified in the LRDP. The focus of this study is to analyze the proposed project in a short-range time frame thereby helping to identify LRDP traffic improvements that would be needed sooner rather than later.

The short-range time frame used in this analysis represents the amount of growth that is projected to occur in the next six years at project buildout (referred to as year 2015). Year 2015 baseline (no-project) volumes were formulated using the existing (2007/2008) traffic count volumes as a base, and applying a three percent annual growth factor for seven years (21 percent total) to 2008 counts or eight years (24 percent total) to 2007 counts. Annual (ambient) traffic growth includes traffic growth from non-specific development within and outside the study area and is based on the trend in count data of around two to three percent increase per year in the area according to the City of Irvine's 2005 Circulation Phasing Analysis (three percent has been used here for worst-case purposes). Project-generated traffic volumes are from the University of California, Irvine, Main Campus Traffic Model (UCI MCTM) and based on the project trip distribution derived from the Irvine Transportation Analysis Model (ITAM). The ITAM is used to derive the proposed project trip distribution because it can provide off-campus trip distribution patterns whereas the UCI MCTM is limited to on-campus traffic patterns. The project volumes were then added to the year 2015 no-project volumes, resulting in the year 2015 with-project volumes.



Legend

- Analysis Boundary
- Project Site
- Future roadway with project

Figure 2

STUDY AREA

PERFORMANCE CRITERIA

The traffic analysis utilizes a set of performance criteria for evaluating intersection capacity to determine potential project impacts. Traffic level of service (LOS) is designated "A" through "F" with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. Table 1 summarizes the volume/capacity (V/C) ranges that correspond to LOS "A" through "F." The V/C ranges are designated in the General Plan for the City of Irvine.

Average daily traffic (ADT) volumes are presented for all study area roadway link locations and the volume/capacity ratios of off-campus roadways in the study area are analyzed. The traffic analysis also examines AM and PM peak hour volumes for study area intersections. Volumes and capacities are compared by means of intersection capacity utilization (ICU) values. The intersection capacity analysis examines AM and PM peak hour volumes and ICUs at the intersections being analyzed in the defined study area. The V/C ratios and LOS ranges presented in Table 1 also apply to the ICU values to describe the intersection LOS. Adopted by the City of Irvine in August 2004, the performance criteria are summarized in Table 2.

The target LOS is "D" or better, which is equivalent to a maximum V/C or ICU value of .90. Since UCI does not have an adopted performance criteria for intersections, the City of Irvine's performance criteria were used in the analysis to identify project impacts at on-campus intersection locations. Table 3 summarizes the general LOS descriptions according to the Highway Capacity Manual for signalized intersections.

PROJECT DESCRIPTION

The proposed project is a new residential community within the southern portion of the UCI Main Campus in an area identified as "University Hills Area 10" (see previously referenced Figures 1 and 2). The mix and configuration of homes are conceptual at this time and will be finalized as part of the development process. For purposes of the traffic analysis presented in this report, the proposed project is comprised of 259 residential units that will be subdivided into 139 single family detached units, and 120 apartments. The proposed project also includes a park that will not generate trips because it is local serving (i.e., residents will not drive their cars to reach it) and a new road connecting the community to Anteater Drive.

Table 1

VOLUME/CAPACITY (V/C) RATIOS AND
LEVEL OF SERVICE (LOS) RANGES

LOS	V/C Value Ranges
A	.00 – .60
B	.61 – .70
C	.71 – .80
D	.81 – .90
E	.91 – 1.00
F	Above 1.00

Table 2

PERFORMANCE CRITERIA FOR LOCATIONS ANALYZED WITHIN THE STUDY AREA

I. Arterial Roads

V/C Calculation Methodology

Level of service based on average daily traffic (ADT) volume/capacity (V/C) ratios and calculated using the following capacities:

City of Irvine

Major Arterial	8 lanes	72,000
	6 lanes	54,000
Primary Arterial	4 lanes	32,000
Secondary Arterial	4 lanes	28,000
Commuter	2 lanes	13,000

UCI

Campus Primary	4 lanes	37,500
Campus Collector	4 lanes	25,000
Campus Collector	2 lanes	12,500
Campus Local	2 lanes	12,500

As required by the City of Irvine Link Capacity Analysis guidelines, arterial deficiencies identified based on ADT V/C ratios are to be further examined using peak hour data.

Performance Standard

City of Irvine

Arterials in Irvine Planning Area 33 (Spectrum 1) and Planning Area 36 (Irvine Business Complex/IBC): Level of Service "E" (peak hour V/C less than or equal to 1.00). All other arterials: Level of Service "D" (peak hour V/C less than or equal to 0.90).

UCI

No performance standard specified for ADT V/C ratios.

Mitigation Requirement

For arterial roads with a V/C greater than the acceptable level of service, mitigation of the project contribution is required to bring link location back to acceptable level of service where the deficiency is caused by the project or to no-project conditions or better for locations where the project adds to a deficient condition by .02 or greater for locations in the City of Irvine. Without a performance standard, no mitigation is required for arterial roads in UCI.

Table 2 (cont.)
PERFORMANCE CRITERIA FOR LOCATIONS ANALYZED WITHIN THE STUDY AREA

II. Intersections

V/C Calculation Methodology

Level of service based on peak hour intersection capacity utilization (ICU) values and calculated using the following assumptions:

City of Irvine, UCI

Saturation Flow Rate: 1,700 vehicles/hour/lane
Clearance Interval: .05
Right-Turn-On-Red Utilization Factor*: .75

* "De-facto" right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

Performance Standard

Intersections in Irvine Planning Area 36 (Irvine Business Complex/IBC): Level of Service "E" (peak hour ICU less than or equal to 1.00). All other intersections: Level of Service "D" (peak hour ICU less than or equal to .90).

Mitigation Requirement

For ICU greater than the acceptable level of service, mitigation of the project contribution is required to bring intersection back to acceptable level of service where the deficiency is caused by the project or to no-project conditions or better for locations where the project adds to a deficient condition by .02 or greater for locations in the City of Irvine and UCI.

Table 3

LEVEL OF SERVICE DESCRIPTIONS – SIGNALIZED INTERSECTIONS

Levels of service (LOS) for signalized intersections are defined in terms of control delay as follows:

LOS	DESCRIPTION	DELAY PER VEHICLE (secs)
A	LOS "A" describes operations with low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.	< 10
B	LOS "B" describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than the LOS "A", causing higher levels of delay.	10 – 20
C	LOS "C" describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.	20 – 35
D	LOS "D" describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS "D", the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35 – 55
E	LOS "E" describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent.	55 – 80
F	LOS "F" describes operations with control delay in excess of 80 seconds per vehicle. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high V/C ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.	> 80

Source: Highway Capacity Manual 2000, Transportation Research Board, National Research Council

Table 4 summarizes the trip generation characteristics for the proposed project. As described when completely built the proposed project will generate approximately 2,470 average daily trips (ADT) of which 130 and 156 (approximately five and six percent of the ADT) will be in the AM and PM peak hours, respectively.

Figure 3 presents the project trip distribution for the conditions analyzed here. The trip distribution was derived from the ITAM and is based on ADT volumes. These percentages differ only slightly in the peak hours, and have also been applied to derive peak hour project trips.

EXISTING TRAFFIC CONDITIONS

The existing arterial highway system in the study area is illustrated in Figure 4, and the current ADT volumes are illustrated in Figure 5. The ADT counts were collected in 2007 and 2008. Two roadway links on Bonita Canyon Drive within the study area (between Anteater Drive/Shady Canyon Drive and Turtle Ridge Drive and SR-73 northbound ramps and Newport Coast Drive) operate worse than the acceptable LOS "D." It should be noted that since the time of the counts, Bonita Canyon Drive between SR-73 and Anteater Drive/Shady Canyon Drive has been widened to four lanes thereby eliminating the deficiencies at the two roadway links with resulting V/Cs of .75 and .66.

The AM and PM peak hour intersection turn movement counts that were collected in 2007 and 2008 are presented in Figures 6 and 7, respectively, for the intersection locations shown in Figure 8. The ICU values for these counts are summarized in Table 5. The lane configurations assumed in these ICU calculations are illustrated in Figure 9. According to this criterion, all intersections in the study area are at the target level of service "D" or better.

PROJECT IMPACT ANALYSIS

As discussed earlier, the short-range time frame used in this analysis represents the amount of growth that is projected to occur in the next six years at project buildout (referred to as year 2015). Year 2015 baseline (no-project) volumes were formulated using the existing (2007/2008) traffic count volumes as a base, and applying a three percent annual growth factor for seven years (21 percent total) to 2008 counts or eight years (24 percent total) to 2007 counts. Annual (ambient) traffic growth includes traffic growth from non-specific development within and outside the study area and is based on the trend in

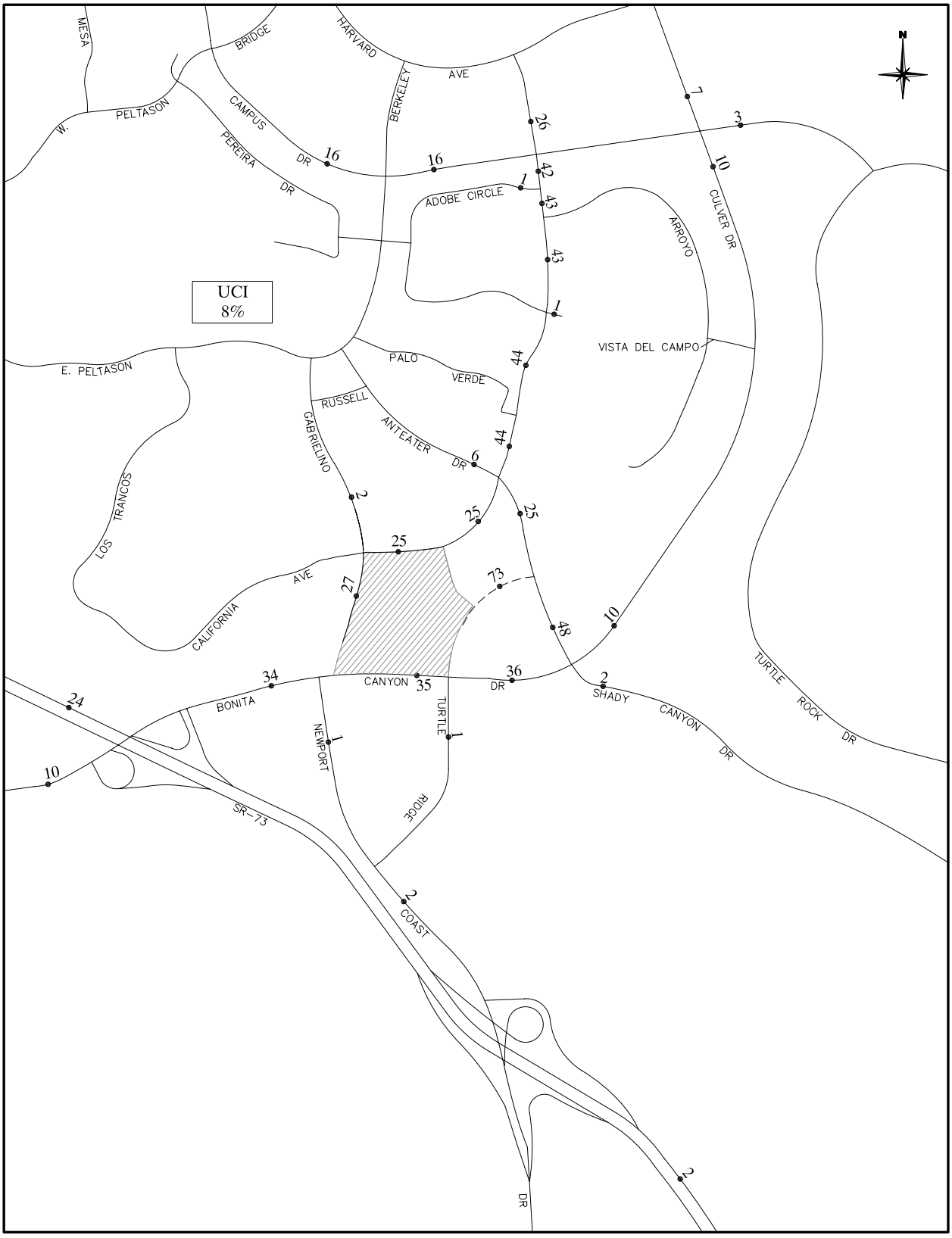
Table 4

UNIVERSITY HILLS AREA 10 FACULTY/STAFF HOUSING PROJECT
LAND USE AND TRIP GENERATION SUMMARY

Land Use	Amount/Unit	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Trip Rates								
Faculty/Staff 3-Bdrm Apt*	DU	.01	.47	.48	.39	.18	.57	9.00
Faculty/Staff (SFD)	DU	.01	.52	.53	.43	.20	.63	10.00
Proposed Project								
Faculty/Staff 3-Bdrm Apt*	120 DU	1	56	57	46	22	68	1,080
Faculty/Staff (SFD)	139 DU	1	72	73	60	28	88	1,390
TOTAL	259 DU	2	128	130	106	50	156	2,470

* Trip rates for 3-bedroom apartments used here for worst-case purposes, actual development may also include 2-bedroom apartments.

Abbreviations: ADT – average daily trips
DU – Dwelling Unit
SFA – Single Family Attached (Clustered Home)
SFD – Single Family Detached

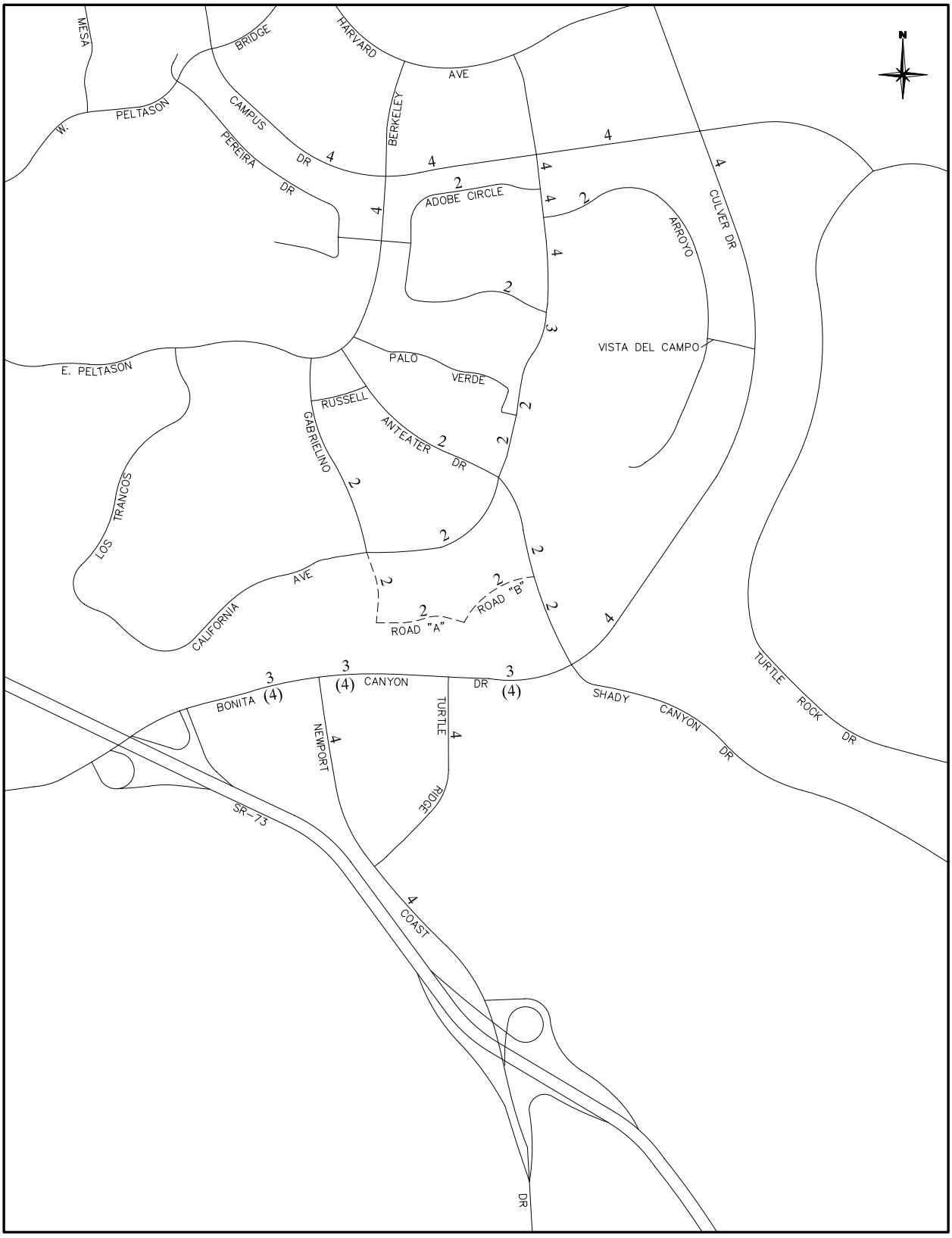


Legend

- XX Percent of project trip distribution
- Project Site
- Future roadway with project

Figure 3

PROJECT TRIP DISTRIBUTION

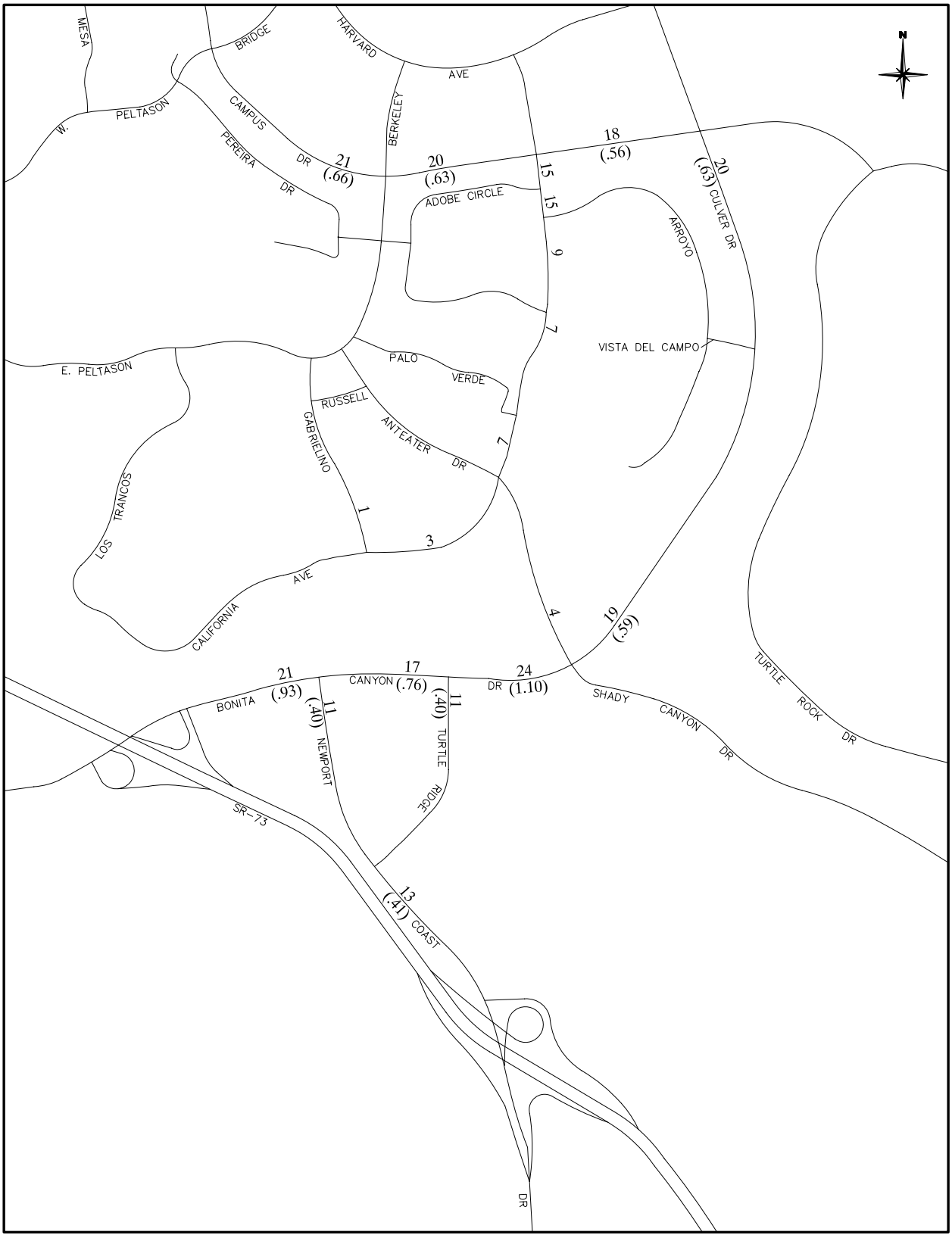


Legend

X Midblock Lanes
(Y) Future Lanes
– – – – – – – Future roadway with project

Figure 4

CIRCULATION SYSTEM (PROJECT VICINITY)



Legend	
XX	ADT Volume (000s)
(.YY)	Volume/Capacity Ratio (Off-Campus Only)

Figure 5

ADT VOLUMES (000s)
- EXISTING (2007 AND 2008)

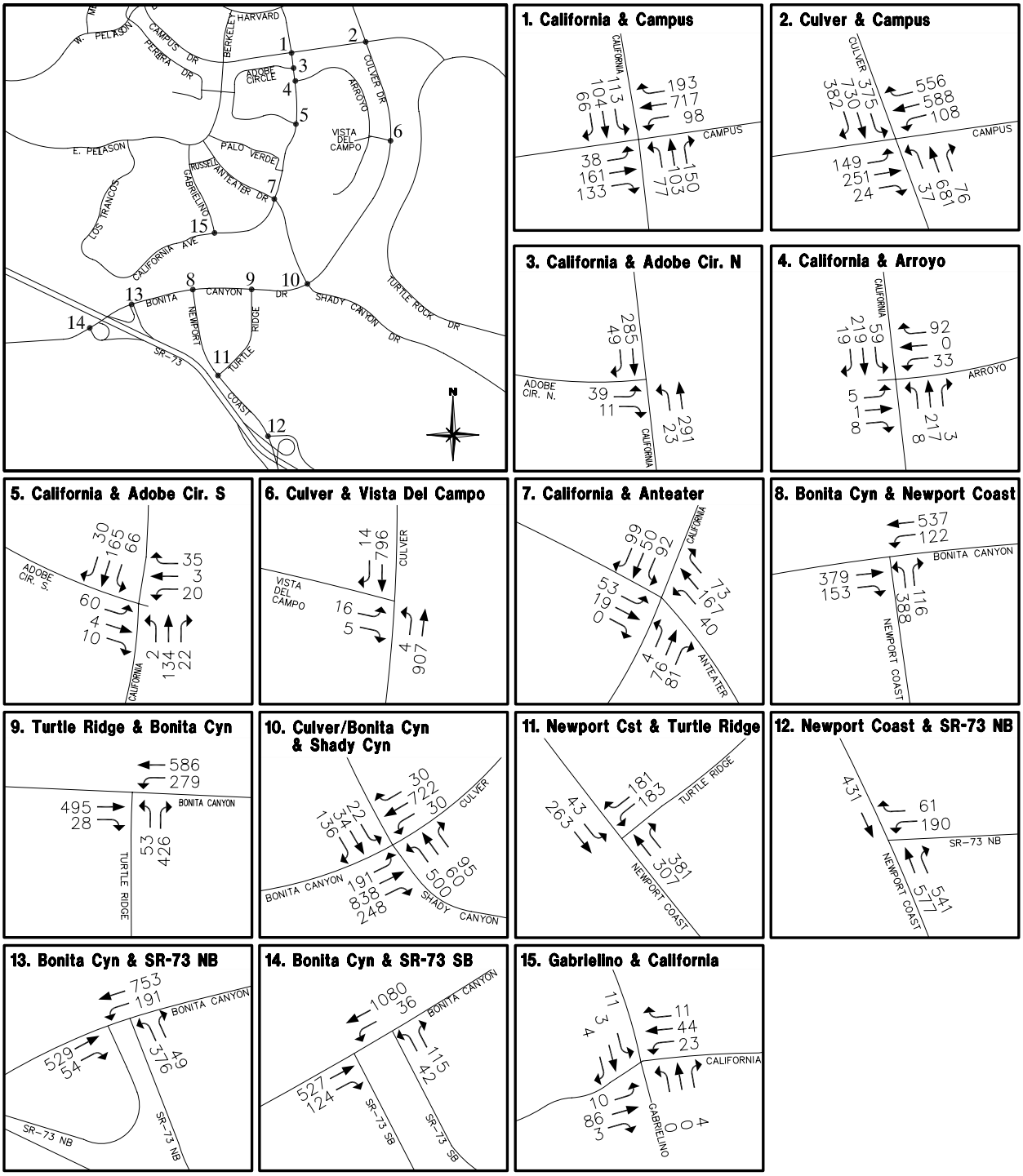


Figure 6

AM PEAK HOUR VOLUMES
- EXISTING (2007 AND 2008)

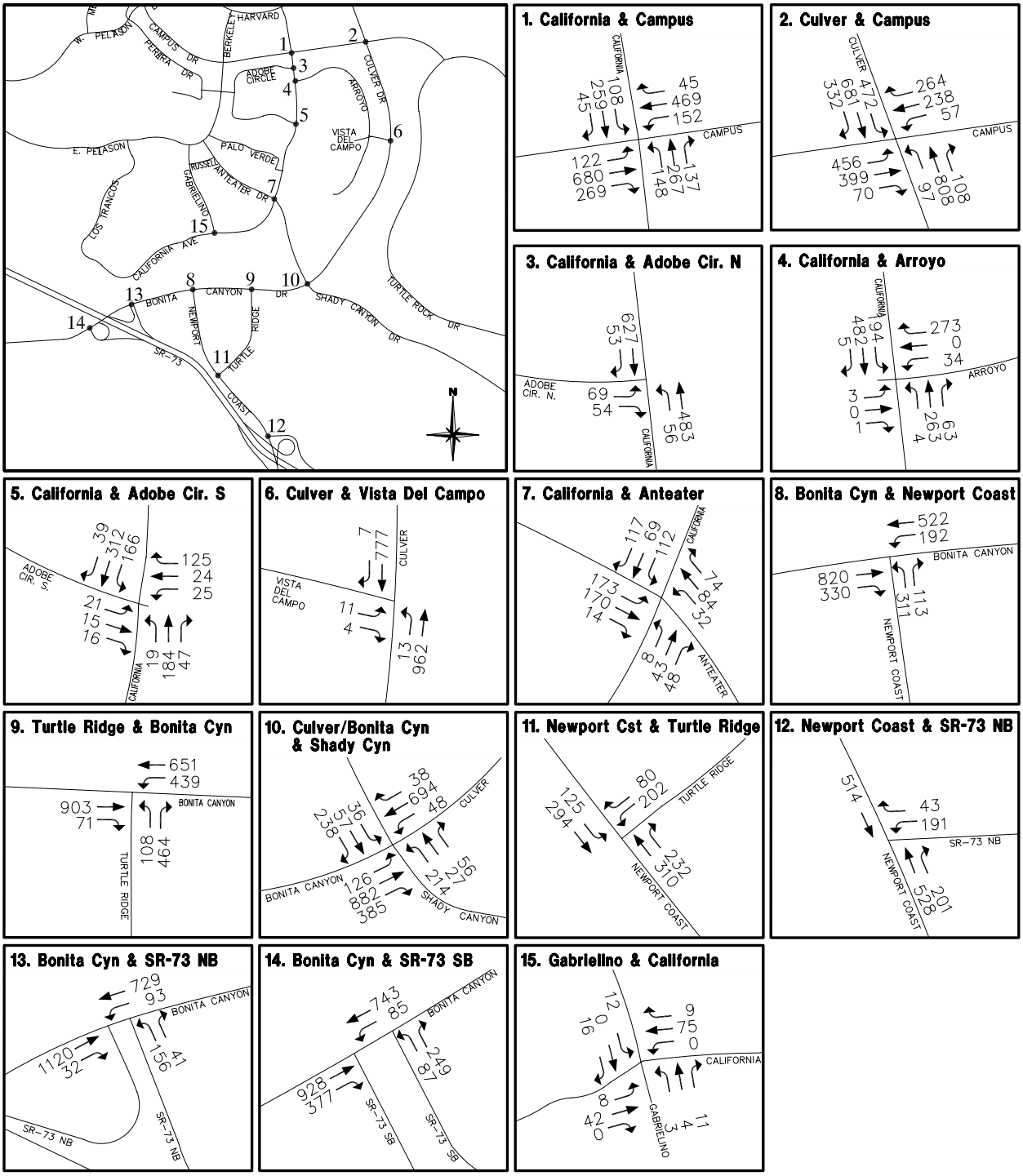
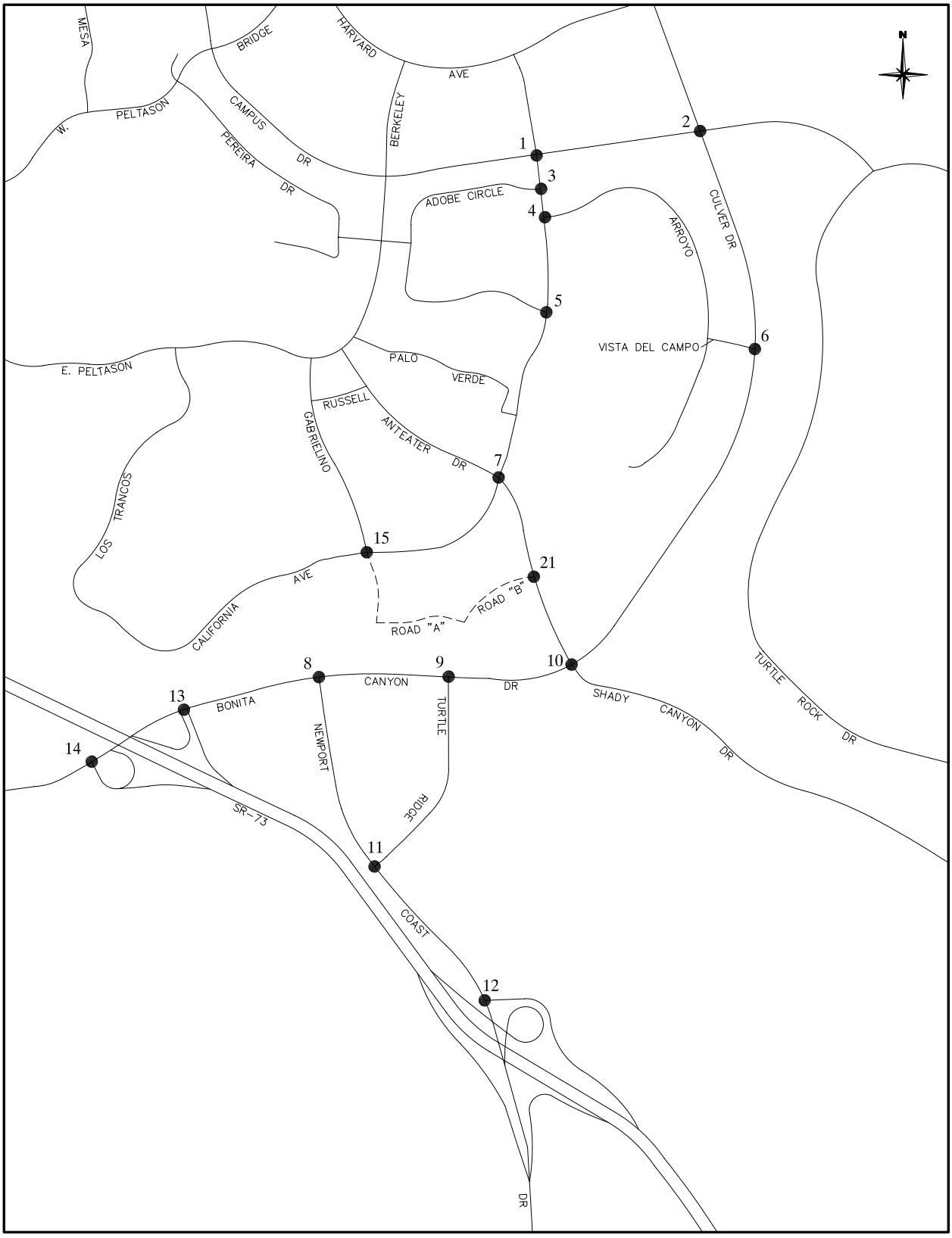


Figure 7

PM PEAK HOUR VOLUMES
- EXISTING (2007 AND 2008)



Legend	Figure 8
– – – – – – Future roadway with project	INTERSECTION LOCATION MAP

Table 5

EXISTING INTERSECTION LOS SUMMARY

Intersection (N/S Rd & E/W Rd)	AM Peak Hour		PM Peak Hour		Count Date
	ICU	LOS	ICU	LOS	
1. California & Campus	.47	A	.66	B	11/28/07
2. Culver Dr. at Campus Dr.	.60	A	.57	A	11/28/07
3. California & Adobe Circle N	.19	A	.35	A	11/28/07
4. California & Arroyo	.22	A	.44	A	11/28/07
5. California & Adobe Circle S	.22	A	.35	A	11/28/07
6. Culver & Vista Del Campo	.33	A	.34	A	11/28/07
7. California & Anteater	.36	A	.36	A	11/28/07
8. Bonita Cyn & Newport Coast	.60	A	.54	A	10/9/08
9. Turtle Ridge & Bonita Cyn	.42	A	.66	B	10/9/08
10. Culver/Bonita Cyn & Shady Cyn	.88	D	.75	C	11/28/07
11. Newport Coast & Turtle Ridge	.35	A	.27	A	10/8/08
12. Newport Coast & SR-73 NB Ramp	.32	A	.28	A	10/9/08
13. Bonita Cyn & SR-73 NB Ramps	.43	A	.48	A	10/9/08
14. Bonita Cyn & SR-73 SB Ramps	.29	A	.48	A	10/9/08
15. Gabrielino & California	.13	A	.12	A	11/18/08

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 – 1.00 E
Above 1.00 F

Abbreviations: ICU – intersection capacity utilization
LOS – level of service

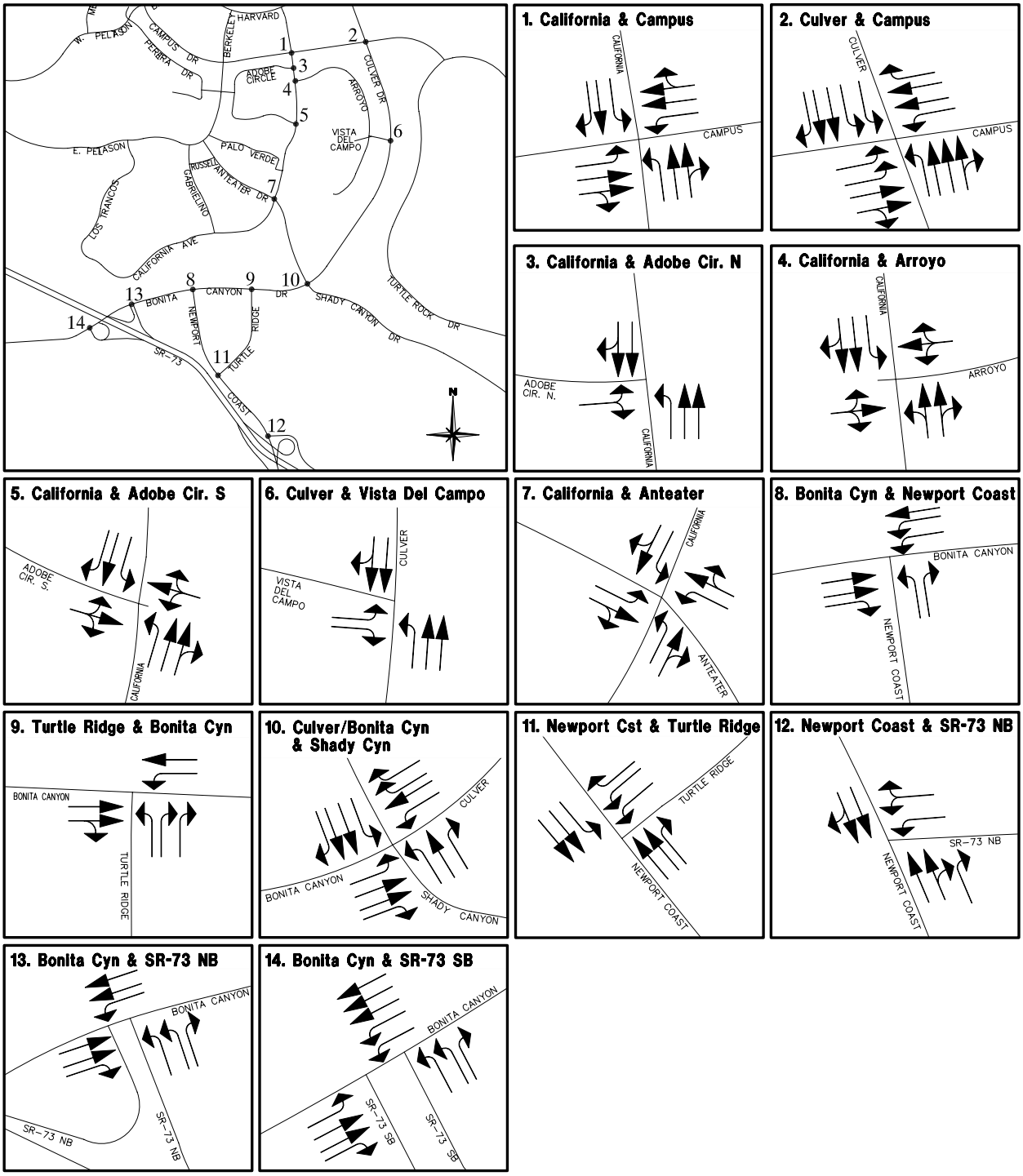


Figure 9

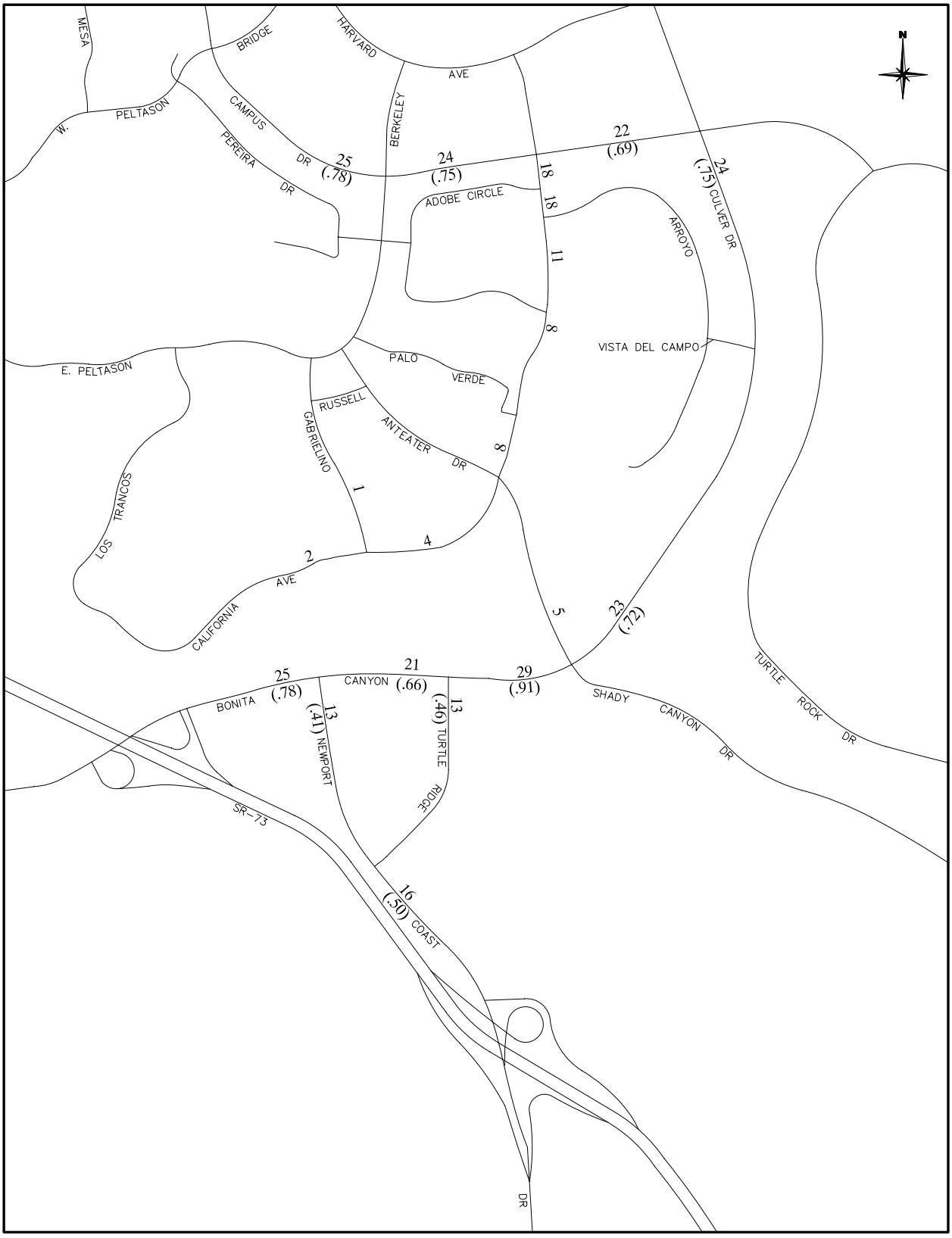
EXISTING (2008) INTERSECTION
LANE CONFIGURATIONS

count data of around two to three percent increase per year in the area according to the City of Irvine's 2005 Circulation Phasing Analysis (three percent has been used here for worst-case purposes). Project-generated traffic volumes are from the University of California, Irvine, Main Campus Traffic Model (UCI MCTM) and based on the project trip distribution derived from the Irvine Transportation Analysis Model (ITAM). The project volumes were then added to the year 2015 no-project volumes, resulting in the year 2015 with-project volumes. It is also assumed in year 2015 that the recently completed improvements on Bonita Canyon Drive between Culver Drive/Shady Canyon Drive and the SR-73 are reflected which include widening to four lanes and associated intersection improvements. Discussion of the potential traffic impacts on only a portion of the proposed project will also be presented. Also assumed with development of the proposed project is a connector road to Anteater Drive on the east side of the proposed project.

Figure 10 presents the year 2015 no-project ADT volumes, and Figure 11 shows the corresponding ADT volumes with the addition of project-generated traffic. Consistent with City of Irvine requirements that require analysis of roadway links, the volume/capacity ratios are shown for off-campus roadway links only. One roadway link on Bonita Canyon Drive within the study area (between Turtle Ridge Drive and Anteater Drive/Shady Canyon Drive) is forecast to operate above LOS "D." The proposed project causes an ADT V/C increase (.91 to .94) that would need to be further analyzed by examining peak hour levels of service. The resulting midblock peak hour V/C ratio for the arterial segment under year 2015 with-project conditions is summarized in Table 6.

As the summary table indicates, the arterial roadway segment is forecast to operate at an acceptable level of service during the peak hour, therefore an actual ADT deficiency is not expected to occur on the arterial segment (i.e., the arterial roadway segment is not considered to be significantly impacted by the proposed project).

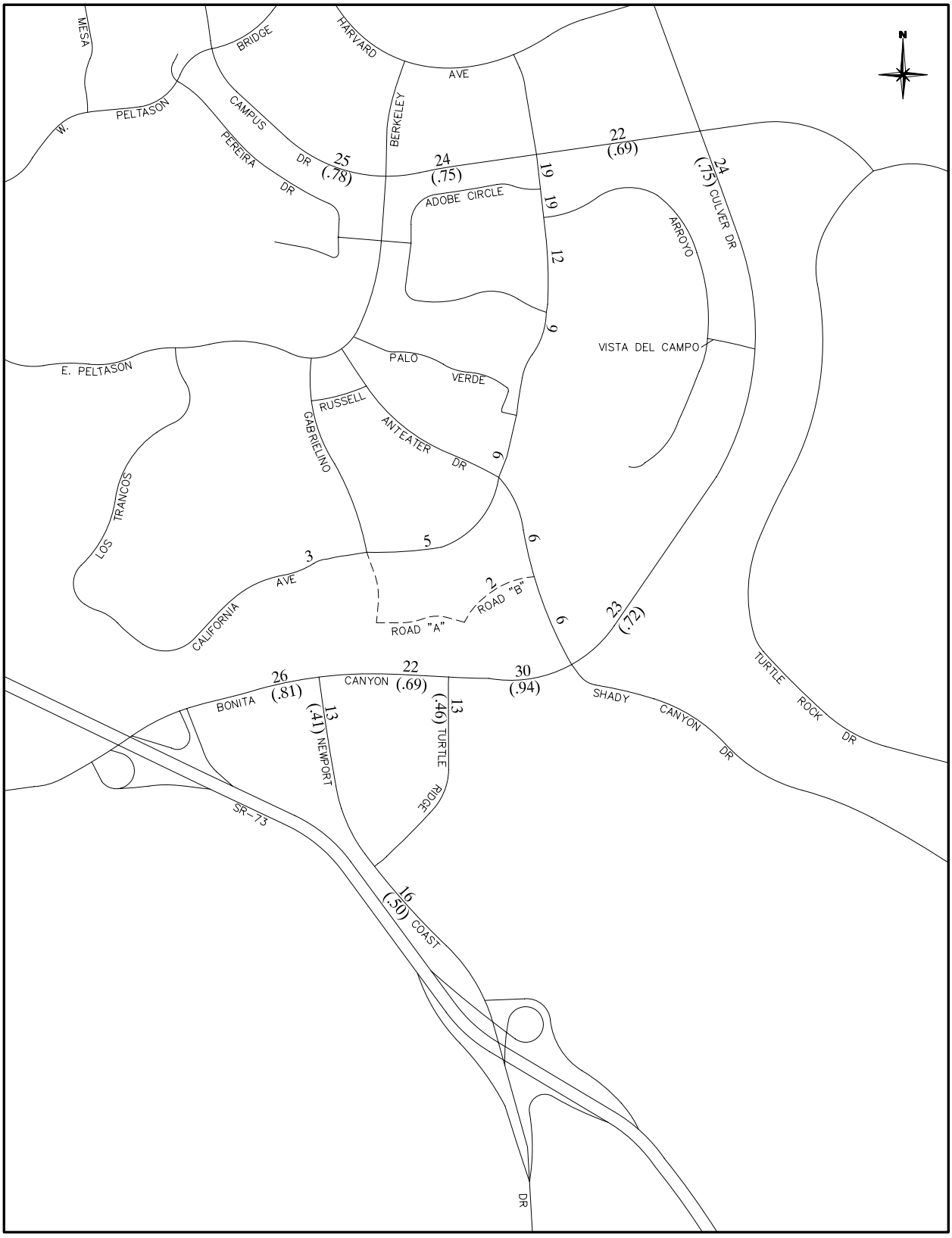
The peak hour volumes for year 2015 no-project and with-project for the intersections analyzed in the study area are presented in Figures 12 through 15. Table 7 summarizes the corresponding peak hour ICU values (see Figure 16 for the lane configurations assumed in these ICU calculations and the Appendix for actual ICU calculation worksheets) for short-range (year 2015) no-project and with project conditions and shows that all locations are operating at an acceptable level of service of LOS "D" or better. Therefore, no location is adversely impacted by the proposed project.



Legend	
XX	ADT Volume (000s)
(.YY)	Volume/Capacity Ratio (Off-Campus Only)

Figure 10

ADT VOLUMES (000s)
- 2015 NO-PROJECT



Legend	
XX	ADT Volume (000s)
(.YY)	Volume/Capacity Ratio (Off-Campus Only)

Figure 11

ADT VOLUMES (000s)
- 2015 WITH-PROJECT

Table 6

YEAR 2015 WITH-PROJECT ARTERIAL ROADWAY PEAK HOUR ANALYSIS SUMMARY

Roadway	Lanes	ADT	Peak Hour Capacity	Highest Peak Volume	Peak Hour V/C	Peak Hour LOS
Bonita Canyon (Turtle Ridge Drive and Anteater Drive/Shady Canyon Drive)	4	30,000	3,200	1,722 (PM Eastbound)	.54	A

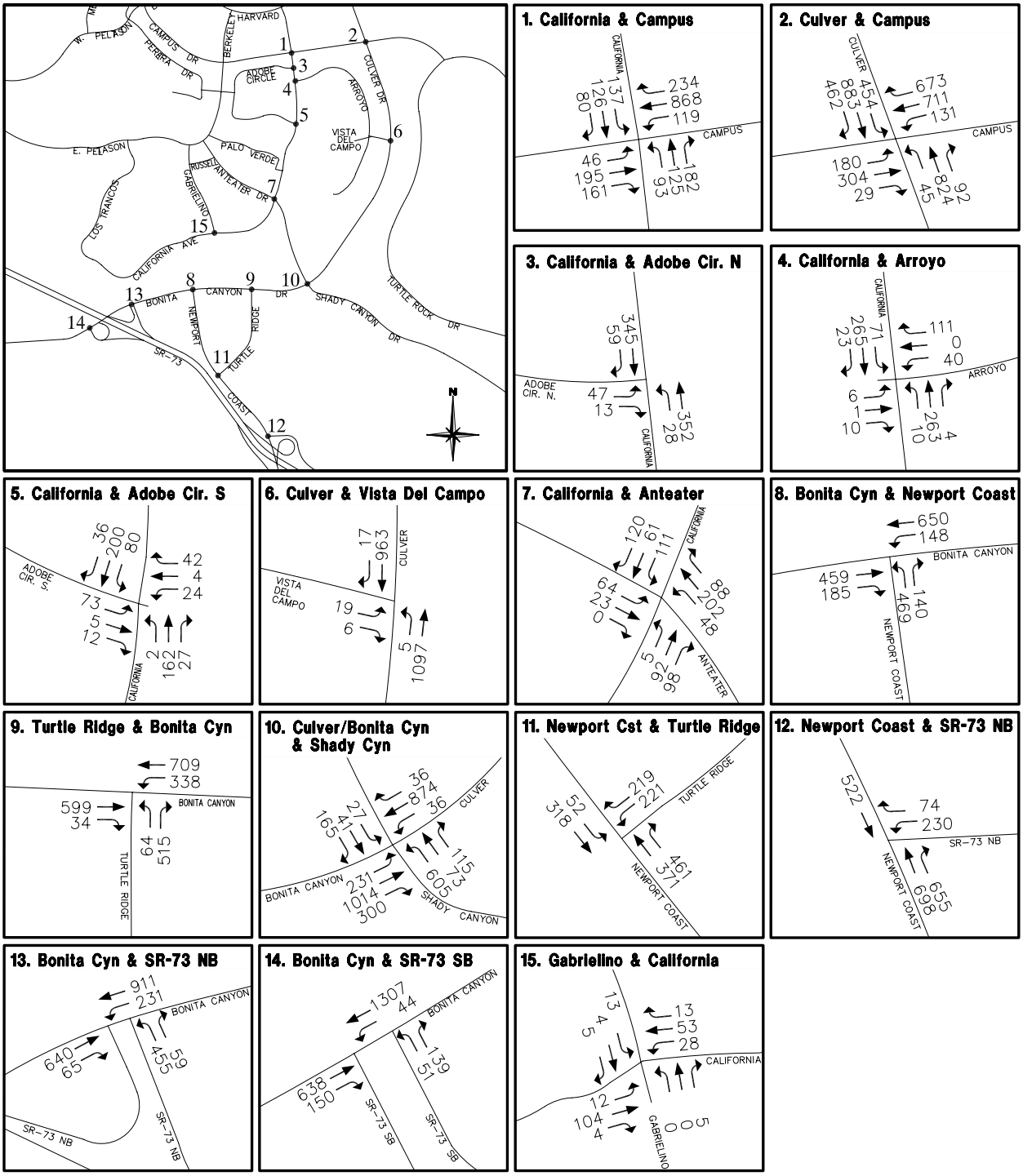


Figure 12

AM PEAK HOUR VOLUMES
- 2015 NO-PROJECT

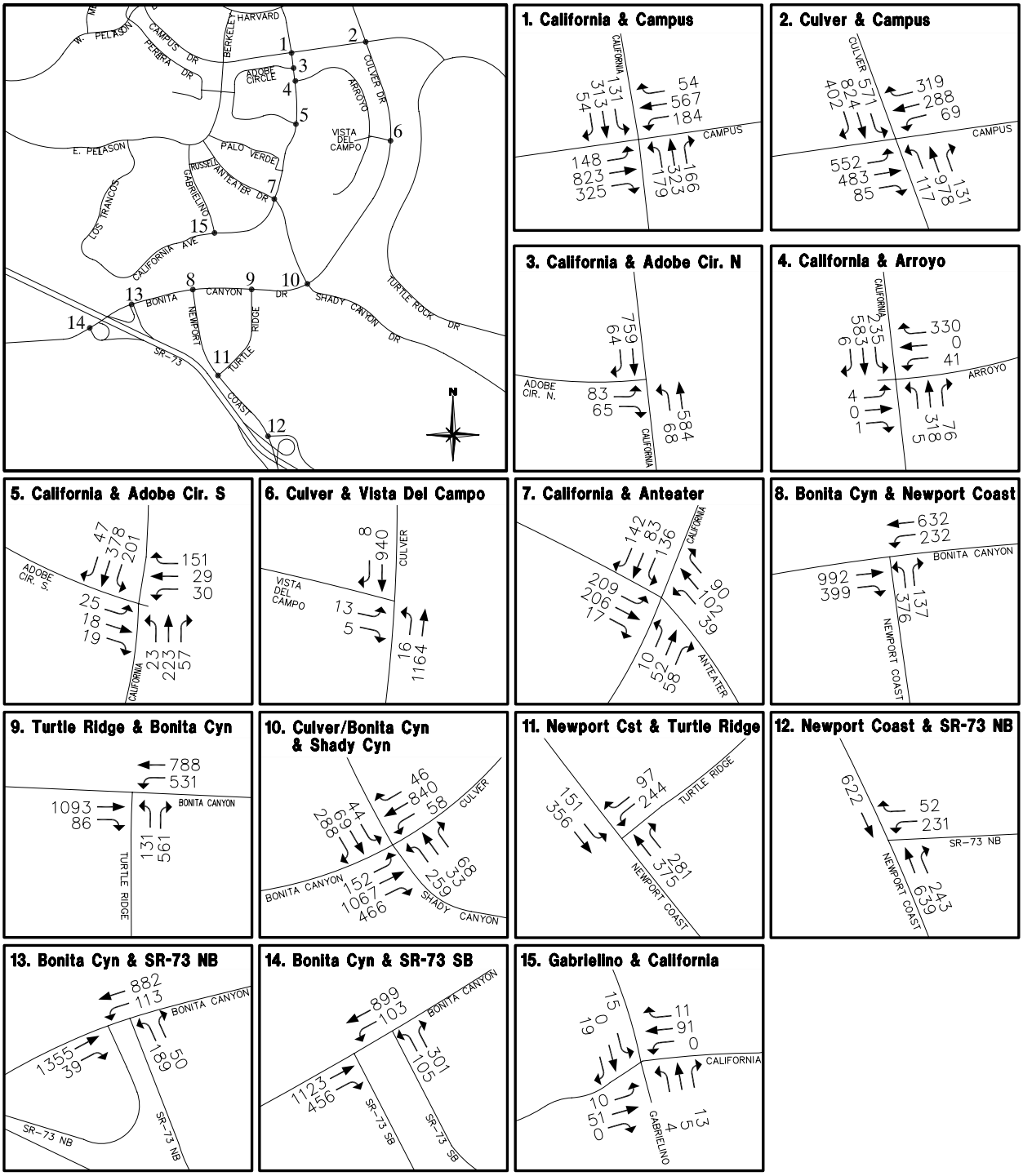
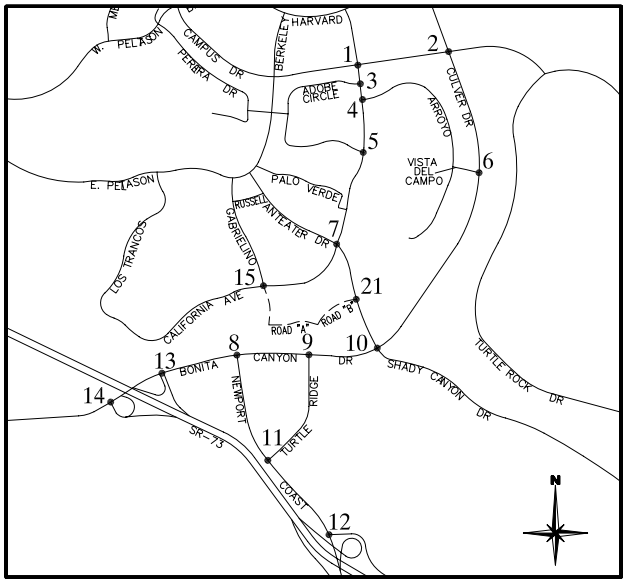
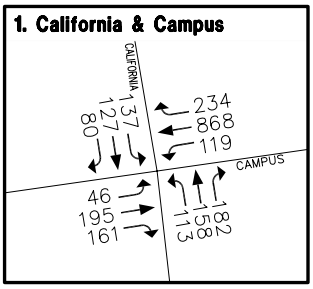
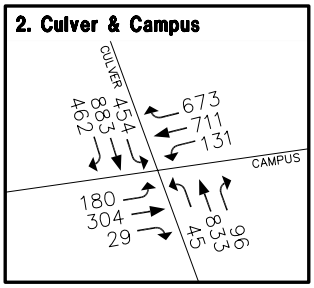


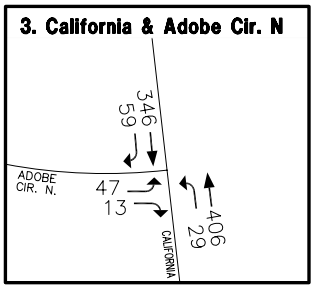
Figure 13

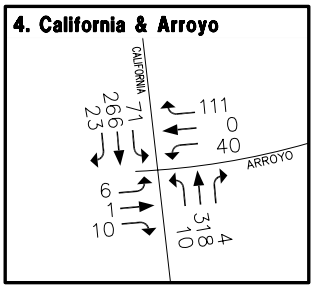
PM PEAK HOUR VOLUMES
- 2015 NO-PROJECT

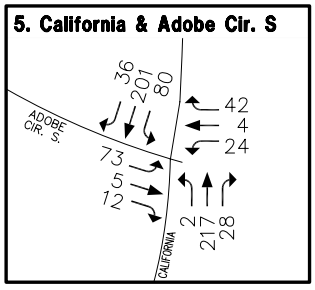


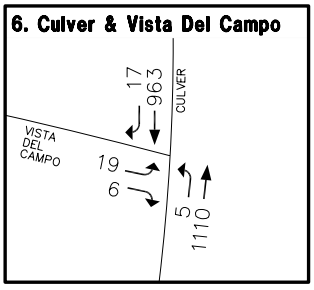


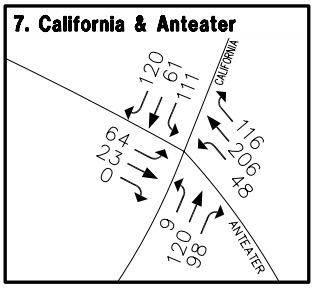


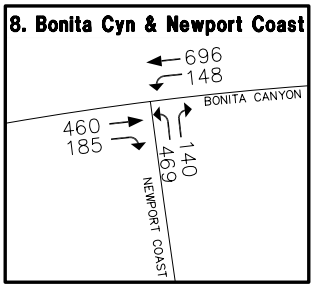


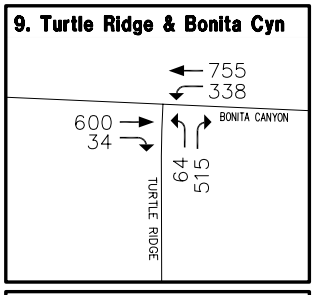


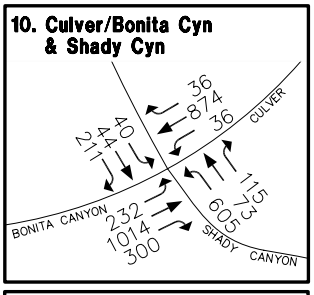


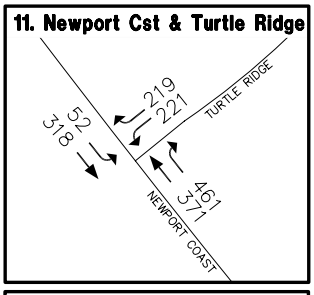


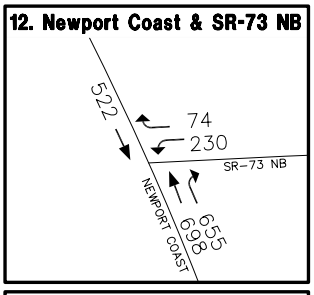


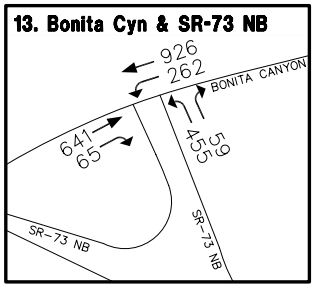


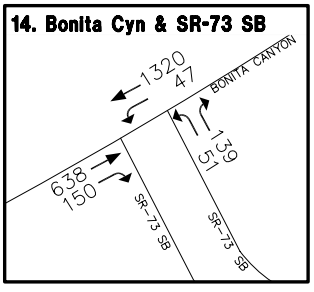


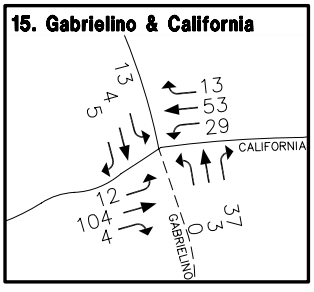


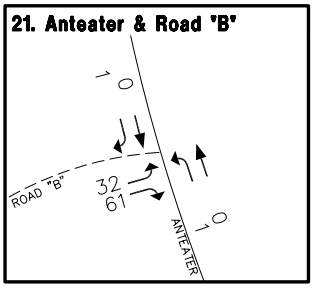










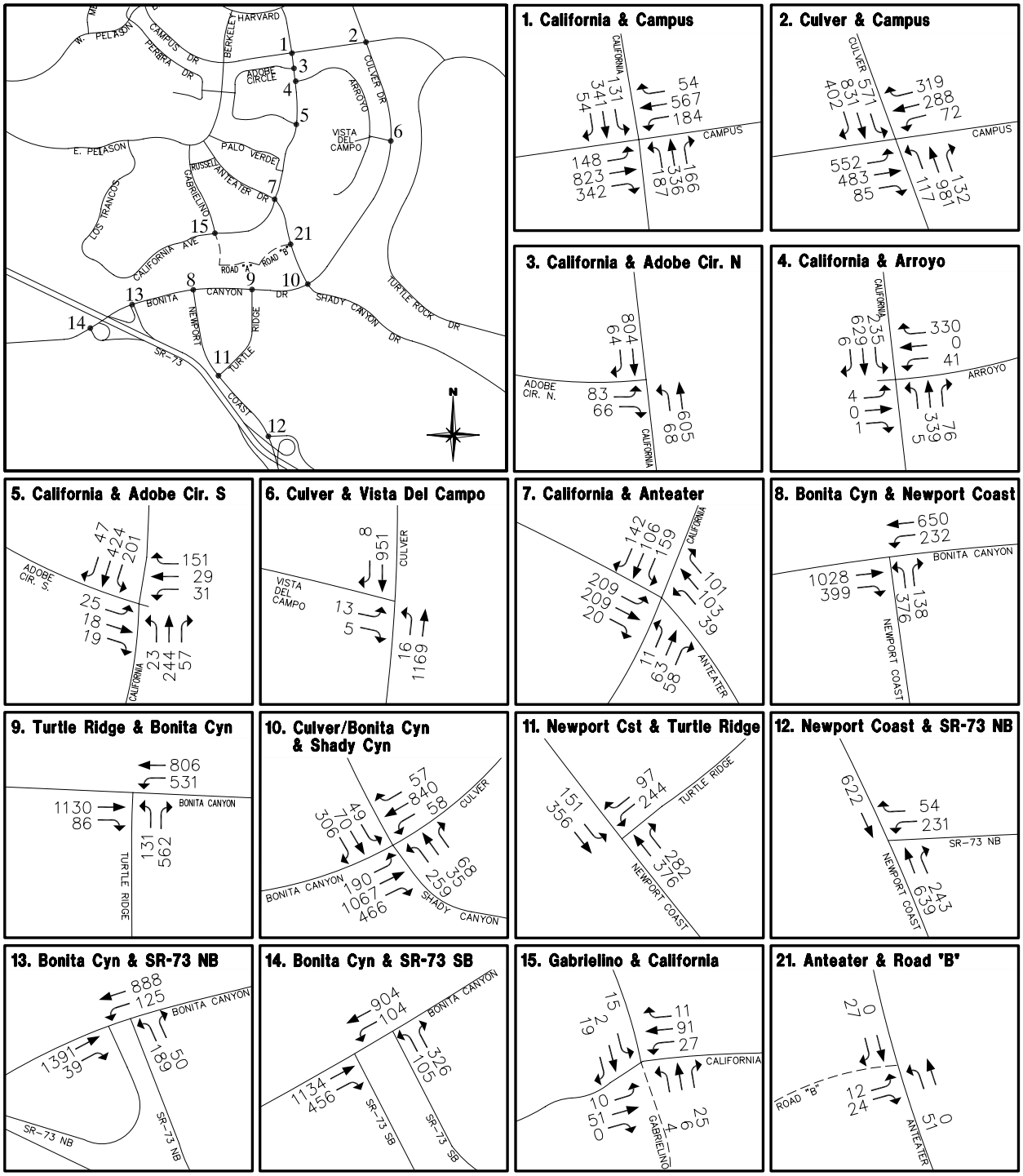


Legend

– – – – – – Future roadway with project

Figure 14

AM PEAK HOUR VOLUMES
- 2015 WITH-PROJECT



Legend	Figure 15
– – – – – – Future roadway with project	PM PEAK HOUR VOLUMES - 2015 WITH-PROJECT

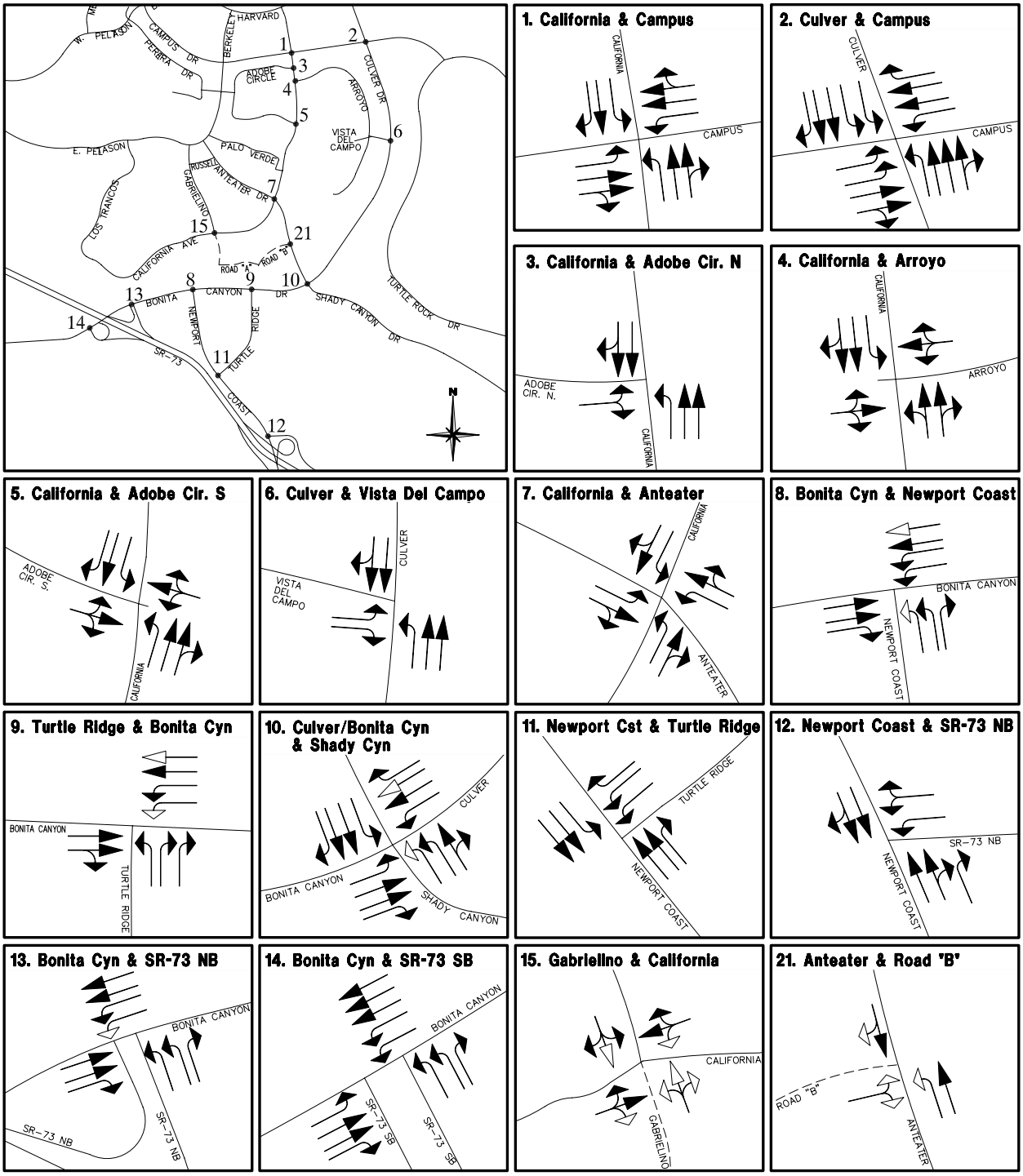
Table 7

YEAR 2015 INTERSECTION LOS SUMMARY

Intersection (N/S Rd & E/W Rd)	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. California & Campus	.55	A	.79	C	.57	A	.81	D
2. Culver & Campus	.71	C	.68	B	.71	C	.68	B
3. California & Adobe Circle N	.23	A	.42	A	.23	A	.44	A
4. California & Arroyo	.26	A	.53	A	.28	A	.53	A
5. California & Adobe Circle S	.25	A	.41	A	.25	A	.44	A
6. Culver & Vista Del Campo	.38	A	.40	A	.39	A	.40	A
7. California & Anteater	.44	A	.42	A	.48	A	.45	A
8. Bonita Cyn & Newport Coast	.38	A	.52	A	.39	A	.53	A
9. Turtle Ridge & Bonita Cyn	.41	A	.64	B	.41	A	.65	B
10. Culver/Bonita Cyn & Shady Cyn	.61	B	.57	A	.63	B	.58	A
11. Newport Coast & Turtle Ridge	.41	A	.33	A	.41	A	.33	A
12. Newport Coast & SR-73 NB Ramps	.38	A	.32	A	.38	A	.32	A
13. Bonita Cyn & SR-73 NB Ramps	.45	A	.54	A	.45	A	.56	A
14. Bonita Cyn & SR-73 SB Ramps	.34	A	.57	A	.34	A	.58	A
15. Gabrielino & California	.15	A	.14	A	.17	A	.17	A
21. Anteater & Road “B”	--	--	--	--	.30	A	.35	A

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 – 1.00 E
Above 1.00 F

Abbreviations: ICU – intersection capacity utilization
LOS – level of service



Legend

Existing lane

Future lane

Future roadway with project

Figure 16

2015 INTERSECTION
LANE CONFIGURATIONS

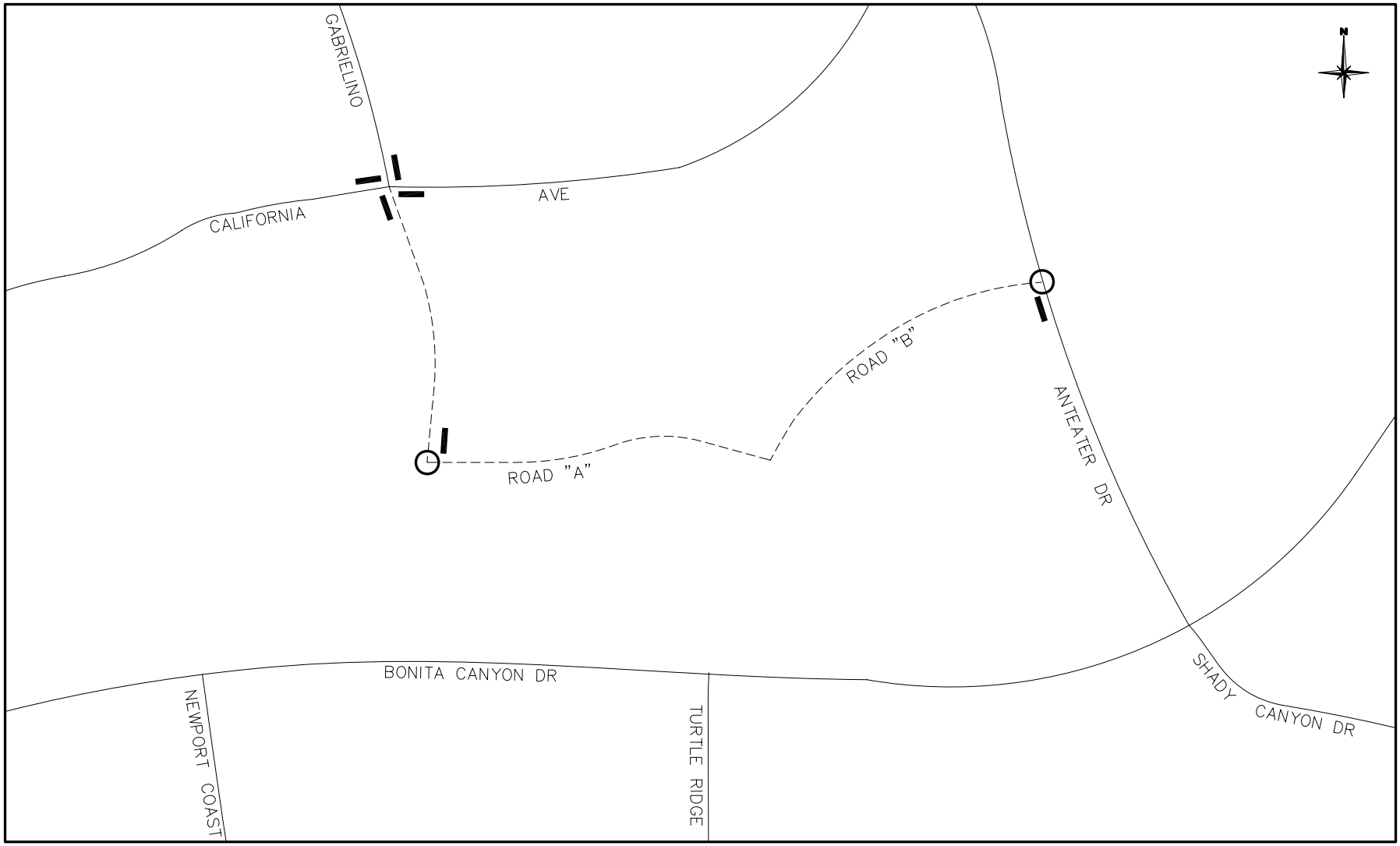
The locations of the proposed project access roadways are conceptually shown in Figure 17. The road circulation within the University Hills residential community, which is comprised mainly of two-lane roads, is not conducive to through traffic, and therefore high peak hour volumes and traffic congestion would not be expected on roads in the project vicinity including Gabrielino Drive, California Avenue, and the proposed project access roadways (Road "A" and Road "B") and the intersections that are formed by these roadways. In addition, there is sufficient spacing and sight distance between proposed project roadways and existing adjacent intersections (i.e., California Avenue intersections at Gabrielino Drive and Anteater Drive).

As previously discussed, no roadway segment or intersection location in the study area is adversely impacted when the proposed project is built out. The same conclusion can be made should only a portion of the proposed project be built due to less trips being generated by the proposed project. As shown previously in Table 7, the intersections of California Avenue at Gabrielino Drive and California Avenue at Anteater Drive show adequate capacity (LOS "A" at both intersections) that if the proposed project access roadway (Road "B") is delayed or not constructed to Anteater Drive under with-project buildout conditions, additional traffic flowing through these intersections could be accommodated without adverse project impacts.

The recommended traffic control measures at the proposed project access roadways on Gabrielino Drive and indirectly to Anteater Drive via a proposed new street are one-way stop signs (as previously shown in Figure 17). These traffic control measures are considered project design features and are included in the project description. An indirect connection to the project is via the currently stop-controlled intersection of Gabrielino Drive and California Avenue where the all-way stop signs are adequate for the anticipated pedestrian traffic at this intersection and for traffic calming purposes (i.e., promoting reduced speeds) along California Avenue.

CONCLUSIONS

Traffic generated by the proposed project does not cause the performance criteria to be exceeded at any of the intersections and off-campus roadway links analyzed within the study area. Therefore with no significant traffic impacts, project mitigation measures are not required. The circulation system analyzed for year 2015 conditions has adequate capacity to accommodate the proposed project land uses.



Legend

- Project Access
- Future roadway with project
- Stop sign

Figure 17

PROJECT ACCESS LOCATIONS

In addition, the assumptions and conclusions of this traffic study are consistent with the findings and conclusions of the traffic analysis prepared for the 2007 LRDP.

REFERENCES

1. "University of California, Irvine, Long Range Development Plan 2007 Update Traffic Study," Austin-Foust Associates, Inc., May 2007.

2. "University of California, Irvine, LRDP Circulation and Open Space Amendment Traffic Study," Austin-Foust Associates, Inc., August 1995.

3. "Traffic Impact Analysis Guidelines," City of Irvine Public Works Department, Adopted August 24, 2004.

4. "UC Irvine University Hills Planning Area 10 Illustrative Site Plan," Adams Streeter Civil Engineers, Inc., January 2009.

Appendix
Intersection Capacity Utilization (ICU) Worksheets

This appendix summarizes information pertaining to the intersection analysis presented in this traffic report.

ICU Calculation Methodology

The ICU calculation procedure is based on a critical movement methodology that shows the amount of capacity utilized by each critical movement at an intersection. A capacity of 1,700 vehicles per hour per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both through and right-turn traffic (typically with a width of 19 feet or more from curb to outside of through-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example for Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:
RTOG = V/C (NBT)
Otherwise,
RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:
RTOR = V/C (WBL)
Otherwise,
RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

RTOG = RTOG + V/C (WBL)
RTOR = RTOR - V/C (WBL)

4. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR
Where factor = RTOR saturation flow factor (0% for County intersections, 75% for intersections in all other jurisdictions within the study area)

Right-turn adjustment is then as follows: Additional ICU = V/C (NBR) – RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/through, through/right, left/through/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Through Lane

1. Average Lane Volume (ALV)

$$ALV = \frac{\text{Left-Turn Volume + Through Volume}}{\text{Total Left + Through Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$\text{ALV (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$\text{ALV (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and through V/C ratios for this case are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$\text{V/C (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Through) is greater than ALV then full dedication to the through approach is warranted, and left-turn and through V/C ratios are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$\text{V/C (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Through) are both less than ALV, the left/through lane is assumed to be truly shared and each left, left/through or through approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/through V/C ratio is calculated as follows:

$$\text{V/C (Left/Through)} = \frac{\text{Left-Turn Volume + Through Volume}}{\text{Total Left + Through Approach Capacity (including shared lane)}}$$

This V/C (Left/Through) ratio is assigned as the V/C (Through) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Through) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:

V/C (Left) = V/C (Through)

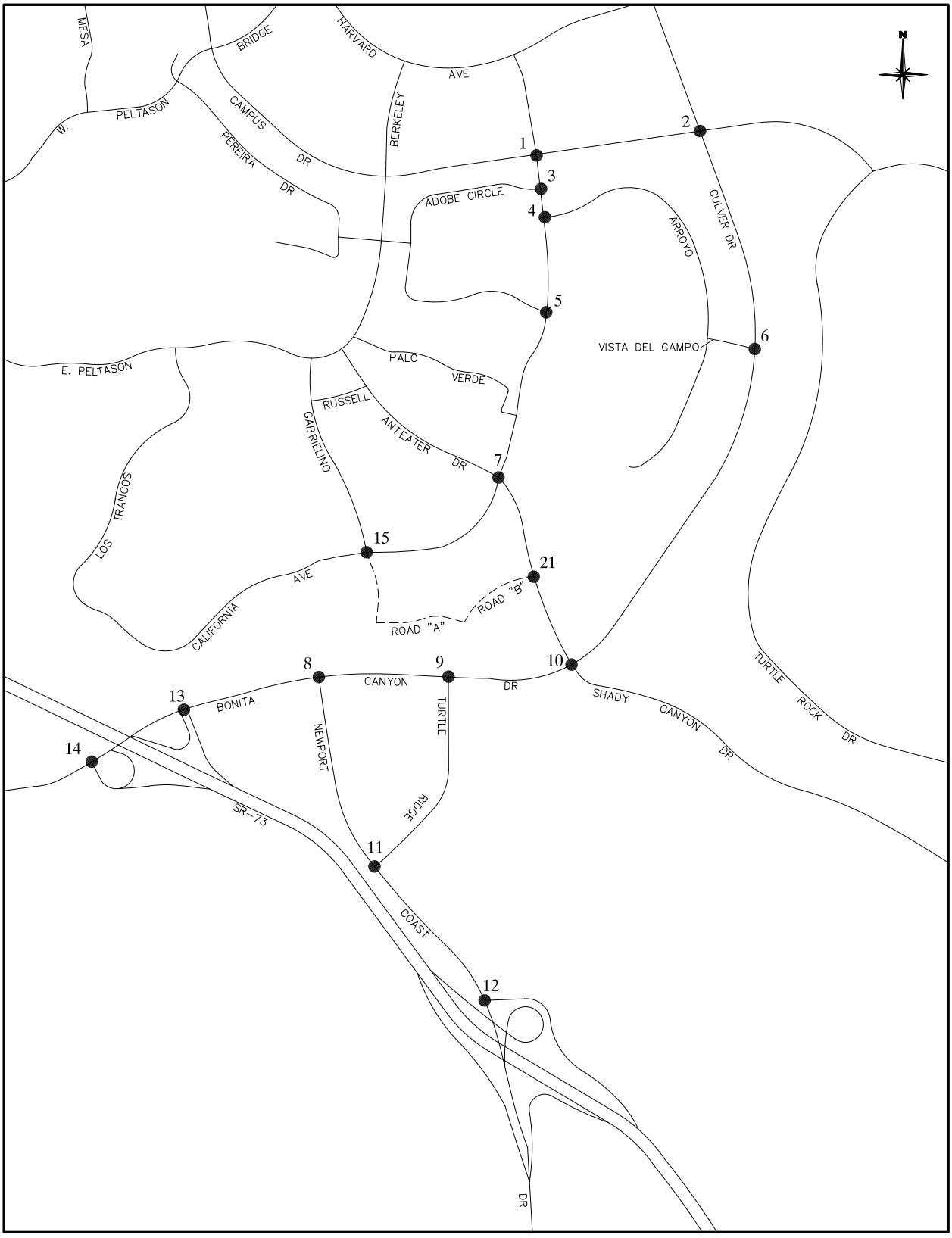
If approach has only one left-turn lane (shared lane), then:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared through/right lanes. If full dedication of a shared through/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity. When an approach contains more than one shared lane (e.g., left/through and through/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

Figure A-1 illustrates the intersections that were analyzed in this study, and the AM and PM peak hour ICU worksheets for existing and year 2015 then follow.



Legend	Figure A-1
– – – – – – Future roadway with project	INTERSECTION LOCATION MAP

1. California & Campus

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	77	.05	148	.09*
NBT	2	3400	103	.06*	267	.12
NBR	0	0	150	.09	137	
SBL	1	1700	113	.07*	108	.06
SBT	1	1700	104	.06	259	.15*
SBR	1	1700	66	.04	45	.03
EBL	1	1700	38	.02*	122	.07
EBT	2	3400	161	.09	680	.28*
EBR	0	0	133		269	
WBL	1	1700	98	.06	152	.09*
WBT	2	3400	717	.27*	469	.15
WBR	0	0	193		45	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.47**		**.66**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	93	.05	179	.11*
NBT	2	3400	125	.07*	323	.14
NBR	0	0	182	.11	166	
SBL	1	1700	137	.08*	131	.08
SBT	1	1700	126	.07	313	.18*
SBR	1	1700	80	.05	54	.03
EBL	1	1700	46	.03*	148	.09
EBT	2	3400	195	.10	823	.34*
EBR	0	0	161		325	
WBL	1	1700	119	.07	184	.11*
WBT	2	3400	868	.32*	567	.18
WBR	0	0	234		54	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.79**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	113	.07	187	.11*
NBT	2	3400	158	.09*	336	.15
NBR	0	0	182	.11	166	
SBL	1	1700	137	.08*	131	.08
SBT	1	1700	127	.07	341	.20*
SBR	1	1700	80	.05	54	.03
EBL	1	1700	46	.03*	148	.09
EBT	2	3400	195	.10	823	.34*
EBR	0	0	161		342	
WBL	1	1700	119	.07	184	.11*
WBT	2	3400	868	.32*	567	.18
WBR	0	0	234		54	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.57**		**.81**

2. Culver & Campus

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	37	.02	97	.06
NBT	3	5100	681	.15*	808	.18*
NBR	0	0	76		108	
SBL	2	3400	375	.11*	472	.14*
SBT	2	3400	730	.21	681	.20
SBR	1	1700	382	.22	332	.20
EBL	2	3400	149	.04*	456	.13*
EBT	2	3400	251	.08	399	.14
EBR	0	0	24		70	
WBL	1	1700	108	.06	57	.03
WBT	2	3400	588	.17*	238	.07*
WBR	1	1700	556	.33	264	.16
Right Turn Adjustment			WBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.57**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	45	.03	117	.07
NBT	3	5100	824	.18*	978	.22*
NBR	0	0	92		131	
SBL	2	3400	454	.13*	571	.17*
SBT	2	3400	883	.26	824	.24
SBR	1	1700	462	.27	402	.24
EBL	2	3400	180	.05*	552	.16*
EBT	2	3400	304	.10	483	.17
EBR	0	0	29		85	
WBL	1	1700	131	.08	69	.04
WBT	2	3400	711	.21*	288	.08*
WBR	1	1700	673	.40	319	.19
Right Turn Adjustment			WBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.68**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	45	.03	117	.07
NBT	3	5100	833	.18*	981	.22*
NBR	0	0	96		132	
SBL	2	3400	454	.13*	571	.17*
SBT	2	3400	883	.26	831	.24
SBR	1	1700	462	.27	402	.24
EBL	2	3400	180	.05*	552	.16*
EBT	2	3400	304	.10	483	.17
EBR	0	0	29		85	
WBL	1	1700	131	.08	72	.04
WBT	2	3400	711	.21*	288	.08*
WBR	1	1700	673	.40	319	.19
Right Turn Adjustment			WBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.68**

3. California & Adobe Circle N

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	23	.01*	56	.03*
NBT	2	3400	291	.09	483	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	285	.10*	627	.20*
SBR	0	0	49		53	
EBL	0	0	39		69	
EBT	1	1700	0	.03*	0	.07*
EBR	0	0	11		54	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.19**		**.35**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	28	.02*	68	.04*
NBT	2	3400	352	.10	584	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	345	.12*	759	.24*
SBR	0	0	59		64	
EBL	0	0	47		83	
EBT	1	1700	0	.04*	0	.09*
EBR	0	0	13		65	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.23**		**.42**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	29	.02*	68	.04*
NBT	2	3400	406	.12	605	.18
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	346	.12*	804	.26*
SBR	0	0	59		64	
EBL	0	0	47		83	
EBT	1	1700	0	.04*	0	.09*
EBR	0	0	13		66	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.23**		**.44**

4. California & Arroyo

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		8		4	
NBT	1.5	3400	217	.07*	263	.10*
NBR	0		3		63	
SBL	1	1700	59	.03*	194	.11*
SBT	2	3400	219	.07	482	.14
SBR	0	0	19		5	
EBL	0	0	5		3	
EBT	1	1700	1	.01	0	.00
EBR	0	0	8		1	
WBL	0	0	33		34	
WBT	1	1700	0	.07*	0	.18*
WBR	0	0	92		273	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.22**		**.44**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		10		5	
NBT	1.5	3400	263	.08*	318	.12*
NBR	0		4		76	
SBL	1	1700	71	.04*	235	.14*
SBT	2	3400	265	.08	583	.17
SBR	0	0	23		6	
EBL	0	0	6		4	
EBT	1	1700	1	.01	0	.00
EBR	0	0	10		1	
WBL	0	0	40		41	
WBT	1	1700	0	.09*	0	.22*
WBR	0	0	111		330	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.26**		**.53**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		10		5	
NBT	1.5	3400	318	.10*	339	.12*
NBR	0		4		76	
SBL	1	1700	71	.04*	235	.14*
SBT	2	3400	266	.09	629	.19
SBR	0	0	23		6	
EBL	0	0	6		4	
EBT	1	1700	1	.01	0	.00
EBR	0	0	10		1	
WBL	0	0	40		41	
WBT	1	1700	0	.09*	0	.22*
WBR	0	0	111		330	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.28**		**.53**

5. California & Adobe Circle S

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	2	.00	19	.01*
NBT	2	3400	134	.05	184	.07
NBR	0	0	22		47	
SBL	1	1700	66	.04	166	.10
SBT	1	1700	165	.10*	312	.18*
SBR	1	1700	30	.02	39	.02
EBL	0	0	60	{.04}*	21	{.01}*
EBT	1	1700	4	.04	15	.03
EBR	0	0	10		16	
WBL	0	0	20		25	
WBT	1	1700	3	.03*	24	.10*
WBR	0	0	35		125	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.22**		**.35**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	2	.00	23	.01*
NBT	2	3400	162	.06	223	.08
NBR	0	0	27		57	
SBL	1	1700	80	.05	201	.12
SBT	1	1700	200	.12*	378	.22*
SBR	1	1700	36	.02	47	.03
EBL	0	0	73	{.04}*	25	{.01}*
EBT	1	1700	5	.05	18	.04
EBR	0	0	12		19	
WBL	0	0	24		30	
WBT	1	1700	4	.04*	29	.12*
WBR	0	0	42		151	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.25**		**.41**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	2	.00	23	.01*
NBT	2	3400	217	.07*	244	.09
NBR	0	0	28		57	
SBL	1	1700	80	.05*	201	.12
SBT	1	1700	201	.12	424	.25*
SBR	1	1700	36	.02	47	.03
EBL	0	0	73	{.04}*	25	{.01}*
EBT	1	1700	5	.05	18	.04
EBR	0	0	12		19	
WBL	0	0	24		31	
WBT	1	1700	4	.04*	29	.12*
WBR	0	0	42		151	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.25**		**.44**

6. Culver & Vista Del Campo

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	13	.01
NBT	2	3400	907	.27*	962	.28*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	796	.24	777	.23
SBR	0	0	14		7	
EBL	1	1700	16	.01*	11	.01*
EBT	0	0	0		0	
EBR	1	1700	5	.00	4	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.33**		**.34**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	5	.00	16	.01
NBT	2	3400	1097	.32*	1164	.34*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	963	.29	940	.28
SBR	0	0	17		8	
EBL	1	1700	19	.01*	13	.01*
EBT	0	0	0		0	
EBR	1	1700	6	.00	5	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.38**		**.40**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	5	.00	16	.01
NBT	2	3400	1110	.33*	1169	.34*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	963	.29	951	.28
SBR	0	0	17		8	
EBL	1	1700	19	.01*	13	.01*
EBT	0	0	0		0	
EBR	1	1700	6	.00	5	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.40**

7. California & Anteater

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	4	.00	8	.00
NBT	1	1700	76	.09*	43	.05*
NBR	0	0	81		48	
SBL	1	1700	92	.05*	112	.07*
SBT	1	1700	50	.09	69	.11
SBR	0	0	99		117	
EBL	1	1700	53	.03*	173	.10*
EBT	1	1700	19	.01	170	.11
EBR	0	0	0		14	
WBL	1	1700	40	.02	32	.02
WBT	1	1700	167	.14*	84	.09*
WBR	0	0	73		74	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.36**		**.36**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	5	.00	10	.01
NBT	1	1700	92	.11*	52	.06*
NBR	0	0	98		58	
SBL	1	1700	111	.07*	136	.08*
SBT	1	1700	61	.11	83	.13
SBR	0	0	120		142	
EBL	1	1700	64	.04*	209	.12*
EBT	1	1700	23	.01	206	.13
EBR	0	0	0		17	
WBL	1	1700	48	.03	39	.02
WBT	1	1700	202	.17*	102	.11*
WBR	0	0	88		90	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.44**		**.42**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	9	.01	11	.01*
NBT	1	1700	120	.13*	63	.07
NBR	0	0	98		58	
SBL	1	1700	111	.07*	159	.09
SBT	1	1700	61	.11	106	.15*
SBR	0	0	120		142	
EBL	1	1700	64	.04*	209	.12*
EBT	1	1700	23	.01	209	.13
EBR	0	0	0		20	
WBL	1	1700	48	.03	39	.02
WBT	1	1700	206	.19*	103	.12*
WBR	0	0	116		101	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.45**

8. Bonita Cyn & Newport Coast

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	379	.11	820	.24
NBR	1	1700	153	.09	330	.19
SBL	2	3400	122	.04	192	.06
SBT	1	1700	537	.32*	522	.31*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	388	.23*	311	.18*
WBT	0	0	0		0	
WBR	1	1700	116	.07	113	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.54**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	459	.14	992	.29*
NBR	1	1700	185	.11	399	.23
SBL	2	3400	148	.04	232	.07*
SBT	2	3400	650	.19*	632	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	469	.14*	376	.11*
WBT	0	0	0		0	
WBR	1	1700	140	.08	137	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.38**		**.52**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	460	.14	1028	.30*
NBR	1	1700	185	.11	399	.23
SBL	2	3400	148	.04	232	.07*
SBT	2	3400	696	.20*	650	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	469	.14*	376	.11*
WBT	0	0	0		0	
WBR	1	1700	140	.08	138	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.39**		**.53**

9. Turtle Ridge & Bonita Cyn

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	53	.03*	108	.06*
NBT	0	0	0		0	
NBR	2	3400	426	.13	464	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	495	.15	903	.29*
EBR	0	0	28		71	
WBL	1	1700	279	.16	439	.26*
WBT	1	1700	586	.34*	651	.38
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.42**		**.66**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	64	.04*	131	.08*
NBT	0	0	0		0	
NBR	2	3400	515	.15	561	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	599	.19*	1093	.35*
EBR	0	0	34		86	
WBL	2	3400	338	.10*	531	.16*
WBT	2	3400	709	.21	788	.23
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.41**		**.64**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	64	.04*	131	.08*
NBT	0	0	0		0	
NBR	2	3400	515	.15	562	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	600	.19*	1130	.36*
EBR	0	0	34		86	
WBL	2	3400	338	.10*	531	.16*
WBT	2	3400	755	.22	806	.24
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.41**		**.65**

10. Culver/Bonita Cyn & Shady Cyn

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	191	.11*	126	.07*
NBT	2	3400	838	.25	882	.26
NBR	1	1700	248	.15	385	.23
SBL	1	1700	30	.02	48	.03
SBT	1	1700	722	.42*	694	.41*
SBR	2	3400	30	.01	38	.01
EBL	1	1700	22	.01	36	.02
EBT	2	3400	34	.01*	57	.02*
EBR	1	1700	136	.08	238	.14
WBL	1	1700	500	.29*	214	.13*
WBT	1	1700	60	.04	27	.02
WBR	1	1700	95	.06	56	.03
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.75**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	231	.07*	152	.04
NBT	2	3400	1014	.30	1067	.31*
NBR	1	1700	300	.18	466	.27
SBL	1	1700	36	.02	58	.03*
SBT	2	3400	874	.26*	840	.25
SBR	1	1700	36	.02	46	.03
EBL	1	1700	27	.02	44	.03
EBT	2	3400	41	.01*	69	.02*
EBR	1	1700	165	.10	288	.17
WBL	2	3400	605	.18*	259	.08*
WBT	1	1700	73	.11	33	.06
WBR	0	0	115		68	
Right Turn Adjustment			EBR	.04*	EBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.61**		**.57**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	232	.07*	190	.06
NBT	2	3400	1014	.30	1067	.31*
NBR	1	1700	300	.18	466	.27
SBL	1	1700	36	.02	58	.03*
SBT	2	3400	874	.26*	840	.25
SBR	1	1700	36	.02	57	.03
EBL	1	1700	40	.02	49	.03
EBT	2	3400	44	.01*	70	.02*
EBR	1	1700	211	.12	306	.18
WBL	2	3400	605	.18*	259	.08*
WBT	1	1700	73	.11	35	.06
WBR	0	0	115		68	
Right Turn Adjustment			EBR	.06*	EBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.58**

11. Newport Coast & Turtle Ridge

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	307	.09*	310	.09*
NBR	1	1700	381	.22	232	.14
SBL	1	1700	43	.03*	125	.07*
SBT	2	3400	263	.08	294	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	183	.05*	202	.06*
WBT	0	0	0		0	
WBR	1	1700	181	.11	80	.05
Right Turn Adjustment			Multi	.13*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.35**		**.27**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	371	.11*	375	.11*
NBR	1	1700	461	.27	281	.17
SBL	1	1700	52	.03*	151	.09*
SBT	2	3400	318	.09	356	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	221	.07*	244	.07*
WBT	0	0	0		0	
WBR	1	1700	219	.13	97	.06
Right Turn Adjustment			Multi	.15*	NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.41**		**.33**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	371	.11*	376	.11*
NBR	1	1700	461	.27	282	.17
SBL	1	1700	52	.03*	151	.09*
SBT	2	3400	318	.09	356	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	221	.07*	244	.07*
WBT	0	0	0		0	
WBR	1	1700	219	.13	97	.06
Right Turn Adjustment			Multi	.15*	NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.41**		**.33**

12. Newport Coast & SR-73 NB Ram

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1.5	5100	577	{.20}*	528	.16*
NBR	1.5		541		201	.12
SBL	0	0	0		0	
SBT	2	3400	431	.13	514	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		190		191	
WBT	0	3400	0	.07*	0	.07*
WBR	0.5		61		43	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.32** **.28**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1.5	5100	698	{.24}*	639	.19*
NBR	1.5		655		243	.14
SBL	0	0	0		0	
SBT	2	3400	522	.15	622	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		230		231	
WBT	0	3400	0	.09*	0	.08*
WBR	0.5		74		52	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.38** **.32**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1.5	5100	698	{.24}*	639	.19*
NBR	1.5		655		243	.14
SBL	0	0	0		0	
SBT	2	3400	522	.15	622	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		230		231	
WBT	0	3400	0	.09*	0	.08*
WBR	0.5		74		54	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.38** **.32**

13. Bonita Cyn & SR-73 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	529	.16*	1120	.33*
NBR	1	1700	54	.03	32	.02
SBL	1	1700	191	.11*	93	.05*
SBT	2	3400	753	.22	729	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	376	.11*	156	.05*
WBT	0	0	0		0	
WBR	1	1700	49	.03	41	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.43**		**.48**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	640	.19	1355	.40*
NBR	1	1700	65	.04	39	.02
SBL	2	3400	231	.07	113	.03*
SBT	2	3400	911	.27*	882	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	455	.13*	189	.06*
WBT	0	0	0		0	
WBR	1	1700	59	.03	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.45**		**.54**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	641	.19	1391	.41*
NBR	1	1700	65	.04	39	.02
SBL	2	3400	262	.08	125	.04*
SBT	2	3400	926	.27*	888	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	455	.13*	189	.06*
WBT	0	0	0		0	
WBR	1	1700	59	.03	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.45**		**.56**

14. Bonita Cyn & SR-73 SB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	3	.00
NBT	2	3400	527	.16	928	.27*
NBR	1	1700	124	.07	377	.22
SBL	2	3400	36	.01	85	.03*
SBT	3	5100	1080	.21*	743	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	42	.01*	87	.03*
WBT	0	0	0		0	
WBR	1	1700	115	.07	249	.15
Right Turn Adjustment			WBR	.02*	WBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.29**		**.48**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	4	.00
NBT	2	3400	638	.19	1123	.33*
NBR	1	1700	150	.09	456	.27
SBL	2	3400	44	.01	103	.03*
SBT	3	5100	1307	.26*	899	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	51	.02*	105	.03*
WBT	0	0	0		0	
WBR	1	1700	139	.08	301	.18
Right Turn Adjustment			WBR	.01*	WBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.34**		**.57**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	4	.00
NBT	2	3400	638	.19	1134	.33*
NBR	1	1700	150	.09	456	.27
SBL	2	3400	47	.01	104	.03*
SBT	3	5100	1320	.26*	904	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	51	.02*	105	.03*
WBT	0	0	0		0	
WBR	1	1700	139	.08	326	.19
Right Turn Adjustment			WBR	.01*	WBR	.14*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.34**		**.58**

15. Gabrielino & California

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		3	
NBT	1	1700	0	.00	4	.01
NBR	0	0	4		11	
SBL	0	0	11		12	
SBT	1	1700	3	.01*	0	.02*
SBR	0	0	4		16	
EBL	0	0	10		8	
EBT	1	1700	86	.06*	42	.03
EBR	0	0	3		0	
WBL	0	0	23	{.01}*	0	
WBT	1	1700	44	.05	75	.05*
WBR	0	0	11		9	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.13**		**.12**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		4	
NBT	1	1700	0	.00	5	.01
NBR	0	0	5		13	
SBL	0	0	13		15	
SBT	1	1700	4	.01*	0	.02*
SBR	0	0	5		19	
EBL	0	0	12		10	{.01}*
EBT	1	1700	104	.07*	51	.04
EBR	0	0	4		0	
WBL	0	0	28	{.02}*	0	
WBT	1	1700	53	.06	91	.06*
WBR	0	0	13		11	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.15**		**.14**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		4	
NBT	1	1700	3	.02*	6	.02*
NBR	0	0	37		25	
SBL	0	0	13	{.01}*	15	{.01}*
SBT	1	1700	4	.01	2	.02
SBR	0	0	5		19	
EBL	0	0	12		10	{.01}*
EBT	1	1700	104	.07*	51	.04
EBR	0	0	4		0	
WBL	0	0	29	{.02}*	27	
WBT	1	1700	53	.06	91	.08*
WBR	0	0	13		11	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.17**		**.17**

21. Anteater & Road B

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	1	.00	51	.03*
NBT	1	1700	340	.20*	231	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1700	233	.14	401	.25*
SBR	0	0	1		27	
EBL	0	0	32		12	
EBT	1	1700	0	.05*	0	.02*
EBR	0	0	61		24	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.30**		**.35**

C

APPENDIX C: PRELIMINARY DRAINAGE STUDY

ADAMS · STREETER
CIVIL ENGINEERS INC.

IRVINE • RIVERSIDE
Jan A. Adams · Randal L. Streeter

PA 10
Civil Engineer Drainage Study

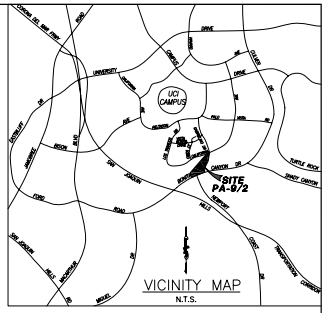
Storm Drains

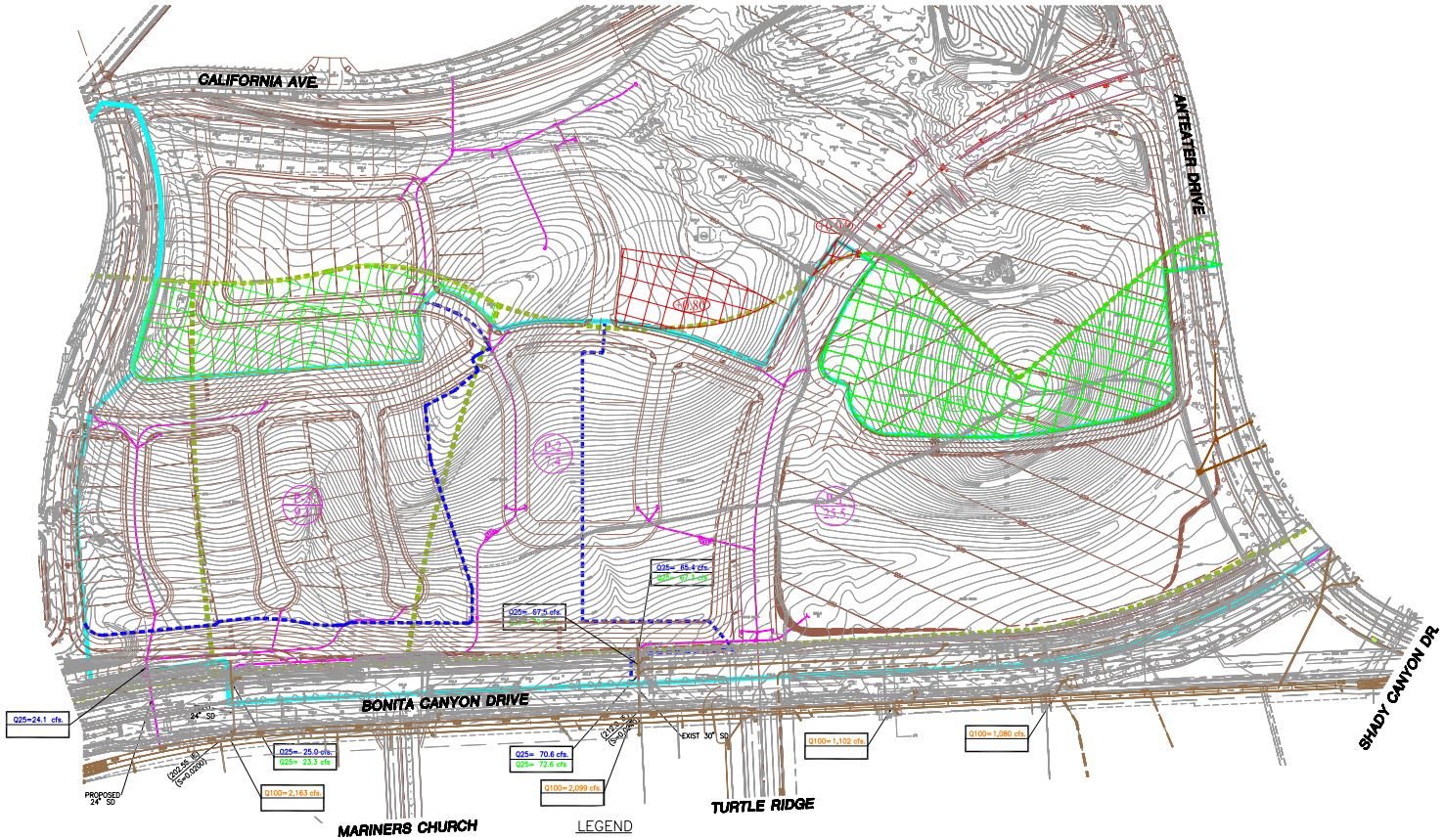
The storm drain drainage boundaries for PA 10 project are divided into two drainage areas, splitting the Northern and Southern sites. The Northern Site's drainage runoff will drain into an existing 24" Storm drain located within the California Avenue right of way. Further study is needed to see if this pipe needs upsizing. The Southern Site's drainage runoff will drain to an existing box culvert which is located on the south side of Bonita Canyon Drive. A portion of the drainage will tie into two existing storm drain laterals which cross Bonita Canyon drive and connect directly to the box culvert.

Preliminary Drainage Study

The purpose of the preliminary drainage study is to show a comparison between the allowable design flows and the proposed flows for each of the existing lateral connecting to the box culvert. The preliminary drainage study is divided into 3 sub-areas. Each sub-area drainage flows are designated to each of the storm drain laterals into Bonita Canyon Box culvert. The preliminary study results show that a new lateral is needed to handle portion of the PA 10 drainage. The Bonita Box Culvert has the capacity to handle the flows generated from the proposed PA 10 development

15 CORPORATE PARK • IRVINE, CA. 92606 • Tel: (949) 474-2330 • Fax: (949) 474-0251
2900 ADAMS STREET, SUITE A-400 • RIVERSIDE, CA. 92504 • Tel: (951) 352-4100 • Fax: (951) 352-6200





LEGEND

- P-1 / 1.0 — AREA DESIGNATION / AREA IN ACRES
- PROPOSED HYDROLOGY BOUNDARY
- PROPOSED HYDROLOGY SUB AREA
- EXIST HYDROLOGY BOUNDARY
- PROPOSED STORM DRAIN
- PROPOSED STORMFILTER
- Q= X.X cfs. — ADAMS STREETER DRAINAGE ANALYSIS
- Q= X.X cfs. — WILSON MIKAMI CORPORATION DRAINAGE ANALYSIS
- Q= X.X cfs. — THE KEITH COMPANIES DRAINAGE ANALYSIS
- AREA SUBTRACTED FROM BONITA CANYON DRAINAGE
- AREA ADDED TO BONITA CANYON DRAINAGE

COMPARATIVE DISCHARGE TABLE (BY AREA)

SUBAREA	C-A/S	C-CITY
A-1	70.6	72.6
A-2	25.0	23.3
A-3	24.1	---

100' 50' 0' 100' 200'
GRAPHIC SCALE: 1"=100'

PREPARED BY:
ADAMS STREETER CIVIL ENGINEERS, INC.
15 Corporate Park, Irvine, CA 92606
Ph: (949) 474-2330 Fax: (949) 474-0251

BONITA CANYON
PRELIMINARY DRAINAGE STUDY
PLANNING AREA 10

MAY 14, 2008

UC IRVINE
UNIVERSITY HILLS PLANNING AREA 10

IRVINE, CA
IRVINE CAMPUS HOUSING AUTHORITY
UNIVERSITY OF CALIFORNIA, IRVINE

0 30 60 120 180

PRELIMINARY STORM DRAIN PLAN

BASSENIAN LAGONI
ADAMS · STREETER
CIVIL ENGINEERS, INC.
12 Corporate Park, Irvine, CA 92606
Ph:949-474-3330 Fax:949-474-0251

FEBRUARY 23, 2009

D

APPENDIX D: PUBLIC REVIEW/RESPONSE TO COMMENTS

Response to Comments on Draft Initial Study
Area 10 Faculty and Staff Housing 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 June 12, 2009 through July 13, 2009. 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 June 12, 2009 (copy included in this section).

Comments and Responses

Written comments were submitted by the following public agencies and special districts. These letters, followed by responses to comments in each one, are presented on the pages following the Draft IS/MND distribution list and copies of public notices.

Commenting Agency	Correspondence Dated	Received at UCI
State of California, Department of Toxic Substances Control	July 3, 2009	July 8, 2009
Metropolitan Water District	July 7, 2009	July 7, 2009
City of Irvine	July 9, 2009	July 9, 2009
State of California, Department of Transportation, District 12	July 13, 2009	July 13, 2009
State of California, Department of Fish and Game	July 13, 2009	July 13, 2009
State of California, Governor's Office of Planning and Research	July 14, 2009	July 21, 2009

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Campus & Environmental Planning

750 University Tower
Irvine, CA 92697-2325
(949) 824-6316
(949) 824-1213 Fax

June 11, 2009

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 University Hills Area 10 Faculty and Staff Housing Project
Project Location: University of California, Irvine
Lead Agency: University of California
County: Orange

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code §21000 et seq.), the CEQA Guidelines (Title 14 Code of Regulations Section 15000 et seq.), and the University of California Procedures for Implementation of CEQA, an Initial Study for the above-named project was prepared that identifies and evaluates the environmental impacts of the project.

Implementation of the proposed project would construct a neighborhood of approximately 260 homes to be occupied by University of California, Irvine faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

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*, the address above, and UC Irvine'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 June 12, 2009 through July 12, 2009.

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

NOTICE OF COMPLETION
AND
NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION
UNIVERSITY OF CALIFORNIA, IRVINE

UCI UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING PROJECT

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the University Hills Area 10 Faculty and Staff Housing 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 construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

The Initial Study is available for review at: 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
Heritage Park Regional Library
14361 Yale Avenue
Irvine, CA 92604

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 June 12, 2009 and extend through July 12, 2009. 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. Your response may be sent at the earliest possible date, but no later than 5:00 p.m. July 12, 2009. If you have any questions regarding the project, please contact (949) 824-8692.

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Campus & Environmental Planning

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June 11, 2009

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 University Hills Area 10 Faculty and Staff Housing 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 the California Environmental Quality Act, 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 June 2009 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 construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

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, June 12, 2009 through July 13, 2009.

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

SCH #

Project Title: UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING 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: Gabrielino Drive and California Avenue — Zip Code: 92697-2325
Longitude/Latitude (degrees, minutes and seconds): 33 ° 38 ' 7.98 " N / 117 ° 50 ' 0.00 " W Total Acres: 35
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: Execution of Ground Lease

Development Type:

☐ Residential: Units — Acres
☐ Office: Sq.ft. — Acres — Employees — ☐ Transportation: Type
☐ Commercial: Sq.ft. — Acres — Employees — ☐ Mining: Mineral
☐ Industrial: Sq.ft. — Acres — Employees — ☐ Power: Type — MW
☐ Educational: — ☐ Waste Treatment: Type — MGD
☐ Recreational: — ☐ Hazardous Waste: Type
☐ Water Facilities: Type — MGD — ☑ Other: University faculty and staff housing

Project Issues Discussed in Document:

☑ Aesthetic/Visual ☐ Fiscal ☑ Recreation/Parks ☑ Vegetation
☐ Agricultural Land ☑ Flood Plain/Flooding ☑ Schools/Universities ☑ Water Quality
☑ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☑ Water Supply/Groundwater
☑ Archeological/Historical ☑ Geologic/Seismic ☑ Sewer Capacity ☑ Wetland/Riparian
☑ Biological Resources ☐ Minerals ☑ Soil Erosion/Compaction/Grading ☑ Growth Inducement
☐ Coastal Zone ☑ Noise ☑ Solid Waste ☑ Land Use
☑ Drainage/Absorption ☑ Population/Housing Balance ☑ Toxic/Hazardous ☑ Cumulative Effects
☐ Economic/Jobs ☑ Public Services/Facilities ☑ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Housing Reserve

Project Description: *(please use a separate page if necessary)*

Implementation of the proposed project would construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

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.

Revised 2008

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

____	Air Resources Board	____	Office of Emergency Services
____	Boating & Waterways, Department of	____	Office of Historic Preservation
x	California Highway Patrol	____	Office of Public School Construction
x	Caltrans District # 12	x	Parks & Recreation, Department of
____	Caltrans Division of Aeronautics	____	Pesticide Regulation, Department of
____	Caltrans Planning	____	Public Utilities Commission
____	Central Valley Flood Protection Board	x	Regional WQCB # 8
____	Coachella Valley Mtns. Conservancy	x	Resources Agency
x	Coastal Commission	____	S.F. Bay Conservation & Development Comm.
____	Colorado River Board	____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____	Conservation, Department of	____	San Joaquin River Conservancy
____	Corrections, Department of	____	Santa Monica Mtns. Conservancy
____	Delta Protection Commission	____	State Lands Commission
____	Education, Department of	____	SWRCB: Clean Water Grants
____	Energy Commission	____	SWRCB: Water Quality
x	Fish & Game Region # 5	____	SWRCB: Water Rights
____	Food & Agriculture, Department of	____	Tahoe Regional Planning Agency
____	Forestry and Fire Protection, Department of	x	Toxic Substances Control, Department of
____	General Services, Department of	x	Water Resources, Department of
____	Health Services, Department of		
____	Housing & Community Development	____	Other: ____
____	Integrated Waste Management Board	____	Other: ____
x	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date June 12, 2009 Ending Date July 12, 2009

Lead Agency (Complete if applicable):

Consulting Firm: Hogle-Ireland
Address: 2860 Michelle Drive, Suite 100
City/State/Zip: Irvine, CA 92606
Contact: Randy A. Nichols, AICP
Phone: (949) 553-1427

Applicant: University of California - Irvine
Address: 750 University Tower
City/State/Zip: Irvine, CA 92697-2325
Phone: (949) 824-8692

Signature of Lead Agency Representative: _____ **Date:** June 11, 2009

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Revised 2008

DRAFT IS/MND DISTRIBUTION LIST

VIA Hogle-Ireland

NOC

Certified Mail 15 CDs/15 Summaries

State Clearinghouse
Office of Planning & Research
1400 Tenth Street, Room 222
Sacramento, CA 95814

Regular Mail (paper copies)

Ms. Alicia Jensen
UCOP
1111 Franklin Street, 6th Floor
Oakland, CA 94607

Certified Mail (paper copies)

Orange County Public Library
University Park Branch
4512 Sandburg Way
Irvine, CA 92612

Ms. Elisabeth Gunther
Office of General Counsel
UCOP
111 Franklin Street, 8th Floor
Oakland, CA 94607

Chris Hayne
Homeowner Representative Board,
ICHA
14 Eliot Court
Irvine, CA 92617

CD copy NOI (Certified Mail)

City of Irvine
Community Development Dept.
P.O. Box 19575
Irvine, CA 92623-9575
Attn: Mr. Bill Jacobs

County of Orange
Planning & Development Services
300 N. Flower Street
Santa Ana, CA 92703
Attn: Tim Neely

City of Newport Beach
Planning Department
3300 Newport Blvd.
Newport Beach, CA 92663
Attn: Mr. David Lepo

Internet copy NOI (Certified Mail)

Orange County Transportation Authority
550 S. Main St.
Orange, CA 92868

California Dept. of Fish & Game
4949 Viewridge Ave.
San Diego, CA 92133

California 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. 4th Street, Suite 500
Los Angeles, CA 90013

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

Metropolitan Water District
700 N. Alameda St.
Los Angeles, CA 90012

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

California Dept. of Transportation
District 12
3337 Michelson Dr., Suite 380
Irvine, CA 92612-1699

Natural Reserve System
University of California
1111 Franklin St., 6th Floor
Oakland, CA 94607-5200

VIA UCI EMAIL

Director Richard Orr
Campus Asset Management
ZOT 7475

Vice Chancellor Wendell Brase
Administrative & Business Services
ZOT: 1025

Counsel to the Chancellor
Diane Fields Geocaris
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

Executive Vice Chancellor
Michael Gottfredson
C/O Mr. Michael Arias
ZOT: 1000

Academic Senate
Jutta Heckhausen
ZOT: 2525

Dan Dooros
Associate Vice Chancellor
Student Affairs
405 Aldrich Hall
ZOT: 5180

Chancellor Michael Drake
ZOT: 1900

Assistant Vice Chancellor
Facilities Management
Jim Hay
ZOT: 5444

Associate Vice Chancellor
Design & Construction Services
Rebekah Gladson
ZOT : 2450

Director Janet Mason
Capital Planning
ZOT: 4535

Academic Senate
Planning & Budget
Prof. Peter Krapp
ZOT:3875

Vice Chancellor Planning and Budget
Roy Dormaier
ZOT: 3025

Manuel Gomez
Vice Chancellor
Student Affairs
ZOT: 5175

Assoc. Executive Vice Chancellor
Dave Tomcheck
ZOT: 1000

VIA CEP – Hard Copy

UCI Main Library
Government Publications
Attn: Ms. Yvonne Wilson
ZOT 8100

UCI Archives
Main Library
Attn: Michelle Light
ZOT 8100

Victor Van Zandt
Director, Planning and Construction
Irvine Campus Housing Authority
20 Los Trancos Drive
Irvine, CA 92617

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:

June 12, 2009

"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: June 12, 2009

Julie Hammell
Signature

The Orange County Register
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-7000 ext. 2209

PROOF OF PUBLICATION

Proof

NOTICE OF COMPLETION
AND
NOTICE OF INTENT
TO ADOPT A MITIGATED
NEGATIVE DECLARATION
UNIVERSITY OF CALIFORNIA, IRVINE

UCI UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING PROJECT

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the University Hills Area 10 Faculty and Staff Housing 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 construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

The Initial Study is available for review at: 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
Heritage Park Regional Library
14361 Yale Avenue
Irvine, CA 92604

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 June 12, 2009 and extend through July 13, 2009. 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. Your response may be sent at the earliest possible date, but no later than 5:00 p.m. July 13, 2009. If you have any questions regarding the project, please contact (949) 824-8692.

NOTICE OF COMPLETION
AND
NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION
UNIVERSITY OF CALIFORNIA, IRVINE

UCI UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING PROJECT

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the University Hills Area 10 Faculty and Staff Housing 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 construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. The project also includes construction of a new street connecting the neighborhood to Anteater Drive on the campus.

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Publish: Orange County Register June 12, 2009 R-1083

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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

July 3, 2009

Alex Mark, AICP
University of California-Irvine
Office of Campus & Environmental Planning
750 University Tower
Irvine, California 92697-2325

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING PROJECT (SCH # 2009061048), ORANGE COUNTY

Dear Mr. Mark:

The Department of Toxic Substances Control (DTSC) has received your submitted tiered Initial Study (IS) and Mitigation Negative Declaration (MND) for the above-mentioned project. The following project description is stated in your document: "The proposed project will be located on the main campus of the University of California, Irvine (UCI), which is within the City of Irvine in south-central Orange County, about five miles inland from the Pacific Ocean. The proposed project site comprises approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus. It is a development plan for approximately 260 homes, to be occupied by UCI faculty and staff. A two-phase grading and development process is currently envisioned. The project site is undeveloped and covered with non-native grasses on rolling hillsides that generally slope to the south and contains no trees, rock outcroppings, water bodies, or other distinctive natural features." DTSC has the following comments:

1) 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 necessary, DTSC would require an oversight agreement in order to review such documents. Please see comment No. 9 below for more information.

   For all identified sites, the EIR 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 pertinent 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, accessible through DTSC's website (see below).

- 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.

- Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): 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).

2) All environmental investigations, sampling and/or remediation for the site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found should be clearly summarized in a table.

3) If buildings or other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should be conducted for the presence of other related hazardous chemicals, lead-based paints or products, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

4) Project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure 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. If it is found necessary, a study of the site and a health risk assessment overseen and approved by the appropriate government agency and a qualified health risk assessor should 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 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.

7) If during construction/demolition of the project, the soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented.

8) If the site was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency at the site prior to construction of the project.

9) DTSC can provide guidance for cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies which would not be considered responsible parties under CERCLA, 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, or contact Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

10) Also, in future CEQA documents, please provide your e-mail address, so DTSC can send you comments both electronically and by mail.

If you have any questions regarding this letter, please contact Mr. Rafiq Ahmed, Project Manager, at rahmed@dtsc.ca.gov, or by phone at (714) 484-5491.

Sincerely,

Greg Holmes
Unit Chief
Brownfields and Environmental Restoration Program - Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov

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
nritter@dtsc.ca.gov

CEQA# 2623

State of California, Department of Toxic Substances Control

Comment 1

As described in the Draft Initial Study (IS) response to checklist item 6.d (pages 66-67) prior research conducted as part of the 2007 LRDP EIR determined that there were no known hazardous waste sites in this part of the campus. This section of the Draft IS also refers to the State of California, Department of Toxic Substance Control's web-based "Envirostor" (June 2008) which confirmed that no hazardous substances/wastes were found on the project site or remedial actions required or underway. No further investigations or mitigation measures are warranted with respect to site contamination, and there is no need to assign any regulatory agency responsibility for oversight of any site investigations, testing, or site clean up activities.

Comment 2

There is no indication of any site contamination and further site assessments, work plans, and regulatory oversight are not warranted. Please refer to the previous response.

Comment 3

As described on page 10 of the IS, the subject site is undeveloped, covered with non-native grasses. There are no buildings or any other site improvements; thus there is no risk associated with demolition/removal of building materials that might contain hazardous substances.

Comment 4

As described in the responses to comments 1-3, there is no evidence of any site contamination and there are no site improvements that might contain hazardous substances. The project's construction specifications will require the contractors to be responsible for identification and proper removal and disposal of any unexpected soil or water contaminants that might be encountered during grading operations. Import of soil to the project site is not planned.

Comment 5

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. Please refer to the previous responses to comments 1 and 4.

Comment 6

As stated in the IS project description, and summarized in the first paragraph of the comment letter, the proposed project is to build housing for university faculty and staff. 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. On page 65 of the IS, it is noted 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. Based on these projected activities, the IS's response to questions 6 a and b (p. 65) concluded that this project would not result in any significant impacts involving hazardous waste generation or disposal.

Comment 7

Please refer to the previous responses to comments 1 and 4. There is no evidence of any site contamination; however, the project construction specifications will ensure that in the event that some 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.

Comment 8

Please refer to the previous responses to comments 1, 4, and 7.

Comment 9

Please refer to the response to comment 1.

Comment 10

Request for e-mail contact information with transmittal of future CEQA documents is acknowledged.

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

July 7, 2009 **Via Electronic and Regular Mail**

Mr. Alex Marks, AICP
Associate Planner
University of California, Irvine
Office of Campus & Environmental Planning
750 University Tower
Irvine, CA 92697-2325

Dear Mr. Marks:

Notice of Completion (NOC) and Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration (MND) for UCI University Hills Area 10 Faculty and Staff Housing Project

Thank you for including the Metropolitan Water District of Southern California (Metropolitan) in the environmental review process for the University Hills Area 10 Faculty and Staff Housing Project (Project). The University of California, Irvine, is the Lead Agency under the California Environmental Quality Act for the Project. Implementation of the proposed Project would construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff.

The proposed Project would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection at Gabrielino Drive and California Avenue in the southeastern part of the UCI campus, within Orange County. This letter contains Metropolitan's comments to the proposed Project as a potentially affected public agency.

Metropolitan does not own or operate any facilities within the footprint of the proposed Project. However, we are concerned with water quality issues and potential impacts to nearby facilities associated with future excavation, construction, utility or any development that may result from activity under the proposed Project. We reviewed the project description of the proposed Project and offer the following comments:

Metropolitan's East Orange County Feeder No 2 and easement right-of-way is immediately adjacent to the northwestern portion of the proposed development area at the intersection of Gabrielino Drive and California Avenue, as shown in the attached map.

Design drawings for facilities and/or improvements located in close proximity to or impacting Metropolitan rights-of-way should be provided to Metropolitan for review/approval to ensure

700 N. Alameda Street, Los Angeles, California 90012 • Mailing Address: P.O. Box 54153, Los Angeles, California, 90054-0153 • Telephone: (213) 217-6000

adequate protection of our pipeline during construction. We need to ensure that Project activities do not impact the integrity of this pipeline, which may have significant loading and cover restrictions. Detailed prints of drawings of Metropolitan's pipelines and rights-of-way may be obtained by calling Metropolitan's Substructures Information Line at (213) 217-6564. Please note that all submitted designs or plans must clearly identify Metropolitan's facilities and rights-of-way.

Metropolitan requests the District coordinate with Metropolitan staff to address these comments. We appreciate the opportunity to provide input to your planning process and we look forward to continuing discussion on this Project. For further assistance, please contact Miss Connie Yee at (213) 217-5657.

Very truly yours,

Delaine W. Shane
Manager, Environmental Planning Team

CY/cy

J:\Environmental-Planning & Compliance\ENVPLAN\EPT Project Folder\Orange County\UCI\ University Hills Area 10 Faculty and Staff Housing Project.Doc

Enclosures: Project Location Map

Metropolitan Water District

Comment 1

This letter and the attached map express Metropolitan's concerns about protecting its East Orange County Feeder No. 2, an underground water line located near the project site, adjacent to the northwestern portion of the intersection of Gabrielino Drive and California Avenue. As requested, the District will be consulted during project design preparation to ensure that proposed construction activities do not impact the integrity of the pipeline.

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July 9, 2009

Mr. Alex S. Marks, AICP, Associate Planner
University of California, Irvine
Office of Campus and Environmental Planning
750 University Tower
Irvine, California 92697-2325

SUBJECT: Review of Mitigated Negative Declaration for the University of California, Irvine Area 10 Faculty and Staff Housing Project

Dear Mr. Marks:

The City of Irvine has reviewed the above referenced project and is providing the comments outlined below.

1. Final approval of this document should include a condition or mitigation measure stating that link intersection improvements along Bonita Canyon Drive from Shady Canyon Drive to SR-73 ramps shall be completed prior to project occupancy. The City of Irvine assumes that these improvements are committed and will be constructed by 2013.

2. Include the socioeconomic trip generation analysis based on the City's ITAM runs. This comparative table should be included with the land use and vehicular trip generation presented in Table 4 of the traffic study.

3. Daily and peak hour volumes along Bonita Canyon Drive from Shady Canyon Drive to SR-73 SB off ramp are up to 10% (existing) and 38% (2015) lower than City of Irvine existing and forecasted interim traffic volumes, City of Irvine 2008 Circulation Phasing Study. Please check listed 2008 and 2015 daily traffic volumes listed in the traffic study and modify ADTs and ICUs accordingly.

4. The traffic analysis should include a long term (Year 2025/Post-2025) analysis of traffic impacts for buildout of the campus. The LRDP traffic study is referenced as analyzing the long range impacts, however it is necessary to perform an updated analysis that considers the environment as we know it today, including the updated network and land use assumptions of the model.

5. 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 applicable provisions of the City's Noise Ordinance as follows:

a. 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.

b. 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.

6. For your information, the mitigation of short term construction impacts should include compliance with the City's Designated and Restricted Truck Routes.

Thank you for the opportunity to review and comment on the proposed document. We would appreciate the opportunity to review any further information regarding this project as the planning process proceeds. If you have any questions, please me by telephone at (949) 724- 6314 or by email at dlaw@ci.irvine.ca.us

Sincerely,

DAVID R. LAW, AICP
Senior Planner

c: Farideh Lyons, Senior Transportation Analyst

Comment 1

It is noted in the traffic study prepared for the Draft IS/MND and on the last sentence on page 107 of the Draft IS/MND, that Bonita Canyon Drive, between Culver Drive/Shady Canyon Drive and SR 73 was recently widened to four lanes, and that associated intersection improvements will be implemented by 2015. The roadway and associated intersection improvements assumed in 2015 are fully funded through an Assessment District administered by the City of Irvine (per e-mail contact by Sun-Sun Murillo of the City of Irvine, Supervising Transportation Analyst, on January 20, 2009). The University of California, Irvine is thus not responsible for the timing of those future improvements.

In any event, as shown in the table below, the future intersection improvements assumed to be completed by project buildout (2015) are not necessary to avoid a significant traffic impact at the affected intersections. In each location, the project traffic would not change the level of service and each intersection would continue to operate within the adopted level of service performance standard. ICU worksheets for these Year 2015 without programmed improvements conditions are attached.

YEAR 2015 INTERSECTION LOS SUMMARY-WITHOUT PROGRAMMED INTERSECTION IMPROVEMENTS

	No-Project				With-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection (N/S Rd & E/W Rd)	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
8. Bonita Cyn & Newport Coast	.52	A	.63	B	.53	A	.64	B
9. Turtle Ridge & Bonita Cyn	.48	A	.79	C	.48	A	.80	C
10. Culver/Bonita Cyn & Shady Cyn	.82	D	.64	B	.82	D	.66	B
13. Bonita Cyn & SR-73 NB Ramps	.51	A	.58	A	.52	A	.59	A

Level of service ranges:	.00 - .60 A
	.61 - .70 B
	.71 - .80 C
	.81 - .90 D
	.91 – 1.00 E
	Above 1.00 F

Abbreviations: ICU – intersection capacity utilization
LOS – level of service

Comment 2

As stated in the IS/MND traffic report, use of the Irvine Transportation Analysis Model (ITAM) was limited to derivation of project trip distribution (i.e., general distribution on surrounding roadways for project trip assignment purposes). Trip rates assumed in the traffic report are based on the UCI Main Campus Traffic Model (UCI MCTM), which utilizes observed/field studies to develop trip forecasts for UCI (presented in Table 4 of the traffic study, along with the proposed project trip generation). The traffic forecasting procedure in UCI MCTM utilizes campus land use information identified in UCI's Long Range Development Plan (LRDP) as opposed to the socioeconomic data used by ITAM. UCI has used MCTM for many years to forecast its traffic volumes, including those evaluated in the 2007 LRDP FEIR from which this IS/MND is tiered. Socioeconomic-based trip data for the campus is unavailable and in any event is incompatible with UCI's adopted methodology for evaluating project traffic impacts.

Comment 3

The future timeframe analyzed in the 2008 City of Irvine Circulation Phasing Study is 2013 and includes growth assumptions for UCI which exceed the campus' development plans by more than 21 percent from 2005 to 2013. These assumptions could be contributing to the 26,000 average daily traffic (ADT) existing (2008) volume increasing to 41,000 ADT in 2013 on Bonita Canyon Drive presented in the City's study. The traffic counts for the University Hills Area 10 project's traffic study were taken in 2007 and 2008; it is not clear when the counts were obtained for the City's 2008 Circulation Phasing Study existing conditions and the reasons for the variance. Traffic counts are known to vary both year to year and day to day. In late 2008 when the study's analysis began a comparable version of ITAM to provide forecast volumes consistent with this project's planning horizon (year 2015) was not available; therefore, the methodology as presented in the project's traffic study is based upon existing counts and assumes a three percent per year annual (ambient) growth rate used for worst-case purposes, to produce year 2015 volumes. Ambient traffic growth includes traffic resulting from non-specific development within and outside the study area and is based on an approximately two to three percent count

increase per year according to the City's Circulation Phasing Analyses. The three percent annual growth rate methodology is a widely accepted practice to forecast future traffic volumes. The traffic forecasting methodology applied in the traffic study for this project is considered to be accurate and sufficient. Adjustments to replicate the City's Circulation Phasing Study forecasts are not warranted.

Comment 4

The proposed project is consistent with the 2007 LRDP and with the assumptions incorporated into the long range traffic impact analysis conducted for the 2007 LRDP FEIR. Hence, long-range traffic analysis findings associated with the proposed project would be in conformance with those contained in the traffic report prepared for the 2007 LRDP. The purpose of this project-level, near-term study is to determine the effect of the project on the circulation system surrounding the proposed project under short-term conditions, which could identify a need to implement improvements identified in the LRDP traffic study sooner than estimated. Consequently, the study indicated that no such improvements were determined to be necessary. Further, the traffic study prepared for the 2007 LRDP incorporated non-campus (regional) development including assumptions in the City's General Plan to comprehensively analyze the effects of its implementation on the surrounding transportation network. Likewise, the traffic analyses completed for any non-campus development projects should have assumed the LRDP's land use and development program. Thus, a new long-range (Year 2025/Post-2025) impact analysis is not warranted.

Comments 5 and 6

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, since all excess material generated during excavation of the site will be stockpiled on adjacent land (see page 9 in Draft Initial Study) no trucks will be required to import or export soil. Trucks of various sizes will be required during the site improvement and home building phases to deliver supplies and equipment, and remove waste materials. Noise impacts related to trucks are addressed on page 91 of the Draft IS/MND. As stated in the document, mitigation measure Noi-2A would reduce noise impacts from construction of the project 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 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.

Air quality impacts related to trucks are addressed on page 37 of the Draft IS/MND. As stated in the document, compliance with mitigation measures would reduce grading period and construction related air quality impacts, including emissions related to the use of trucks to a less than significant level. These measures include 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. 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.

YEAR 2015 WITHOUT PROGRAMMED IMPROVEMENTS

8. Bonita Cyn & Newport Coast

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	379	.11	820	.24
NBR	1	1700	153	.09	330	.19
SBL	2	3400	122	.04	192	.06
SBT	1	1700	537	.32*	522	.31*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	388	.23*	311	.18*
WBT	0	0	0		0	
WBR	1	1700	116	.07	113	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.54**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	459	.14	992	.29*
NBR	1	1700	185	.11	399	.23
SBL	2	3400	148	.04	232	.07*
SBT	2	3400	650	.19*	632	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	469	.28*	376	.22*
WBT	0	0	0		0	
WBR	1	1700	140	.08	137	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.63**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	460	.14	1027	.30*
NBR	1	1700	185	.11	399	.23
SBL	2	3400	148	.04	232	.07*
SBT	2	3400	695	.20*	650	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	469	.28*	376	.22*
WBT	0	0	0		0	
WBR	1	1700	140	.08	138	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.53**		**.64**

9. Turtle Ridge & Bonita Cyn

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	53	.03*	108	.06*
NBT	0	0	0		0	
NBR	2	3400	426	.13	464	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	495	.15	903	.29*
EBR	0	0	28		71	
WBL	1	1700	279	.16	439	.26*
WBT	1	1700	586	.34*	651	.38
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.42**		**.66**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	64	.04*	131	.08*
NBT	0	0	0		0	
NBR	2	3400	515	.15	561	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	599	.19*	1093	.35*
EBR	0	0	34		86	
WBL	1	1700	338	.20*	531	.31*
WBT	2	3400	709	.21	788	.23
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.79**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	64	.04*	131	.08*
NBT	0	0	0		0	
NBR	2	3400	515	.15	562	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	600	.19*	1129	.36*
EBR	0	0	34		86	
WBL	1	1700	338	.20*	531	.31*
WBT	2	3400	754	.22	806	.24
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.80**

10. Culver/Bonita Cyn & Shady Cyn

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	191	.11*	126	.07*
NBT	2	3400	838	.25	882	.26
NBR	1	1700	248	.15	385	.23
SBL	1	1700	30	.02	48	.03
SBT	1	1700	722	.42*	694	.41*
SBR	2	3400	30	.01	38	.01
EBL	1	1700	22	.01	36	.02
EBT	2	3400	34	.01*	57	.02*
EBR	1	1700	136	.08	238	.14
WBL	1	1700	500	.29*	214	.13*
WBT	1	1700	60	.04	27	.02
WBR	1	1700	95	.06	56	.03
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.75**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	231	.14*	152	.09*
NBT	2	3400	1014	.30	1067	.31
NBR	1	1700	300	.18	466	.27
SBL	1	1700	36	.02	58	.03
SBT	2	3400	874	.26*	840	.25*
SBR	1	1700	36	.02	46	.03
EBL	1	1700	27	.02	44	.03
EBT	2	3400	41	.01*	69	.02*
EBR	1	1700	165	.10	288	.17
WBL	1	1700	605	.36*	259	.15*
WBT	1	1700	73	.04	33	.02
WBR	1	1700	115	.07	68	.04
Right Turn Adjustment					EBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.64**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	232	.14*	189	.11*
NBT	2	3400	1014	.30	1067	.31
NBR	1	1700	300	.18	466	.27
SBL	1	1700	36	.02	58	.03
SBT	2	3400	874	.26*	840	.25*
SBR	1	1700	36	.02	56	.03
EBL	1	1700	40	.02	49	.03
EBT	2	3400	44	.01*	70	.02*
EBR	1	1700	210	.12	306	.18
WBL	1	1700	605	.36*	259	.15*
WBT	1	1700	73	.04	35	.02
WBR	1	1700	115	.07	68	.04
Right Turn Adjustment					EBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.66**

13. Bonita Cyn & SR-73 NB Ramps

Existing Counts

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	529	.16*	1120	.33*
NBR	1	1700	54	.03	32	.02
SBL	1	1700	191	.11*	93	.05*
SBT	2	3400	753	.22	729	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	376	.11*	156	.05*
WBT	0	0	0		0	
WBR	1	1700	49	.03	41	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.43**		**.48**

2015 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	640	.19*	1355	.40*
NBR	1	1700	65	.04	39	.02
SBL	1	1700	231	.14*	113	.07*
SBT	2	3400	911	.27	882	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	455	.13*	189	.06*
WBT	0	0	0		0	
WBR	1	1700	59	.03	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.58**

2015 With-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	641	.19*	1390	.41*
NBR	1	1700	65	.04	39	.02
SBL	1	1700	261	.15*	125	.07*
SBT	2	3400	926	.27	888	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3400	455	.13*	189	.06*
WBT	0	0	0		0	
WBR	1	1700	59	.03	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.59**

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-8894
Tel: (949) 724-2267
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UCI Campus & Environmental Planning

Flex your power!
Be energy efficient!

FAX & MAIL

July 13, 2009

Mr. Alex Marks
University of California, Irvine
Office of Campus & Environmental Planning
750 University Tower
Irvine, California 92697-2325

File: IGR/CEQA
SCH #: 2009061048
Log #: 2301
SR-73

Subject: UCI University Hills Area 10 Faculty and Staff Housing Project

Dear Mr. Marks:

Thank you for the opportunity to review and comment on the **Tiered Initial Study and Mitigated Negative Declaration for the UCI University Hills Area 10 Faculty and Staff Housing Project**. The proposed project would construct a neighborhood of approximately 260 homes to be occupied by UCI faculty and staff. The proposed project site would be located on approximately 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue in the southeastern part of the campus in the City of Irvine.

The California Department of Transportation (Department), District 12 is a commenting agency on this project, and has the following comments:

1. The Department's Traffic Operations Branch requests all applicants to use the method outlined in the latest version of the Highway Capacity Manual (HCM) when analyzing traffic impacts on State Transportation Facilities, including the signalized intersections at Northbound (NB) and Southbound (SB) State Route 73 (SR-73) at Bonita Canyon Drive. The use of HCM is preferred by the Department because it is an operational analysis as opposed to the Intersection Capacity Utilization (ICU) method, which is a planning analysis. In the case of projects that have direct impacts on State Facilities, the Department recommends that the traffic impact analysis be based on HCM method. Should the project require an encroachment permit, Traffic Operations may find the Traffic Impact Study based on ICU methodology inadequate resulting in possible delay or denial of a permit by the Department. All input sheets, assumptions and volumes on State Facilities including ramps and intersection analysis should be submitted to the Department for review and approval. The EIR should include appropriate mitigation measures to offset any potential impacts.

2. Queuing Analysis should be performed for signalized intersections at NB and SB SR-73 On and Off-ramps at NB and SB SR-73 at Bonita Canyon Drive.

3. Please provide trip distribution calculations/percentages for SR-73 On and Off-ramps.

4. On page A-17 of the Appendix for the Traffic Study, Intersection 12 -- Newport Coast & SR-73 NB ramp, it shows a capacity of 5100 for 1.5 NBT lanes, a capacity of 3400 for 0 WBT lanes, and no capacity assignment for 1.5 WBL lanes and 0.5 WBR lanes. Please check the accuracy of these capacity assumptions.

Please continue to keep us informed of this project and any future developments, which could potentially impact the 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,

CHRISTOPHER HERRE
Branch Chief, Local Development/Intergovernmental Review

c: Terry Roberts, Office of Planning and Research

July 13, 2009

Mr. Alex Marks
University of California, Irvine
Office of Campus & Environmental Planning
750 University Tower
Irvine, California 92697-2325

File: IGR/CEQA
SCH #: 2009061048
Log #: 2301
SR-73

Subject: UCI University Hills Area 10 Faculty and Staff Housing Project

bcc: Ryan Chamberlain, Deputy District Director
Isaac Alonso Rice, Traffic Operations North

State of California, Department of Transportation, District 12

Comment 1

As mentioned in the comment, the Intersection Capacity Utilization (ICU) methodology is mainly used for planning analysis purposes. This is because it focuses on a project's potential impacts such as traffic volume and intersection lane geometrics rather than hypothetical assumptions such as pedestrian traffic or signal timing, which can be arbitrary and vary between scenarios due to unknown future conditions. Thus, when analyzing future scenarios the ICU methodology provides more consistent results than the Highway Capacity Manual (HCM) methodology because the focus is on the traffic changes due to the proposed project (i.e., compared to no-project). The ICU methodology also satisfies the requirements of the County of Orange Congestion Management Program and Growth Management Plan. In addition, the ICU methodology was used for the traffic study prepared for the 2007 LRDP FEIR, and over the last several years has been routinely used to evaluate the potential traffic related impacts of project-level development on the UC Irvine campus.

As noted in the ICU worksheets provided in the project traffic study's appendix, the project would result in an increase of 36 trips in the PM peak hour on the northbound through approach on Bonita Canyon Drive at the SR-73 northbound ramps. With projected level of service (LOS) "A" at this intersection and the proposed project not resulting in a direct impact on State Facilities, examination of project-related traffic impacts using HCM methodology is not warranted. Since the project does not have frontage onto or direct access to SR 73, and would not require any physical alterations to a state transportation facility, it would not require an encroachment permit from Caltrans.

Comment 2

A worst case analysis of the SR-73 northbound and southbound on- and off-ramps indicates that the addition of the highest project volume of 25 trips at the southbound off-ramp would not result in queuing delays with a loop ramp of at least 500 feet.

Comment 3

The trip distribution described in Figure 3 of the traffic study shows that the project trip distribution on SR-73 is 24 percent north of Bonita Canyon Drive and two percent south of Newport Coast Drive. Based on this distribution and the project location, the project distribution percentages at the Bonita Canyon Drive and Newport Coast Drive ramps are estimated as follows:

Bonita Canyon Drive

SR-73 northbound on-ramp: 12 percent

SR-73 southbound off-ramp: 12 percent

SR-73 northbound off-ramp: <1 percent

SR-73 southbound on-ramp: 1 percent

Newport Coast Drive

SR-73 northbound on-ramp: 0 percent

SR-73 southbound off-ramp: 0 percent

SR-73 northbound off-ramp: <1 percent

SR-73 southbound on-ramp: 0 percent

Comment 4

The ICUs have been calculated correctly. Shared lanes require special treatment for determining capacity which is dictated by the volumes on the approach. Clarification on how this is applied in the ICU worksheets is discussed at the beginning of the traffic study appendix under the "Shared Lane V/C Methodology."

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201
http://www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, Governor
DONALD KOCH, Director

FACSIMILE TRANSMITTAL

TO: **Alex Marks-Associate Planner**
University of California-Irvine
Office (949) 824-8692
Fax (949) 824-1213

State Clearinghouse
Phone (916) 327-4737
Fax (916) 323-3018

FROM: **Mr. Edmund J. Pert**
California Department of Fish and Game
South Coast Region
4949 Viewridge Ave
San Diego, CA 92123
Phone (858) 467-3201

DATE: 7-13 09 **TIME:** _____

 # OF PAGES SENT INCLUDING TRANSMITTAL SHEET 4

COMMENTS:

Here are Department's comments on the University Hills Area 10 Project Mitigated Negative Declaration, (SCH#2009061048).

IF YOU DO NOT RECEIVE ALL OF THE PAGES INDICATED
PLEASE CALL THE SENDER AS SOON AS POSSIBLE.

Conserving California's Wildlife Since 1870

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201
http://www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, Governor
DONALD KOCH, Director

July 13, 2009

University of California, Irvine
Attn: Mr. Alex S. Marks
Office of Campus & Environmental Planning
750 University Tower
Irvine, CA 92697-2325

Subject: Comments Regarding Mitigated Negative Declaration (MND) for University Hills Area 10 Faculty and Staff Housing Project SCH# 2009061049, Orange County

Dear Mr. Marks:

The Department of Fish and Game (Department) has reviewed the Initial Study and Mitigated Negative Declaration (IS/MND) for the above referenced project relative to impacts to biological resources and regional conservation planning.

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 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue, in the southeastern part of the campus. The proposed project is a development plan for approximately 260 homes, to be occupied by faculty and staff of the University of California, Irvine (UCI). Development of the site is envisioned to include approximately 25 acres of neighborhoods and associated infrastructure such as roadways, on- and off-street parking, and recreational/open space amenities including an approximately one acre neighborhood park.

The project site is located entirely within the western edge of the approximately 54 acre Housing Reserve area, designated in the 2007 Long Range Development Plan Final Environmental Impact Report (LRDP) Land Use Plan. According to the 2007 LRDP (pages 61-64); the Housing Reserve is intended to accommodate future university housing needs. The proposed project is tiered from UCI's 2007 LRDP (State Clearinghouse No. 2006071024), and has incorporated identified avoidance, minimization, and compensatory mitigation identified therein to the proposed project.

The Department prepared the following statements and comments pursuant to our authority as Trustee Agency with jurisdiction over natural resources affected by the project under the California Environmental Quality Act (CEQA Section 15386).

Impacts to Sensitive or Rare Species

1. The MND describes the proposed project site as providing suitable habitat for western burrowing owl, a declining raptor species classified by the Department as a "Species of Special Concern." No burrowing owls were observed in this area during the biological surveys conducted for the 2007 LRDP. Due to the rapid decline of burrowing owls within

the region, any impacts to burrowing owl wintering or breeding habitat would be considered significant. The Department recommends that survey methods and mitigation measures follow the Burrowing Owl Consortium's *1993 Burrowing Owl Protocol and Mitigation Guidelines* including the passive relocation guidelines. The guidelines specify that if a Phase II survey results in the discovery of burrowing owl, sign, or potential burrow sites a Phase III survey should be performed during the breeding season to determine use of the site by burrowing owl and total number of owls on the site. Breeding season surveys assist in assessing the true area of mitigation needed to offset the project loss of habitat by observing use of the site by burrowing owl, and how much area burrowing owl utilize during foraging activities. The Phase III breeding season surveys should consist of four equally spaced surveys performed between April 15 and July 15. The Burrowing Owl Consortium's burrowing owl conservation measures may be viewed by utilizing an internet browser and visiting http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf

2. According to the MND (page 48) the 2007 LRDP noted, there is suitable habitat in the project area for southern tarplant, a plant species considered rare and threatened by the California Native Plant Society (page 4.3-37). However, the MND analysis of the potential for impact to southern tarplant concludes that "...impacts [based on LRDP] to southern tarplant would be considered less than significant (LRDP FEIR VI, page 4.3-37)."

   The LRDP states, regarding potential impacts to southern tarplant, "Although the permanent loss of southern tarplants associated with future development in the Study Area would be considered adverse, it would not reduce regional populations to less than a self-sustaining level. Therefore, direct impacts to this species would be less than significant."

   The Department believes the proposed MND does not provide an accurate and complete description of the existing physical environment. Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed project. Southern tarplant is classified by California Native Plant Society (CNPS) as a list 1B.1 species and recognized as a rare plant. Rare plants identified by CNPS are considered sensitive plants by the Department. The surveys for southern tarplant species were conducted in 2006, associated with the broad based LRDP, and the regional scope analyzed to conclude a less than significant impact is not substantiated in the LRDP or the proposed MND. Surveys for rare, threatened, or endangered plants should be conducted 1 year prior to impacts. If rare, threatened, or endangered plants are encountered the regional scope of the direct and indirect impacts should be disclosed to determine if significant impacts beyond what was analyzed in the LRDP constitute a new significant impact.

3. The MND refers to tiring off of the 2007 LRDP but does not specify whether the University is utilizing a tiered analysis pursuant to CEQA guidelines §21093 & §21094 or utilizing the 2007 LRDP pursuant to CEQA guidelines § 15152. The Department cannot conclude whether the LRDP is being referenced within the proposed MND to examine only effects of the proposed project determined to be insufficiently discussed in the LRDP, or whether the LRDP is acknowledged as a broad EIR and later EIRs and negative declarations on narrower projects will be focusing on determining the project level impacts that could not have been reasonably known at the time of preparation of the LRDP.

Thank you for this opportunity to provide comment. Questions regarding this letter and further coordination on these issues should be directed to Mr. Matt Chirdon, Environmental Scientist, at (760) 757-3734.

Sincerely,

Edmund J. Pert
Regional Manager
For South Coast Region

cc: Scott Morgan, State Clearinghouse, Sacramento
Matt Chirdon, CDFG, Oceanside

State of California, Department of Fish and Game

Comment 1:

As stated on page 48 of the Draft Initial Study and Mitigated Negative Declaration (IS/MND), the biological surveys conducted for the 2007 LRDP EIR determined that there was no evidence of burrowing owl in this area of the campus, but recognized that this species could occasionally forage or disperse through this area. To ensure that burrowing owls would not be impacted by construction of the project, the Draft IS/MND (page 48) incorporates 2007 LRDP FEIR mitigation measure Bio-2a. This measure requires that a qualified biologist be retained to conduct a pre-construction burrowing owl survey and to undertake measures to protect and relocate any owls that may be occupying the site at that time. This measure was included in the UC Irvine 2007 LRDP Draft EIR, along with a conclusion that this would adequately mitigate potential impacts to the owl to less than significant. This EIR was circulated for a 45-day public review in 2007; no comments were received from the Department of Fish and Game regarding this section of the LRDP EIR. Mitigation measure Bio-2A is considered sufficient to identify owl presence on site and to protect owls from construction impacts.

Comment 2:

Although included on the California Native Plant Society (CNPS) rare plant list, the tarplant is not listed or proposed for listing as a protected species under the federal or California endangered species acts, and it is not a covered species in the Central/Coastal Orange County NCCP. No tarplants were observed in the undeveloped land west of Anteater Drive, including the project site, during the biological surveys conducted for the LRDP (LRDP FEIR VII App. C. page 28); however, it was noted that the plant could occur in isolated locations elsewhere on the campus. Suitable southern tarplant habitat is identified by CNPS as swamps and marshes, and valley and foothill grasslands. The site is covered mostly by disturbed, non-native grasslands which as indicated on page 47 of the Draft IS/MND developed as a result of former cattle grazing activities, and does not contain such suitable habitats. To confirm whether or not tarplants occur on the project site and to avoid a significant impact Mitigation Measure Ps-2 below will be adopted and implemented.

Ps-2: A pre-construction survey of the project site shall be conducted by a qualified botanist, during the typical blooming season of the southern tarplant (May-November). If a population of the plant is found within the project impact footprint seed from the plant(s) will be collected and dispersed within existing protected open space or similar areas on the campus adjacent to existing tarplant populations.

Comment 3:

The IS/MND (page 2) identifies the 2007 LRDP Final EIR as the source document for tiering, the Evaluation of Environmental Impacts (Section IV, page 29) includes a finding of "Project Impact Adequately Addressed in LRDP EIR, and the IS/MND provides references to statements and conclusions from the LRDP Final EIR. This document was written in conformance with CEQA Statutes 21093 and 21094 as well as the Guidelines section 15152. It is intended to examine the characteristics of the project site and the proposed development plan at a greater level of detail than was possible at the time of the LRDP Final EIR, and also to determine whether this project could result in impacts not identified in the LRDP Final EIR or which could exceed the severity and significance of the impacts identified in the LRDP Final EIR.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

RECEIVED
JUL 21 2009
UCI Campus & Environmental Planning

July 14, 2009

Alex Marks
University of California, Irvine
750 University Tower
Irvine, CA 92697-2325

Subject: University Hills Area 10 Faculty and Staff Housing Project
SCH#: 2009061048

Dear Alex Marks:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on July 13, 2009, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

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 contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2009061048
Project Title University Hills Area 10 Faculty and Staff Housing Project
Lead Agency University of California, Irvine

Type MND Mitigated Negative Declaration

Description Implementation of the proposed project would construct a neighborhood of ~260 homes to be occupied by UCI faculty and staff. The proposed project would be located on ~35 acres of undeveloped land located immediately southeast of the intersection of Gabriellino Drive and California Avenue in the southeastern part of the campus. The project also include construction of a new street connecting the neighborhood to Anteater Drive on the campus.

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

Project Location

County Orange
City Irvine
Region
Lat / Long 33° 38' 7.98" N / 117° 50' 0.00" W
Cross Streets Gabrielino Dr and California Ave
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways SR 73
Airports
Railways
Waterways San Diego Creek
Schools 4 IUSD
Land Use Housing Reserve

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 5; 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

Date Received 06/12/2009 **Start of Review** 06/12/2009 **End of Review** 07/13/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201
http://www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, Governor
DONALD KOCH, Director

July 13, 2009

Clem 7.13.09 e

University of California, Irvine
Attn: Mr. Alex S. Marks
Office of Campus & Environmental Planning
750 University Tower
Irvine, CA 92697-2325

Subject: Comments Regarding Mitigated Negative Declaration (MND) for University Hills Area 10 Faculty and Staff Housing Project SCH# ~~2009061048~~, Orange County

2009061048

Dear Mr. Marks:

The Department of Fish and Game (Department) has reviewed the Initial Study and Mitigated Negative Declaration (IS/MND) for the above referenced project relative to impacts to biological resources and regional conservation planning.

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 35 acres of undeveloped land located immediately southeast of the intersection of Gabrielino Drive and California Avenue, in the southeastern part of the campus. The proposed project is a development plan for approximately 260 homes, to be occupied by faculty and staff of the University of California, Irvine (UCI). Development of the site is envisioned to include approximately 25 acres of neighborhoods and associated infrastructure such as roadways, on- and off-street parking, and recreational/open space amenities including an approximately one acre neighborhood park.

The project site is located entirely within the western edge of the approximately 54 acre Housing Reserve area, designated in the 2007 Long Range Development Plan Final Environmental Impact Report (LRDP) Land Use Plan. According to the 2007 LRDP (pages 61-64); the Housing Reserve is intended to accommodate future university housing needs. The proposed project is tiered from UCI's 2007 LRDP (State Clearinghouse No. 2006071024), and has incorporated identified avoidance, minimization, and compensatory mitigation identified therein to the proposed project.

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1. The MND describes the proposed project site as providing suitable habitat for western burrowing owl, a declining raptor species classified by the Department as a "Species of Special Concern." No burrowing owls were observed in this area during the biological surveys conducted for the 2007 LRDP. Due to the rapid decline of burrowing owls within

the region, any impacts to burrowing owl wintering or breeding habitat would be considered significant. The Department recommends that survey methods and mitigation measures follow the Burrowing Owl Consortium's *1993 Burrowing Owl Protocol and Mitigation Guidelines* including the passive relocation guidelines. The guidelines specify that if a Phase II survey results in the discovery of burrowing owl, sign, or potential burrow sites a Phase III survey should be performed during the breeding season to determine use of the site by burrowing owl and total number of owls on the site. Breeding season surveys assist in assessing the true area of mitigation needed to offset the project loss of habitat by observing use of the site by burrowing owl, and how much area burrowing owl utilize during foraging activities. The Phase III breeding season surveys should consist of four equally spaced surveys performed between April 15 and July 15. The Burrowing Owl Consortium's burrowing owl conservation measures may be viewed by utilizing an internet browser and visiting http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf

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Thank you for this opportunity to provide comment. Questions regarding this letter and further coordination on these issues should be directed to Mr. Matt Chirdon, Environmental Scientist, at (760) 757-3734.

Sincerely,

Edmund J. Pert
Regional Manager
For South Coast Region

cc: Scott Morgan, State Clearinghouse, Sacramento
Matt Chirdon, CDFG, Oceanside

State of California, Governor's Office of Planning and Research

Comment 1

This correspondence confirms completion of the State Clearinghouse review process for the Draft IS/MND. One state agency submitted comments through the Clearinghouse, the Department of Fish and Game, and this letter is attached to the Clearinghouse transmittal. This is the same letter presented and responded to earlier in this section and no additional response is necessary.

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E

APPENDIX E: MITIGATION MONITORING & REPORTING PROGRAM

UNIVERSITY HILLS AREA 10 FACULTY AND STAFF HOUSING PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
Air Quality				
Aes-1A	Prior to project design approval for future projects that implement the 2007 LRDP and are located in the South Campus, in the vicinity of Bonita Canyon Drive, UCI shall ensure that the projects include design features to minimize visual impacts from off-campus areas. These design features shall include, but are not limited to, the following: i. A 50-foot wide (minimum) landscaped buffer located along the edge of the campus along the project frontage; ii. Building mass and/or proportions, and exterior treatments and/or colors, that are compatible with the surrounding development and visual character; and iii. Project landscape design that reduces visual impacts and integrates the project into the visual landscape.	ICHA/CEP	Prior to project design approval[(1)]	CEP to confirm Design Review Team review and approval[(2)]
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.	ICHA/CEP	Prior to project design approval[(1)]	CEP to confirm and document policy and guideline compliance
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.	ICHA/CEP	During design development	CEP to confirm and document policy and guideline compliance
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,	ICHA/CEP	Prior to commencement	ICHA to develop and implement plan

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	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):		of construction activities and during construction	CEP to confirm and monitor
	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_x diesel fuel to the extent that it is readily available at the time of construction.			

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	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 public complaints and corrective actions taken to resolve complaints.			
Ps-1	Prior to initiating on-site construction, the UCI Office of Campus and Environmental Planning shall ensure that the project's construction emissions mitigation plan includes a grading plan which identifies the NOx control measures and the complete set of earthmoving equipment to be employed on a typical grading day along with calculations of daily NOx emissions to verify that total daily emissions would be below the SCAQMD threshold of 100 pounds/day. Emission reductions may be achieved through the use of any combination of CARB certified Tier 3 equipment, diesel oxidation catalysts, hourly limits on the operation of certain pieces of equipment, an extended or altered grading program, or other equivalently effective control measures.	ICHA/CEP	Prior to construction	CEP to confirm and document policy compliance.
Biological Resources				
Bio-2A	Prior to initiating on-site construction for future projects in the east campus and west campus that implement the 2007 LRDP and involve land clearing, grading, or similar land development activities adjacent to suitable habitat for the western burrowing owl (i.e., large open areas of non-native grassland, ruderal (weedy) areas, and scrub habitat), UCI shall retain a qualified biologist to conduct a	ICHA/CEP	Prior to construction	ICHA to coordinate surveys and incorporate into construction documents and CEP to

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	burrowing owl survey of the respective habitat areas within 300 feet of the approved limits of disturbance. If occupied burrows are detected from the survey, then they shall not be disturbed during the nesting season (February 1 through August 31) until the biologist verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows. When destruction of occupied burrows is unavoidable, relocation burrows shall be created (by installing artificial burrows) at a ratio of 1:1 in suitable foraging habitat. The biologist shall document all findings and results in a report submitted to UCI.			confirm
Ps-2:	A pre-construction survey of the project site shall be conducted by a qualified botanist, during the typical blooming season of the southern tarplant (May-November). If a population of the plant is found within the project impact footprint seed from the plant(s) will be collected and dispersed within existing protected open space or similar areas on the campus adjacent to existing tarplant populations.	ICHA/CEP	Prior to construction	ICHA to coordinate surveys and seed dispersal if applicable. CEP to confirm/assist
Cultural Resources				
Cul-1C	Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally-affiliated Native American) to monitor these activities. In the event of an unexpected archeological discovery during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological resources, in accordance with the procedures below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If the archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: i. Perform appropriate technical analyses; ii. File any resulting reports with the South Coastal Information Center; and iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.	ICHA/CEP	During construction	On-site construction supervisor to notify ICHA/CEP who will stop/direct work
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.	ICHA/CEP	During construction and at time of find	Qualified consultant to notify CEP and ICHA who will stop/direct work

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
Cul-4B	If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.	ICHA/CEP	At time of find	CEP to retain documentation that procedures were followed
Cul-4C	For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: i. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI); ii. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and iii. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.	ICHA/CEP	When resource determined to be significant	CEP to retain documentation that procedures were followed
Hazardous and Hazardous Materials				
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.	ICHA	Prior to construction	ICHA to record Fire Marshal notification and notify CEP
Hydrology and Water Quality				
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.	ICHA/CEP	Prior to project design approval(1)	ICHA to incorporate into project design, and submit study to CEP for use completing environmental analysis
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,	ICHA/CEP	Prior to construction	ICHA to confirm preparation plan,

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	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.			deliver to CEP, and incorporate in construction documents E&HS/CEP to confirm erosion control plan implementation by contractor
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	ICHA/EH&S/ CEP	Prior to project design approval(1)	ICHA to confirm incorporation in construction documents Notification to CEP and EH&S E&HS/CEP to confirm implementation by contractor

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	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.			
Noise				
Noi-1A	Prior to project design approval for future projects that implement the 2007 LRDP and include noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), UCI shall ensure that the project design will adhere to the following state noise standards: 60 dBA CNEL (single-family campus housing); 65 dBA CNEL (multi-family campus housing, dormitories, lodging); and 70 dBA CNEL (classrooms, libraries, clinical facilities). Applicable project design features may include, but are not limited to, the following: i. Specific window treatments, such as dual glazing, and mechanical ventilation when the 45 dBA CNEL limit within habitable rooms and the 50 dBA CNEL limit within classrooms can only be achieved with a closed window condition. ii. Setbacks; orientation of usable outdoor living spaces, such as balconies, patios, and common areas, away from roadways; and/or landscaped earthen berms, noise walls, or other solid barriers.	ICHA/CEP	Prior to project design approval[(1)]	CEP to include determination in environmental analysis ICHA to incorporate in project plans and CEP to confirm
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-	D&CS	Prior to construction	ICHA to confirm incorporation in construction documents CEP notification

Number	Mitigation Measure	Responsible Party	Mitigation Timing	Monitoring and Reporting Procedure
	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.			
Traffic/Transportation				
Tra-1B	UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus.	CEP	Ongoing	CEP to document implementation of efforts
Tra-1J	If a campus construction project or a specific campus event requires an on-campus lane or roadway closure, or could otherwise substantially interfere with campus traffic circulation, the contractor or other responsible party will provide a traffic control plan for review and approval by UCI. The traffic control plan shall ensure that adequate emergency access and egress is maintained and that traffic is allowed to move efficiently and safely in and around the campus. The traffic control plan may include measures such as signage, detours, traffic control staff, a temporary traffic signal, or other appropriate traffic controls. If the interference would occur on a public street, UCI shall apply for all applicable permits from the appropriate jurisdiction.	ICHA/CEP/PTS	Prior to construction	ICHA to incorporate in construction documents and provide to CEP and PTS CEP to confirm review

CEP = Campus and Environmental Planning
EH&S = Environmental Health and Safety
PTS = Parking and Transportation Services

(1) "Design approval" is the approval of project design by the Regents (or their delegates, per Regents policy).
(2) "DRT approval" is the approval of the *schematic design* by the Design Review Team (DRT).