# FINAL

# TIERED INITIAL STUDY

# &

# MITIGATED NEGATIVE DECLARATION

## UNIVERSITY EXTENSION CLASSROOM BUILDING

SCH #2014071040

**University of California, Irvine**
**Office of Environmental Planning and Sustainability**

**August 2014**

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## EXHIBITS

# PROJECT INFORMATION

1. **Project title:**
   University Extension Classroom Building

2. **Lead agency name and address:**
   University of California, Irvine
   Office of Environmental Planning and Sustainability
   750 University Tower
   Irvine, CA 92697-2325

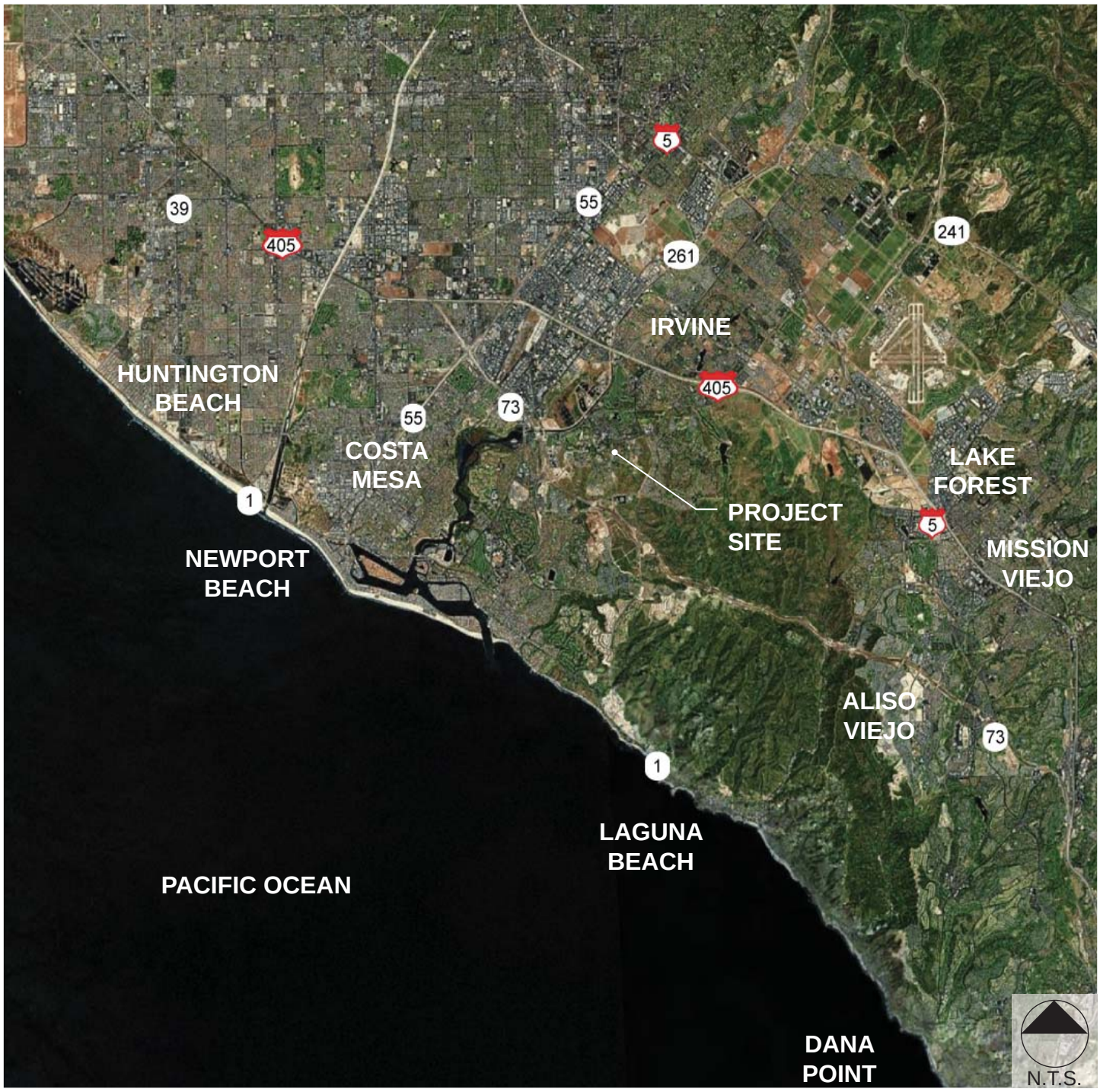
3. **Contact person and phone number:**
   Matthew Deines, Senior Planner
   949.824.4929

4. **Project location:**
   As shown on Exhibit 1 (page 2), the University of California, Irvine is located in south-central Orange County, about five miles inland from the Pacific Ocean. The proposed project site is located adjacent East Peltason Drive in the east campus area, as shown on Exhibit 2 (page 3).

5. **Project sponsor's name and address:**
   University of California, Irvine
   Office of Environmental Planning and Sustainability
   750 University Tower
   Irvine, CA 92697-2325

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

7. **Identification of previous EIRs relied upon for tiering purposes (including all applicable LRDP and project EIRs) and address where a copy is available for inspection.)**
   UCI 2007 Long Range Development Plan (LRDP) Final Environmental Impact Report (FEIR) (State Clearinghouse No. 2006071024), certified by the Regents of the University of California, November 2007. This document, including all four volumes, is available for public inspection at the Office Environmental Planning and Sustainability, 750 University Tower, Irvine, CA 92697-2325.




*Source: UCI GIS*

University Extension Classroom Building
*University of California, Irvine*

Exhibit 1
Regional Location Map


N.T.S.

University Extension Classroom Building
*University of California, Irvine*

Exhibit 2
Project Site & Construction Staging

# PROJECT DESCRIPTION

**1. Description of Project**

The proposed project would construct an approximately 46,000 assignable square foot (ASF) (70,000 gross square foot (GSF)), 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The proposed University Extension Classroom (UEC) building would serve UCI's University Extension (UNEX) International Program (IP), English as a Second Language program, which currently utilizes space in other campus buildings, and provide space for UNEX support uses including a distance learning center and administrative space. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. The project site would encompass approximately 1 acre (see Exhibit 2).

The UEC building will accommodate up to 616 IP students (who typically attend learning programs ranging from 4-12 weeks in duration) including approximately 126 existing IP students, and approximately 211 faculty and staff employees, including approximately 163 existing employees. Existing UNEX employees are currently located in existing campus buildings or in leased space in University Research Park.

Students attending UNEX-IP programs live off-campus during their visit selecting a range of accommodations including rental apartments or staying with existing households. UNEX-IP students typically do not have private vehicles, therefore nearly all students travel to campus by a UNEX-sponsored UCI shuttle, OCTA bus service, bicycle, or on foot. The UCI shuttle and OCTA bus service utilize an existing transit stop on Campus Drive located in the vicinity of the proposed UEC project site. The approximately 48 new faculty and staff employees who would be anticipated to be hired in association with the proposed project would potentially result in a limited number of new vehicle trips to the campus. To further encourage alternative transportation serving the project site, the project will include construction of a pedestrian and bicycle bridge over East Peltason Drive connecting the project site to the academic core, existing UNEX facilities, and the UCI and regional pedestrian and bike trail system. Bike parking would be provided on the site to further encourage bicycle use.

Project implementation would include site development and building construction. Site development would involve demolition of the existing surface parking lot, landscaping, and walkways where the building would be constructed, earthwork, connection to campus utility and drainage systems, landscape improvements, construction of a small number of visitor and accessible parking spaces, and street and pedestrian walkway improvements connecting the project site to adjacent local roads and pathways. Utility infrastructure, including domestic water and sanitary sewer facilities, sufficient to serve the proposed project are available in the site vicinity and would be extended, modified, upgraded, or relocated within the project area as needed commensurate with project construction activities. The project would include installation of a new fire hydrant along the west sidewalk of Adobe Circle South adjacent the site.

The site is currently developed as an asphalt parking lot, therefore consists of primarily impervious surfaces. The UEC facility will include a combination of pervious (landscaping) and impervious surfaces (rooftops and paving) therefore the percentage of impervious surface will likely decrease as a result of project implementation. Existing hydrology patterns on the site would be maintained to the extent practical and as determined during the project's final design stage. Low impact development stormwater management techniques and/or other best management practices (BMPs) would be installed during construction to manage project generated stormwater consistent with UCI's Stormwater Management Program and in conformance with water quality control standards established in the countywide Drainage Area Management Plan. The project would not require the expansion of existing or

construction of new stormwater drainage facilities on the campus.

The exterior finish of the UEC facility would be consistent with campus design standards including the UCI Physical Design Framework and Campus Standards and Design Criteria, and is anticipated to be constructed of concrete, stone, or brick masonry surfaces, and low-reflectance windows. Site lighting would include pole, ground, and building mounted lights consistent with UCI design standards. Appropriate acoustical and visual buffers, as determined during the final design stage, will be included in the project to minimize any potential project related aesthetic and/or noise impacts to existing Verano Place Graduate Student Apartment units located to the south of the UEC project site, during construction.

Vehicular access to the UEC site during construction and operation would occur via Adobe Circle Road. The project would include construction of building service access, loading dock, and vehicle loading/unloading area. The southern portion of Lot 17A would remain in use as a surface parking lot following completion of the project. As the project site is located within the campus interior, construction of the UEC would not be anticipated to require a California Department of Transportation encroachment permit. Approximately 100 existing parking spaces in Lot 17A would be displaced by the UEC facility. Parking spaces to support the new facility and replace those displaced by construction would be provided within the Anteater Parking Structure and the remaining areas of Lot 17A which have adequate capacity.

The project's proposed elements are depicted on Exhibit 3 and the facility's conceptual building mass visual simulation is provided on Exhibit 8. The analysis contained in this document includes the approximately 70,000 GSF program and associated improvements described above. The design/build project team selected by UCI to implement the project will develop a final project design consistent with this conceptual layout, which is subject to refinement during the design/build process; no refinements are anticipated that would affect the environmental analysis set forth in this Initial Study (IS).

**2. Sustainability Initiatives**

The proposed UEC facility would be consistent with the University of California's (UC) Policy on Sustainable Practices (PSP) including the requirement to achieve a minimum LEED certification level of "Silver". The project would incorporate measures resulting in deep energy efficiency, construction waste reduction, recycled material use, and water conservation. Such features would include an overall energy efficiency designed to exceed California Title 24 criteria by at least 20%.

To achieve this goal, the project would include various energy efficiency features such as high-performance glazing, energy efficient lighting, and high efficiency air conditioning equipment where applicable. Individual building component features would contribute to overall annual energy savings, allowing the project to exceed the Code required minimum energy performance. The proposed project would also include passive solar building orientation and shading devices to take advantage of, and control solar gain as well as natural ventilation and cross ventilation. Site improvements as described above would also include, to the extent practicable, a natural stormwater treatment system(s) and/or permeable paving materials, and drought tolerant plant species in landscaped areas. Project elements to support the use of alternative transportation modes including bicycle racks and pedestrian connections to the nearby transit stop, as stated above, would be integrated into the project design.

**3. Project Phasing/Construction Schedule**

Construction of the UEC would take approximately 23 months, with commencement in approximately January 2015 with completion in approximately December 2016. Although the selected Design-Builder would determine the final

construction schedule and phasing, approximately two months would be anticipated for demolition of the exiting site improvements, one month for site excavation and soil removal/compaction, and the balance of construction over an approximately 21 month period. Site excavation would be anticipated to require the export of approximately 5,000 cubic yards of earth material. The recipient for the exported soil and demolished material is yet to be determined. The analysis in this IS assumes that the exported earth materials will be transported by truck to a location within 20 miles of the campus which is consistent with the construction practice on previous campus projects of similar scope.

Project construction is anticipated to involve a dozer, grader with blade, loader, belly dump trucks, and water-trucks. The estimated duration of painting/finishing would be two months and include water-based latex paint in the building interior and high performance coating for metal exterior components. Pile driving is not anticipated to be required to construct the project. An area of up to 1 acre area within Lot 17 A would be provided for a construction lay-down yard and staging area with off-site construction staging and contractor parking located in an existing gravel parking area near the intersection of Bison Avenue and Health Sciences Drive in the UCI west campus area or in an existing gravel lot near Arroyo Drive in the East Campus area (see Exhibit 2). Construction related truck traffic would comply with the City of Irvine's Designated and Restricted Truck Routes.

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

As stated above, the project would be constructed on a portion of Surface Parking Lot 17A on the UCI campus, which is located in central/coastal Orange County in the southern portion of the City of Irvine (see Exhibit 1, Regional Location Map). The project site is located in an urbanized portion of the campus. Surrounding land uses include the Student Health Services II building to the north, the Verano Place Apartments graduate student housing complex to the east (across Adobe Circle Road South) and south, and existing UNEX classrooms and Student Health 1 to the west across East Peltason Drive.

There are no rock outcroppings, water bodies, such as streams, rivers, wetlands, riparian areas, or other distinctive natural features on or adjacent to the site. The existing site topography slopes in a northerly direction with an elevation change of approximately 20 feet. The site includes various trees, shrubs, and ornamental species located primarily along its border with East Peltason Drive, which were planted in association with the construction of Lot 17A. Thus, proposed site would be described as being in a developed state. An aerial view of the UEC facility site and adjacent land uses is shown in Exhibit 4. Ground level photographs of the project site and surroundings (taken in March 2014) are presented in Exhibit 6 a map depicting the photo locations is provided as Exhibit 5.

**5. Consistency with the LRDP**

The UEC facility is consistent with the 2007 LRDP. The project site is located in UCI's East Campus planning sector immediately adjacent to the Academic Core. The land use identified for the site in the 2007 Long Range Development Plan (LRDP) is Student Housing, and this LRDP land use designation includes classroom space as an allowable and compatible use. The pedestrian bridge is identified in the 2007 LRDP circulation element (see LRDP Figure 5-5, page 74) as an important circulation link. The LRDP accommodates a total of 9.9 million GSF of academic and support space to meet UCI's strategic academic goals through the year 2025. Existing UCI academic and support space totals approximately 5.4 million gross square feet including existing UNEX facilities, leaving a remaining capacity of 4.5 million GSF of academic and support space to be constructed within the LRDP, including the 70,000 GSF UEC building. The employees and students served by the UEC project fall within the overall population projections accommodated in the LRDP development program. The LRDP accommodates a total of 37,000 regularly-enrolled students (i.e. students in degree programs that are normally on campus full time throughout the academic year) plus additional UCI affiliates for a total LRDP on-campus population of 55,750. UCI's current student enrollment is approximately 28,000 regularly enrolled students, providing LRDP capacity for

an additional 9,000 full time students. The part-time students and full time employees served by the UEC project fall within these general population projections accommodated in the LRDP.

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

University of California

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the environmental document and approving the proposed project. Pursuant to authority delegated from the Board of Regents of the University of California (The Regents), the UC Irvine Chancellor would consider approval of the proposed project in fiscal year 2014-15.

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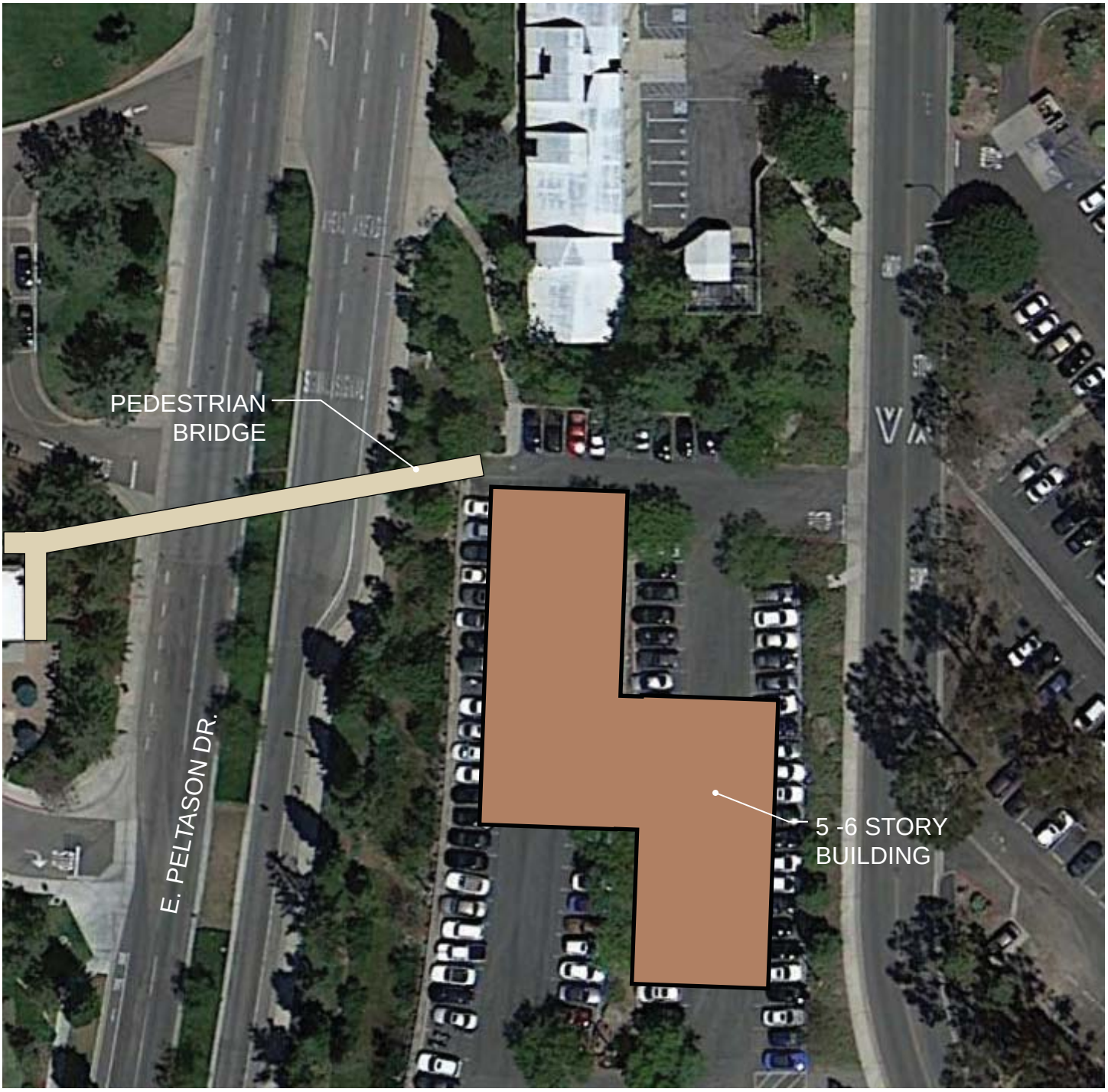


Note: This exhibit represents a conceptual layout plan of the project, which is subject to refinement during the design/build process.

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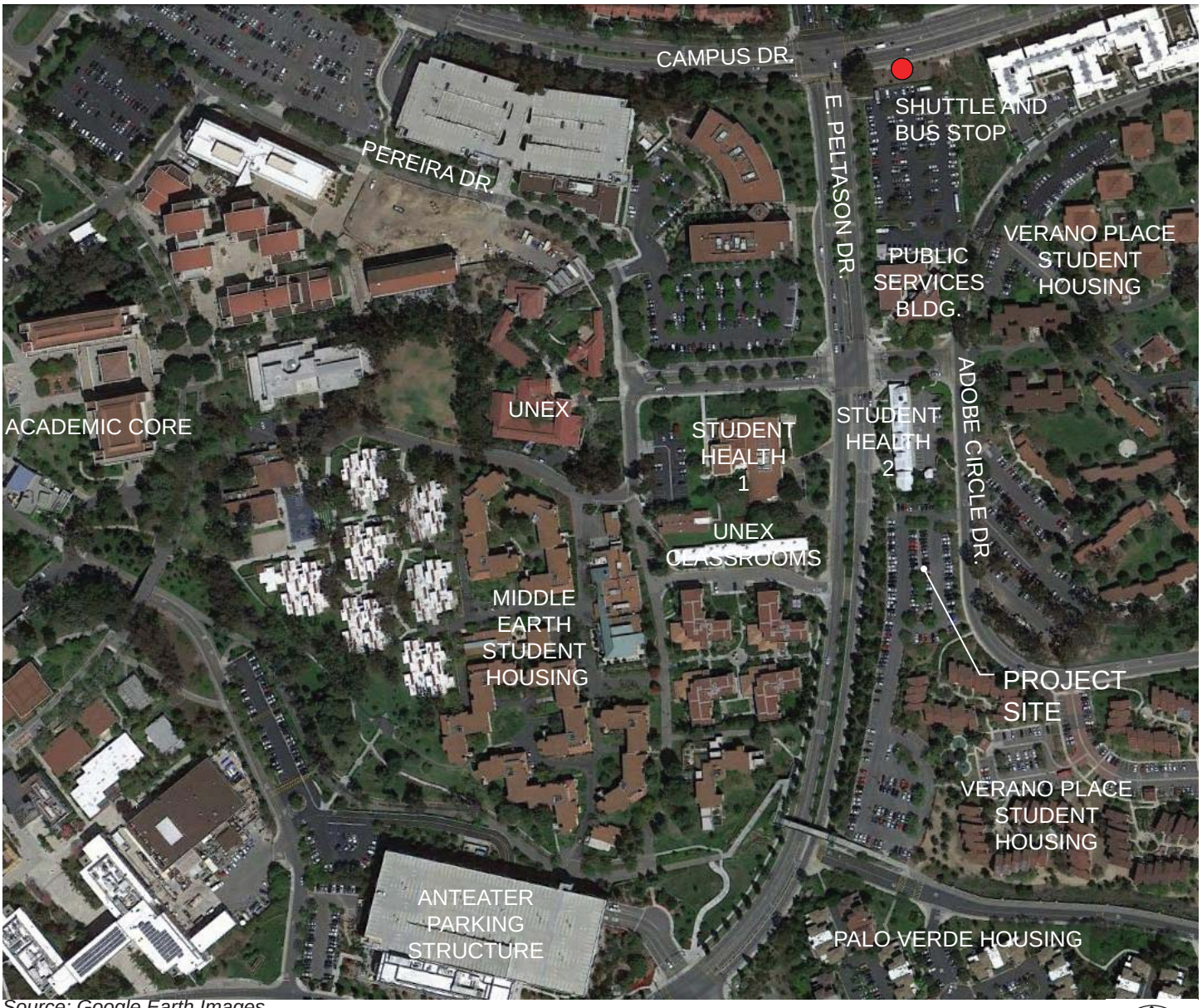


*Source: Google Earth Images*

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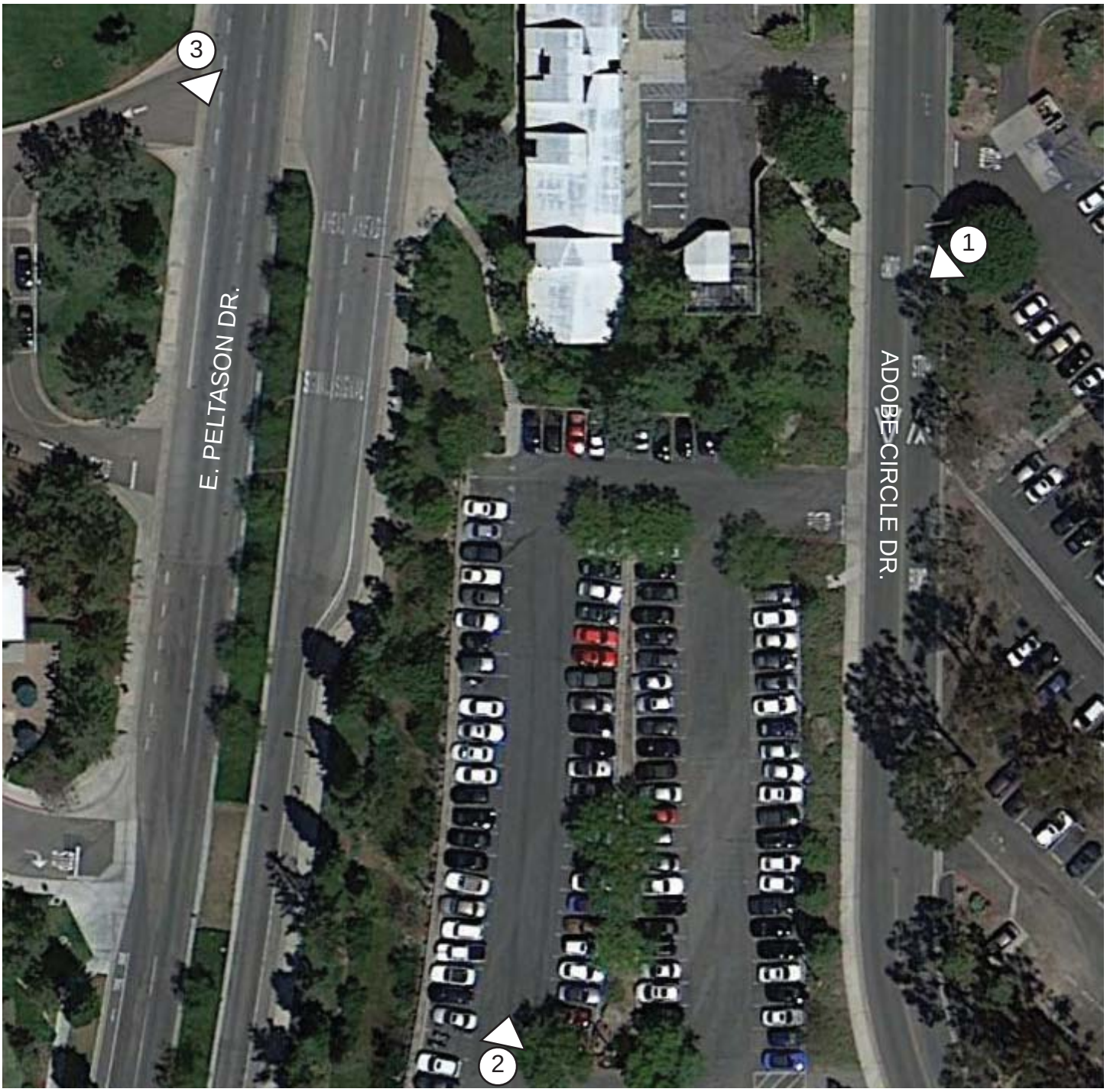



N.T.S.

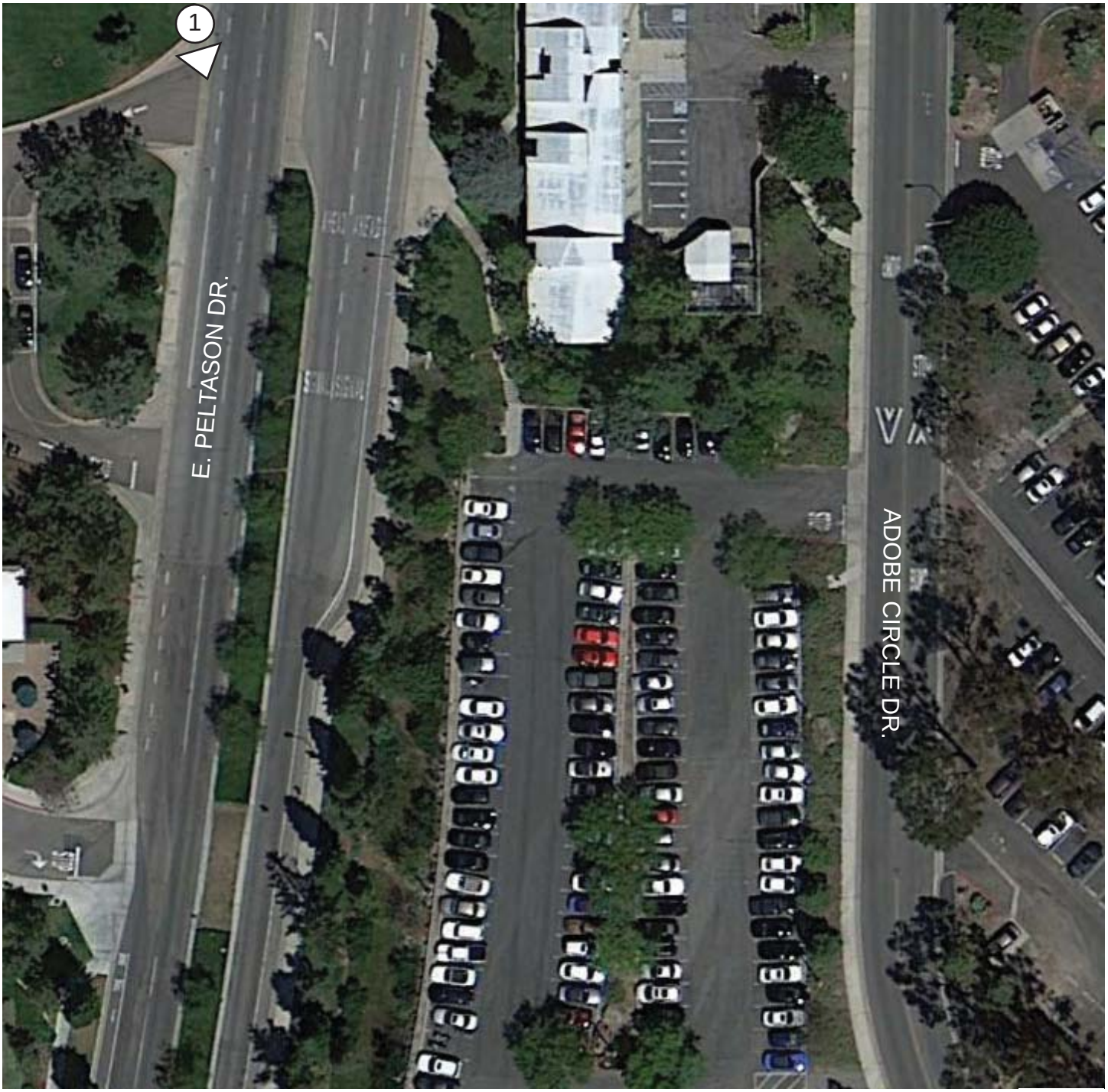
University Extension Classroom Building
*University of California, Irvine*

Exhibit 5
Site Photographs Location Key

View from Adobe Circle Dr.

View from parking lot looking north-northeast

View from E. Peltason looking southeast

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View from E. Peltason Dr.

Note: As stated in the project description (page 1), this exhibit represents a conceptual building mass visual simulation of the project.

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

| | | | | | |
|---|---|---|---|---|---|
| | Aesthetics | | Air Quality | | Biological Resources |
| | Cultural Resources | | Geology/Soils | | Greenhouse Gas Emissions |
| | 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 — Date: 7.2.14

Richard Demerjian — Printed Name

For

## EVALUATION OF ENVIRONMENTAL IMPACTS

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

(A) "Potentially Significant Impact" is appropriate if there is substantial evidence that the project's effect may be significant. If there are one or more "Potentially Significant Impacts" a Project EIR will be prepared.

(B) "Project Impact Adequately Addressed in LRDP EIR" applies where the potential impacts of the proposed project were adequately addressed in the LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross-references (including section/page numbers) the relevant analysis in the LRDP EIR.

(C) "Less Than Significant With Project-level Mitigation Incorporated" applies where the incorporation of project specific mitigation measures will reduce an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All project-level mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less than significant level.

(D) "Less Than Significant Impact" applies where the project will not result in any significant effects. The effects may or may not have been discussed in the LRDP Program EIR. The project impact is less than significant without the incorporation of LRDP or Project-level mitigation.

(E) "No Impact" applies where a project would not result in any impact in the category or the category does not apply. Information is provided to show that the impact does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer may be based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).

# 1. AESTHETICS

| Issues | (A) Potentially Significant Impact | (B) Project Impact Adequately Addressed in LRDP EIR | (C) Less Than Significant with Project-level Mitigation Incorporated | (D) Less Than Significant Impact | (E) No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a) Have a substantial adverse effect on a scenic vista? | | | | | ✓ |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | | | ✓ |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | | | | ✓ | |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | | ✓ | | | |

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

***Relevant Elements of Project:***

As stated in the Project Description, the new classroom building would be constructed on surface parking lot 17A. The LRDP FEIR did not identify any scenic vistas on the campus (LRDP FEIR Vol. I page 4.1-6); as such, no scenic vistas are located on or adjacent to the project site.

***Discussion of Potential Project Impacts:***

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

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

***Relevant Elements of Project:***

As stated above, the project site is developed. The IS for the 2007 LRDP indicated that development on

the campus, including the project site, would not substantially damage scenic resources such as trees, rock outcroppings, and historic buildings within a State scenic highway; therefore, the issue was not addressed in the LRDP FEIR (LRDP FEIR Vol. I page 4.1-18). No changes have occurred to the campus or the project site with respect to scenic resources within a state scenic highway since the LRDP FEIR's certification.

***Discussion of Potential Project Impacts:***
As the LRDP FEIR did not identify any scenic resources within a state scenic highway on the campus and no changes have occurred to the campus or the project site with respect to scenic resources within a state scenic highway since its certification no impact on such resources 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

**1.c) Visual Character: Less Than Significant**

***Relevant Elements of Project:***
As stated in the Project Description, the project site is located within the East Campus sector immediately adjacent to the Academic Core sector and surrounded by developed land.

***Discussion of Potential Project Impacts:***
The LRDP FEIR determined that much of the viewshed of future 2007 LRDP development in the East Campus would be limited by landscape buffers or obstructed by existing development. Therefore, the LRDP FEIR determined that the East Campus viewshed was not considered to be a visually sensitive area and impacts to the visual character associated with the LRDP would be less than significant (LRDP FEIR Vol I page 4.1-8).

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

***Relevant Elements of Project:***

The proposed project site already includes sources of light and/or glare associated with the existing surface parking lot and adjacent areas. As described in the Project Description, project lighting and exterior finishes would be consistent with campus design standards.

***Discussion of Potential Project Impacts:***

The LRDP FEIR concluded that implementation of the 2007 LRDP would result in the development of new structures that would have the potential to increase sources of light from exterior illumination and landscaped areas, and glare from the sun reflecting off reflective building surfaces (LRDP FEIR Vol I page 4.1-16). To reduce the project's glare and light impacts to a less than significant the project would comply with the restrictions set forth in LRDP FEIR Mitigation Measures (MM) Aes-2A and Aes-2B. Measure 2A requires the use of non-reflective materials for lighting fixtures, low-reflectance windows, other glazing, and exterior surfaces that could otherwise produce glare and would be enforced through project design specifications, which state that non-reflective glass must be used on all exterior surfaces, and that no reflective surfaces, treatments or coatings would be permitted. Measure Aes-2B requires pre-construction approval of an outdoor lighting plan for the project that includes lighting design, shielding, orientation, and intensity limitations to prevent light spillage off site and avoid off-site glare impacts. Compliance with these measures, as stated in the LRDP FEIR, would ensure that this project does not produce significant light or glare impacts (LRDP FEIR Vol I pages 4.1-16/17).

***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:***
Less than significant

# 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? | | | | | ✓ |

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

***Relevant Elements of Project:***

The proposed UEC and the entire UCI campus are located in the South Coast Air Basin (SCAB), a region covering Los Angeles, Orange, San Bernardino and western Riverside Counties. Air quality in the SCAB is governed by a regional air quality management plan (AQMP), based on population projections developed by the Department of Finance (DOF) for California on a county-by-county basis, which is administered by the South Coast Air Quality Management District (SCAQMD) to achieve compliance with state and national air quality standards. The Southern California Association of Governments (SCAG) uses the projections to determine regional growth and related vehicular transportation patterns. The SCAQMD bases its predictions of future criteria pollutants, including mobile and area source emissions on these population projections. Likewise, UCI's long term enrollment planning is based on population growth projections from DOF. As a result, the 2007 AQMP accounts for future growth within the Educational Services Sector (Sector 82) at the county level, which includes all educational facilities within Orange County (LRDP FEIR Vol I page 4.2-11). As stated in the Project Description, the proposed project would accommodate projected program growth.

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

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
None required

***Significance Determination After LRDP EIR Mitigation Measures:***
Not applicable

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination after All Mitigation:***
Not applicable

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

***Relevant Elements of Project:***
The LRDP FEIR states that construction activities associated with implementation of the LRDP, including those associated with the proposed project, would result in temporary increases in air pollutant emissions generated in the form of fugitive dust (PM10 and PM2.5) and exhaust (NOx, SOx, CO, VOC, PM10, and PM2.5) (LRDP FEIR Vol I page 4.2-12) emissions. As noted in the Project Description, the anticipated construction schedule includes an approximately one month grading phase (including demolition of existing site features) and a construction period of approximately 23 months.

***Discussion of Potential Project Impacts:***
The LRDP FEIR concluded that although construction on the campus would result in temporary adverse impacts to the ambient air quality, actual project related emissions may be lower and impacts would be short term and dependent on construction schedules and level of activity on a maximum daily basis (LRDP FEIR Vol I page 4.2-14). The operational impacts associated with the 2007 LRDP would involve incremental emissions of air pollutants (NOx, VOC, CO, SOx, PM10, and PM2.5) resulting from three emission source categories: area, stationary, and vehicular sources (LRDP FEIR Vol I page 4.2-15).

Consistent with LRDP FEIR MM Air-2A, an air quality assessment (see Appendix A) was prepared in conjunction with this environmental review to assess the project's anticipated construction and operation related emissions. The assessment was prepared utilizing software recommended by the SCAQMD (CalEEMod v. 2013.2.1) and assumed implementation of construction control measures specified in LRDP FEIR MM Air-2B, which provide significant reductions in emission levels compared to levels without such measures (LRDP FEIR Vol I pages 4.12-18 to 20) and SCAQMD Rule 403 regarding site watering. The air quality assessment concluded that construction of the project, with implementation of Rule 403 and LRDP FEIR MM Air-2B, would not result in any significant short term construction related impacts and no project specific mitigation measures are required (Appendix A page 33). The air quality assessment also modeled emissions associated with the project's anticipated long-term operations. Results of this modeling determined that the operation of the project would not result in any significant long-term air quality impacts (Appendix A, page 34).

***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:***
None Required

***Significance Determination after All Mitigation:***
Less than Significant

**2.c) Cumulatively Considerable Net Increase of Any Criteria Pollutant: Project Impact Adequately Addressed in LRDP EIR**

***Relevant Elements of Project:***
The 2007 LRDP FEIR identified six criteria air pollutants pertinent to the EIR's analysis: ozone ($O_3$), carbon monoxide (CO), Nitrogen Oxide ($NO_2$), Sulfur Dioxide ($SO_2$), and Particulate Matter 10 ($PM_{10}$,) and 2.5 ($PM_{2.5}$). As noted in the air quality assessment prepared for the project, the air basin in which UCI is located, including the project site, is currently in non-attainment status with respect to California and federal standards for $O_3$, $PM_{10}$, and $PM_{2.5}$ (Appendix A page 10). The 2007 LRDP FEIR determined that implementation of future LRDP projects that contribute to these nonattainment pollutant emissions in excess of SCAQMD thresholds would be cumulatively considerable (LRDP FEIR Vol I page 4.2-28).

***Discussion of Potential Project Impacts:***
The 2007 LRDP FEIR concluded that because the South Coast Air Basin is in nonattainment for $O_3$, $PM_{10}$, and $PM_{2.5}$ implementation of future LRDP projects that exceed the SCAQMD thresholds for these pollutants would result in a cumulatively considerable contribution to this significant air quality impact (LRDP FEIR Vol I page 4.2-28). The air quality assessment prepared for the project determined that with the implementation of LRDP FEIR MMs Air-2A and 2B, which the LRDP FEIR determined would reduce the LRDP's cumulatively considerable contribution to these impacts to the extent feasible, the proposed UEC would not exceed the SCAQMD's thresholds for the criteria pollutants listed above (Appendix B page 30, LRDP FEIR Vol I page 4.2-28). Therefore, the proposed UEC would not result in cumulatively considerable impacts related to a net increase of any criteria pollutant.

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
Air-2A and Air-2B, included in the response to item 2.b

***Significance Determination After LRDP EIR Mitigation Measures:***
Less than Significant

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination after All Mitigation:***
Less than Significant

**2.d) Sensitive Receptors: Less Than Significant**

***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, including the proposed project. The HRA included toxic air contaminant emissions associated with laboratory operations, cogeneration operations, natural gas and diesel operation of medium and large boilers, gasoline storage and recovery, and diesel-fueled emergency engines and generators. Additionally, the LRDP FEIR included an analysis of carbon monoxide impacts associated with vehicular traffic (LRDP FEIR Vol I pages 4.2-21 to 26).

***Discussion of Potential Project Impacts:***
As stated in response to Issue 2.a, the project would not result in construction or operational related air

quality related impacts. The LRDP FEIR determined that implementation of the 2007 LRDP would not expose sensitive receptors to carcinogenic, non-carcinogenic, and localized carbon monoxide pollutant concentrations in excess of regulatory standards. Thus, no mitigation measures are required (LRDP FEIR Vol I page 4.2-26).

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
None required

***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: No Impact**

***Relevant Elements of Project:***
Once completed the proposed project would not create any unusual or objectionable odors. Any odors generated by the project would be the same as those presently occurring on the site and its surroundings.

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

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

**3.a) Species Impacts: No Impact**

***Relevant Elements of Project:***

As noted in the Project Description, the project site is located in UCI's East Campus planning sector, in an urbanized area of the sector. The site is neither adjacent the UCI Natural Communities Conservation Program (NCCP) Reserve or the UCI San Joaquin Marsh Natural Reserve.

***Discussion of Potential Project Impacts:***
In order to estimate direct impacts, areas anticipated for development under the 2007 LRDP were compared to mapped biological resources, as shown in Figures 4.3-2A through 4.3-2D in the LRDP FEIR. However, future growth anticipated in developed or urbanized portions of the campus, including the UEC site, is not depicted on the figures as it was determined that growth in such areas would not result in direct biological resource impacts (LRDP FEIR VI page 4.3-35). The project would comply with applicable federal and state regulations pertaining to construction during the nesting season, which generally runs March 1 through August 31 (as early as February 1 for raptor species); therefore, no impacts would occur to nesting birds.

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
Not 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.b) Riparian Habitat or Other Sensitive Natural Community: No Impact**

***Relevant Elements of Project:***
As stated in the Project Description, the project site is already developed and neither contains nor is adjacent to sensitive natural communities or riparian habitats.

***Discussion of Potential Project Impacts:***
As construction of the proposed project would not affect a sensitive natural community or riparian habitat there would be no 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

**3.c) Federally Protected Wetlands: No Impact**

***Relevant Elements of Project:***
As stated in the Project Description, the project site is already developed. No federally protected wetlands are located on the site.

***Discussion of Potential Project Impacts:***
As no federally protected wetlands occur on the project site, a jurisdictional delineation as described in the LRDP FEIR (LRDP FEIR Vol I page 4.3-46) is not required and construction of the project would have no impact.

***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:***
As stated in the Project Description, the project site is already developed. The 2007 LRDP FEIR determined that because the SR-73 toll road to the west and mixed use and residential areas to the north, east, and south border the campus there are limited wildlife movement corridors in the campus vicinity. (LRDP FEIR Vol I 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 Vol I 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, State, or federal policies, which apply to the project site for protection of biological resources.

***Discussion of Potential Project Impacts:***
There would be no conflict with any biological protection policies, because none applies 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

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

***Relevant Elements of Project:***
The project site is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat conservation plan.

***Discussion of Potential Project Impacts:***
There would be no conflict with any biological protection policies, because none applies 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 project site. A comprehensive Historic Resources Assessment was performed at UCI in 1989, which identified five areas of potential historical significance (LRDP FEIR Vol I page 4.4-5). Only one of the five, the UCI Ranch Building Complex, located approximately 0.40 mile away from the project site, was determined to have historical significance.

***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:***

Not Applicable

***Additional Project-Level Mitigation Measures:***

None required

***Significance Determination after All Mitigation:***

Not Applicable

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

***Relevant Elements of Project:***

As stated in the Project Description the project site is already developed. A status report of recorded archaeological sites on the UCI campus was prepared is support of the 2007 LRDP. Table 4.4-1 in the 2007 LRDP FEIR provides a summary of the recorded archeological sites within the campus. As indicated in the table, none of the sites recorded in the East Campus are located where the project would be constructed (LRDP FEIR Vol I pages 4.4-2 and 4).

***Discussion of Potential Project Impacts:***

As the project would not affect recorded archaeological resources on the campus identified in the LRDP FEIR implementation of LRDP FEIR mitigation measures Cul-1A and Cul-1B would not be required to construct the proposed project. However, as earth-moving activities could possibly uncover previously undetected archaeological resources, the LRDP FEIR determined that impacts to unrecorded archaeological sites would be mitigated with implementation of LRDP MM Cul-1C (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 UCI in 1988 determined that the Topanga Formation geologic units under the campus are considered to be of high paleontological sensitivity for vertebrate and invertebrate fossils. As depicted on LRDP FEIR Figure 4.4-1, the project site, although developed is located within an area of the campus considered regionally to be of high sensitivity for vertebrate and invertebrate fossils (LRDP FEIR Vol I pages 4.4-19-21).

***Discussion of Potential Project Impacts:***

According to the 2007 LRDP FEIR, development that occurs from implementation of the 2007 LRDP, including the proposed project, which would excavate sedimentary rock material other than topsoil, would have a significant impact on paleontological resources. These impacts would be reduced however to a less than significant level through the project's implementation of LRDP FIER MMs Cul-4A-C (LRDP FEIR Vol I 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: Less Than Significant Impact**

***Relevant Elements of Project:***

Although the project site is already developed, because human remains are often found buried beneath the ground surface there is a possibility that remains could occur somewhere on site and be uncovered during the project's earthmoving activities (LRDP FEIR Vol I page 4.4-18).

***Discussion of Potential Project Impacts:***

If human remains were discovered during construction the contractor would be required to notify the County Coroner, in accordance with section 7.50.5 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. Additionally, as noted in the 2007 LRDP FEIR if human remains are disturbed during grading or excavation UCI will comply with CEQA Guidelines Section 15064.5(e). The 2007 LRDP FEIR concluded that in the event human remains are disturbed, impacts would be less than significant with existing state law compliance.

***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. 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, Shaking, Liquefaction, Landslides: Less Than Significant Impact**

***Relevant Elements of Project:***

UCI, like most of southern California, is located in a seismically active area where strong ground shaking could occur during movements along any of several faults in the region. Although, no active or potentially active faults occur on the campus according to the State Alquist-Priolo Earthquake Fault Zoning Act program, a ground surface rupture is possible along the UCI Campus Fault, which extends from beyond the southeast region of the campus northwest through the campus center to University Drive, and is classified as a potentially active fault. The proposed building would be located outside of the 50 foot Restricted Use Zone (RUZ) setback for occupied buildings on either side of the UCI Campus Fault (LRDP FEIR Vol I pages 4.5-2 & 8-9). The 2007 LRDP FEIR indicates that because the majority of its soils is dense terraced deposits and characterized as gentle sloping to flat terrain, it is unlikely the campus would be subject to liquefaction or earthquake-induced landslides (LRDP FEIR Vol I page 4.5-9).

***Discussion of Potential Project Impacts:***

As stated in the LRDP FEIR, building plans for the UEC project would be reviewed for compliance with the CBC and the UC Seismic Safety Policy (SSP) and as noted above would not be within the RUZ; therefore, impacts associated with fault ruptures would be considered less than significant (LRDP FEIR

Vol I pages 5.4-8/9). An earthquake along any number of other 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. Although, occupants of the new building could be exposed to these hazards, its grading, foundation, and building structural elements would be designed to meet or exceed the California Building Code (CBC) seismic safety standards. In addition, UCI has adopted a number of programs and procedures to reduce the hazards from seismic shaking by preparing residents for emergencies including through compliance with the aforementioned Seismic Safety Policy. As such, compliance with these regulatory standards would ensure that hazards associated with seismically induced ground shaking would be less than significant (LRDP FEIR Vol I page 4.5-9). The 2007 LRDP FEIR indicated that compliance with the CBC and implementation of a site-specific geotechnical investigation would reduce impacts associated with ground failure and liquefaction, and landslide to less than significant (LRDP FEIR Vol I page 4.5-9).

***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:***
The LRDP FEIR identifies that erosion can occur as a result of, and can be accelerated by, site preparation activities associated with development, vegetation removal in landscaped (pervious) areas, and surface disturbance (LRDP FEIR Vol I page 4.5-10). As stated in the Project Description, the proposed building site is developed; there are no areas of exposed bare soil.

***Discussion of Potential Project Impacts:***
Demolition of existing surfaces and earthwork would result in exposed soil conditions during construction. As stated in the LRDP FIER, site grading and construction activities would comply with Chapters 29 and 70 of the CBC, which regulate excavation and grading activities respectively, and the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities, which requires that construction best management practices (BMPs) be implemented to prevent soil erosion. Such BMPs could include silt fences, watering for dust control, straw-bale check dams, and hydroseeding. The LRDP FEIR concluded that with implementation of these routine control measures potential construction-related erosion impacts would be less than significant (LRDP FEIR Vol I page 4.5-10).

***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:***
As stated in the Project Description, the proposed project site is already developed. The LRDP FEIR indicates that no areas of land subsidence have occurred within the campus (LRDP FEIR Vol I page 4.5-5) and that the majority of campus soils are terraced deposits unlikely to be subject to liquefaction due to material denseness and depth to groundwater (LRDP FEIR Vol I page 4.5-9). Loose or compressible soils are found primarily in undeveloped areas of the South Campus sector bordering Bonita Canyon Drive, more than a mile away from the project site (LRDP FEIR Vol I pages 4.5-11/12).

***Discussion of Potential Project Impacts:***
As noted in the LRDP FEIR, project compliance with the CBC and implementation of recommendations in a site-specific geotechnical investigation would reduce potential impacts associated with soil stability to a less than significant level (LRDP FEIR Vol I 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:***
As noted in the LRDP FEIR, expansive soils are prevalent on the UCI campus, including the project site, and generally either a dark brown sandy clay, clayey sand, or lean clay, which can be detrimental to foundations, concrete slabs, flatwork, and pavement. Topsoil throughout the campus is highly expansive, ranging from eight to 12% swell with an underlying material generally consisting of non-expansive to moderately expansive terrace deposits with a swell ranging from zero to 8% (LRDP FEIR Vol I page 4.5-12).

***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. The LRDP FEIR concluded that continued compliance with the CBC during implementation of the 2007 LRDP would reduce campus

impacts related to expansive soil to less than significant (LRDP FEIR Vol I 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:***
Not applicable

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

***Relevant Elements of Project:***
All wastewater generated by the proposed project would be conveyed via local sewers directly into the existing public sanitary sewer system maintained by the Irvine Ranch Water District (IRWD).

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

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
None required

***Significance Determination After LRDP EIR Mitigation Measures:***
Not applicable

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination after All Mitigation:***
Not applicable

# 6. GREENHOUSE GAS EMISSIONS

| 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) Generate greenhouse gas emissions, either directly or indirectly, that may | | | | ✓ | |

| | | | | | |
|---|---|---|---|---|---|
| have a significant impact on the environment? | | | | | |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | | | | ✔ | |

**6.a-b) Greenhouse Gas Emissions: Less Than Significant**

***Relevant Elements of Project:***

Implementation of the proposed project, like all other projects implemented under the 2007 LRDP, would increase greenhouse gas (GHG) emissions associated with the campus as a result of project construction. A greenhouse gas assessment (GHGA) was completed for the UEC (See Appendix B) to estimate the project's construction and operational related GHG emissions. The assessment notes that sources of GHG emissions during construction would include off-road construction vehicles and equipment, on-road haul trucks, and employee vehicles (Appendix B page 26). The primary source of the project's operational related GHG emissions would be generated by motor vehicles, and that other emissions would be generated from fuel combustion for space and water heating, as well as off-site GHG emissions resulting from the generation of electricity consumed by the project (Appendix B page 27). GHGs emitted from these sources would include carbon dioxide and nitrous oxide (LRDP FEIR Vol I page 5-8).

***Discussion of Potential Project Impacts:***

The GHGA prepared for the project calculated project construction and operation related emissions using the CalEEMod v. 2013.2.1 computer model. The project's total construction carbon dioxide equivalent emissions as indicated in Table 3 (Appendix B page 26) would be 795.3 metric tons per year and its 30-year project life average annual emissions (annual construction emissions averaged over the life of the project) per SCAQMD thresholds would be 26.5 metric tons per year. The project's total annual operational carbon dioxide equivalent emissions as indicated in Table 4 (Appendix B page 27) would be 704.7 metric tons per year. The project's total estimated annual emissions (annual operational emissions plus project life average construction emissions) as noted in Table 4 would be 731.2 metric tons per year, below the SCAQMD suggested significance threshold of 3,000 metric tons per year. Thus, the GHGA concluded that the project would not result in a significant impact due to GHG emissions and no mitigation measures are required (Appendix B page 27).

Although the UEC would not result in significant impacts, as stated in the Project Description, the project must comply with UC's Policy on Sustainable Practices, which the GHGA determined would further reduce emissions on the campus (Appendix B page 27). Measures from the Policy incorporated into the project would result in significant energy savings, construction waste reductions, recycled material use, and water conservation. Such features, as described in the Project Description, would include an overall energy efficiency that would exceed the standards of California Title 24 criteria by at least 20%. To achieve this goal, the project design would include building features such as high-performance glazing, insulation and radiant barrier, high reflectance roofing materials, high efficiency natural gas water heaters, low flow hot-water faucets, energy efficient lighting, Energy Control Systems, efficient exhaust fans, and high efficiency air conditioning equipment where applicable. Individual building component features will contribute to overall building annual energy savings, allowing the project to exceed the Code required minimum energy performance.

Additionally, consistent with UC Policy on Sustainable Practices, in June 2009 UCI adopted a climate action and sustainability plan entitled "Achieving Net Zero: Climate Change & Sustainability." The goals presented in the plan include the university achieving 2000 GHG emissions levels by 2014, 1990 GHG

emissions levels by 2020, and 80% below 1990 GHG emissions levels by 2050 with a commitment to achieve climate neutrality as soon as possible. This commitment goes beyond the goals of AB 32 and the Governor's Executive Order S 3 05, both of which set goals to achieve 1990 levels of GHG emissions by 2020.

Combined with all other sources of GHG emissions associated with implementation of the 2007 LRDP, the UEC would incrementally contribute to global climate change (LRDP FEIR Vol I page 5-9); however, as determined by the GHGA it would not interfere with California's ability to achieve its GHG reduction requirements (Appendix B page 27). As such, the GHGA concluded that the Project's contribution to the existing significant cumulative effects associated with global climate change would not be cumulatively considerable (Appendix B page 27). Further, the 2007 LRDP FEIR concluded that compliance with the UC Policy on Sustainable Practices and existing and future emissions reduction strategies set by the State of California would substantially lessen UCI's contribution to global climate change (LRDP FEIR Vol I page 5-12). In conclusion, the proposed UEC would result in less than significant impacts with respect to greenhouse gas emissions.

***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. 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? | | | | ✓ | |

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

***Relevant Elements of Project:***

The LRDP FEIR determined that implementation of the 2007 LRDP would involve the continued transport, use, and disposal of hazardous material (LRDP FEIR Vol I page 4.6-21). Hazardous materials and waste storage on campus complies with applicable regulations and containers are sealed at all times (when not adding or removing waste) (LRDP FEIR Vol I page 4.6-29). Temporary and short-term hazards in association with construction of the project 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. Operation of the UEC building could involve the transport, use, or disposal of regulated hazardous materials similar to those present in other buildings on the campus such as minor quantities of material related to landscaping, and general building and site maintenance.

***Discussion of Potential Project Impacts:***

UCI has an Emergency Management Plan, which addresses the campus community's planned response to various levels of human-made or natural emergencies, including the release of hazardous materials. Responsible units providing technical expertise in containment and cleanup of spill chemicals, radioactive, biological, asbestos-containing, or other regulated materials are EH&S, Orange County Fire Authority, County HAZMAT, and outside contractors. A Hazardous Materials Business Plan also addresses emergency and spill response procedures which includes, but is not limited to specific

emergency response instructions, locations of personnel and equipment resources (i.e., telephone numbers, fire extinguishers, spill kits, safety showers/eyewashes, first aid kits, etc.), and specialty hazard instructions as well as appropriate training (LRDP FEIR Vol I page 4.6-30).

The University's standard construction specifications would require that contractors working on the UEC be responsible for identification and proper removal and disposal of any unexpected soil or water contaminants encountered during grading operations. Contractors working on the campus would ensure that hazardous material and waste is handled, stored and disposed of in accordance with all applicable federal, state, and local laws and regulations. Routine construction control measures would be sufficient to avoid significant impacts. Any hazardous wastes generated by the campus would be removed from the campus by licensed transporters for treatment or disposal at licensed waste facilities (LRDP FEIR Vol I page 4.6-7).

Significant hazards due to minor applications of typical hazardous materials such as those related to building and site maintenance are considered unlikely. Operation of the UEC building would comply with all applicable federal and State laws, as well as campus programs, practices, and procedures related to the transportation, storage, and use of hazardous materials as described above and in the LRDP FEIR, which would minimize the potential for a release and providing for prompt and effective cleanup if an accidental release occurs. The LRDP FEIR determined that implementation of the 2007 LRDP would have a less than significant impact on the use, disposal, and transportation of hazardous materials to the public, as well as on the release of hazardous materials into the environment from an accident through compliance with existing regulations, programs, practices, and procedures. As the project would comply with these same regulations, programs, practices, and procedures the UEC building's impacts related to use, dispose, transportation, and accidental release of hazardous materials would be less than significant (LRDP FEIR Vol I 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:***
Not applicable

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

***Relevant Elements of Project:***
No existing or proposed schools are located within a quarter mile of the proposed project.

***Discussion of Potential Project Impacts:***
As no schools are located within a quarter mile from the project site, no impact to schools are anticipated (LRDP FEIR Vol I pages 4.6-31/32).

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

***Relevant Elements of Project:***
The 2007 LRDP FEIR concluded that no recorded hazardous materials sites are on or within the immediate vicinity of the project site. A search of the California Department of Toxic Substances Control's EnviroStor database (15 May 2014) confirmed the absence of any hazardous waste sites in the project vicinity. The closest UCI recorded hazardous materials site is located on the North Campus Corporation Yard, more than a mile north of the project site. According to the UCI Environmental Health and Safety Department, no other known hazardous material site exists on the campus (LRDP FEIR Vol I pages 4.6-32/33).

***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 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.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 three miles away to the northwest. There are no private airstrips located near the campus.

***Discussion of Potential Project Impacts:***
The Airport Land Use Commission for Orange County has established Runway Protection Zones (RPZ) for JWA, also called Accident Potential Zones (APZ), which define those surrounding areas that are more likely to be affected if an aircraft-related accident were to occur. Those zones do not extend to the vicinity of the proposed project site. Because most aircraft accidents take place on or immediately adjacent to the runway it is unlikely that aircraft operating at JWA pose a safety threat to the UCI campus. Additionally,

as reported in the 2007 LRDP FEIR, no accidents have occurred near the campus within the past 26 years. As such, it is considered unlikely that aircraft operating at JWA would pose a safety hazard to people residing or working at the proposed project site (LRDP FEIR Vol I 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:***
Not applicable

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

***Relevant Elements of Project:***
As stated above, 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 emergencies for all campus staff, students, and visitors (LRDP FEIR Vol I page 4.6-34).

***Discussion of Potential Project Impacts:***
Construction-related lane or road closures are not anticipated to be necessary to construct the project. However, if the contractor determines that a temporary road closure is necessary during the project's construction, LRDP FEIR MM Haz-6A would be implemented to ensure that sufficient notification is provided to the UCI Fire Marshal to allow coordination of local emergency services that might be affected (LRDP FEIR Vol I page 4.6-34). Operational aspects of the proposed UEC 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

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

***Relevant Elements of Project:***

Vegetation communities prone to wildfire include coastal sage scrub and grasslands. The coastal sage scrub community includes plant materials that provide heavy fuel which can ignite high intensity wildland fires and grasses are considered to be a flashy fuel which can easily ignite during dry conditions (LRDP FEIR Vol I page 4.6-35). As indicated on LRDP FEIR VI Figure 4.3-2 (LRDP FEIR VI page 4.3-5) these types of plant communities are not present on or adjacent the proposed project site.

***Discussion of Potential Project Impacts:***
As the proposed UEC site neither contains nor is adjacent to coastal sage scrub or grassland communities the project would have less than significant impacts with respect to wildland fires. Additionally, the LRDP FEIR states that because UCI is located in a developed area it is not substantially prone to the spread of these types of fires (LRDP FEIR Vol I page 4.6-8).

***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

## 8. 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? | | | | | ✓ |

***8.a) Water Quality Standards: Less Than Significant***

***Relevant Elements of Project:*** As the site is presently developed, post-construction stormwater volume is anticipated to be substantially consistent with current baseline conditions and with the inclusion of the project's stormwater management components would be expected to provide improved stormwater treatment than is occurring under baseline conditions.

As stated in the Project Description, the UEC would be constructed on an already developed building site and the site's drainage pattern, which currently flows from southwest to northeast onto Adobe Circle South would be maintained. The implementation of the proposed project would not be expected to increase significantly the rate or volume of storm water runoff leaving the site during rainfall events. Additionally, with the inclusion of the project's stormwater management components, also noted in the Project Description, the project would be expected to reduce the amount of impervious surface on the site and provide better runoff treatment than occurs under baseline conditions.

As stated in the 2007 LRDP FEIR, water quality standards for stormwater developed by the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Board (RWQCB), which would

control pollutants contained in runoff generated from campus properties, including the proposed UEC, are set forth in applicable permits (which also serve as waste discharge requirements). Stormwater permits that are applicable to UCI include the General Construction Storm Water Permit, the General Industrial Storm Water Permit, and the General Small MS4 Storm Water Permit. All of these permits control pollutants in runoff from campus properties (LRDP FEIR Vol I page 4.7-19).

***Discussion of Potential Project Impacts:***
The LRDP FEIR concluded that because UCI would continue to comply with the permits described above during implementation of the 2007 LRDP, including the project, no impact would occur with regard to violation of storm water standards or waste discharge requirements. Thus, no mitigation measures are required (LRDP FEIR Vol I page 4.7-19).

***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

**8.b) Groundwater: No Impact**

***Relevant Elements of Project:***
The proposed project would not require groundwater removal. UCI, including the proposed project, uses water supplied by the Irvine Ranch Water District (IRWD) (LRDP FEIR Vol I page 4.7-27).

***Discussion of Potential Project 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 Vol I page 4.7-27).

***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

**8.c) Erosion On/Off-Site: Project Impact Adequately Addressed in LRDP EIR**

***Relevant Elements of Project:***

As stated previously, the site for the proposed project is in an urbanized area of the campus and is already developed. The site neither contains nor is adjacent to a stream or river and the project would not substantially alter the site's existing topography, which as noted in the LRDP FEIR could otherwise result in the localized alteration of drainage patterns and erosion (LRDP FEIR Vol I page 4.7-17). Thus, implementation of the proposed project would not be expected to increase significantly the rate or volume of storm water runoff leaving the site during rainfall events. In addition, as noted in the Project Description, the site's drainage pattern would be maintained and as described in response to 8.c, with the inclusion of the project's stormwater management components the project would be expected to provide better runoff treatment than is occurring under baseline conditions.

***Discussion of Potential Project Impacts:***

As indicated in the LRDP FEIR, UCI implements Stormwater Pollution Prevention Plans (SWPPPs), which would reduce the likelihood of alterations in drainage to result in erosion and siltation on- or off-site. Implementation of appropriate BMPs, as part of compliance with construction permits for construction sites greater than one acre, would protect the quality of storm water runoff by controlling runoff and by ensuring that the quality of storm water flows meets the applicable requirements of the RWQCB. In addition, the site would be managed under the campus's Storm Water Management Plan in compliance with the Phase II regulations. Therefore, short-term impacts resulting from any alteration of the site's drainage during construction would be less than significant. (LRDP FEIR Vol I page 4.7-17)

Although the LRDP FEIR determined that construction on the campus may result in minor alterations to existing drainage patterns of individual sites within the campus, following construction, such projects would not result in substantial alterations to the drainage courses of the campus as a whole (LRDP FEIR Vol I page 4.7-17). As noted in the LRDP FEIR, projects on campus on sites that are greater than one acre could result in substantial increased runoff that could result in erosion at downstream water bodies. These impacts would be reduced however to a less than significant level through the project's implementation of LRDP FIER MM Hyd-1A (LRDP FEIR Vol I pages 4.7-18/19).

***Applicable LRDP EIR Mitigation Measures Incorporated in 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:***
Less than significant

**8.d) Flooding On/Off-Site: Project Impact Adequately Addressed in LRDP EIR**

***Relevant Elements of Project:***
As stated previously, the site for the proposed project is in an urbanized area of the campus and is already developed and neither contains nor is adjacent to a stream or river. Thus, as previously stated implementation of the proposed project would not be expected to increase significantly the rate or volume of storm water runoff leaving the site during rainfall events. In addition, as described in the Project Description, the site's drainage pattern would be maintained and the project's stormwater management components would be expected to provide better runoff treatment than is occurring under baseline conditions.

***Discussion of Potential Project Impacts:***
As indicated in the LRDP FEIR, UCI implements Stormwater Pollution Prevention Plans (SWPPPs) which would reduce the likelihood of alterations in drainage to result in flooding on- or off-site. Implementation of appropriate BMPs, as part of compliance with construction permits for construction sites greater than one acre, would protect the quality of storm water runoff by controlling runoff and by ensuring that the quality of storm water flows meets the applicable requirements of the RWQCB. In addition, the site would be managed under the campus's Storm Water Management Plan in compliance with the Phase II regulations. Therefore, short-term impacts resulting from alterations of drainage and hydrology during construction would be less than significant. (LRDP FEIR Vol I page 4.7-17).

Although the LRDP FEIR determined that construction on the campus may result in minor alterations to existing drainage patterns of individual sites within the campus, such projects would not result in substantial alterations to the drainage courses of the campus as a whole. No mitigation measures would be necessary. As noted in the LRDP FEIR, projects on campus on sites that are greater than one acre could result in substantial increased runoff that could result in flooding at downstream water bodies. These impacts would be reduced however to a less than significant level through the project's implementation of LRDP FIER MM Hyd-1A (LRDP FEIR Vol I pages 4.7-18/19).

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
Hyd-1A included in the response to item 8.c.

***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

**8.e) Drainage System Capacity/Substantial Additional Polluted Runoff: Less Than Significant Impact**

***Relevant Elements of Project:***

As stated previously, the site for the proposed project is in an urbanized area of the campus and is already developed. As noted in the Project Description, stormwater runoff from the proposed project would be conveyed to BMPs installed commensurate with project construction and consistent with UCI's Stormwater Management Program in conformance with water quality control standards established in the countywide Drainage Area Master Plan. The composition of runoff from the proposed building rooftop and ground level hardscape areas would be similar to that presently being generated on the site and from the campus as a whole.

***Discussion of Potential Project Impacts:***

As stated above, runoff from the constructed UEC building and site improvements would drain to BMPs installed commensurate with project construction. Additionally, as noted in the Project Description, post-construction stormwater volume is anticipated to be generally equivalent with current baseline conditions. With the inclusion of the project's stormwater management components the UEC would be expected to provide improved runoff treatment than is occurring under baseline conditions. Thus, no impacts would occur with respect to runoff.

***Significance Determination After LRDP EIR Mitigation Measures:***

None required

***Additional Project-Level Mitigation Measures:***

None required

***Significance Determination after All Mitigation:***

Not Applicable

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

***Relevant Elements of Project:***

As stated in the Project Description, the project would include stormwater management improvements. 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 Vol I page 4.7-10). Runoff from the approximately one acre site currently consists of overland flows during rain events, and the water quality is comprised of chemical elements present in rainwater and materials typically found in development related stormwater. With regard to general water quality impacts from storm water and other runoff, the various pollutants (e.g. sediments, nutrients, trash and debris, and pesticides) potentially generated at UCI could adversely affect water quality in a variety of ways (LRDP FEIR Vol I pages 4.7-19-21). The composition of runoff from the proposed project post-construction, as noted above in response to question 8.e, would be similar to that which currently flows from the site as it presently exists and the campus as a whole during rain and other runoff events.

***Discussion of Potential Project Impacts:***

The proposed project would potentially generate water quality impacts related to construction and post-construction conditions. Potential water quality impacts during the project's construction phases would be the same type as those evaluated in the 2007 LRDP FEIR. 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 Vol I page 4.7-21). Pollutants associated with construction activities that could result in water quality impacts include soils, debris, other materials generated during site clearing and grading, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials. These pollutants could affect water quality if they are washed off site by storm water or non-storm water, or are blown or tracked off site to areas susceptible to wash off by storm water or non-storm water (LRDP FEIR Vol I page 4.7-21). Due to the extent of construction anticipated under the 2007 LRDP, its implementation could result in significant short-term impacts to water quality from uncontrolled sediment and pollutants from construction sites. The LRDP FEIR determined for projects with sites of one acre or more, that construction related water quality impacts would be mitigated to a less than significant level by complying with a Stormwater Pollution Prevention Plan (SWPPP) prepared to satisfy the conditions of the statewide General Construction Storm Water Permit. All construction activities would be carefully managed to prevent runoff containing soil, vegetation materials and, construction wastes from leaving the site (LRDP FEIR Vol I page 4.7-22).

The LRDP FEIR indicated that the development of individual project areas with structures, concrete, asphalt, and landscaping, would reduce their erosion potential. Also, as equipment and hazardous materials associated with construction would be removed from the site, the potential for pollutants to be discharged from the site would be reduced. However, the LRDP FEIR indicated that the operation of projects such as the UEC building would generate pollutants that could still have an impact on water quality. Such impacts, the FEIR determined, would be reduced to a less than significant level through the project's implementation of LRDP FIER MM Hyd-2B (LRDP FEIR Vol I pages 4.7-18/19).

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

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

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

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

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

***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

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

***Relevant Elements of Project:***
The entire UCI campus including the project site is within Flood Zone X outside the 100-year floodplain (LRDP FEIR Vol I page 4.7-27).

***Discussion of Potential Project 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 Vol I page 4.7-27).

***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

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

***Relevant Elements of Project:***
There are no levees or dams anywhere on or near the UCI campus.

***Discussion of Potential Project 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 because of dam or levee failure would have an effect on the campus. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the FEIR was not required (LRDP FEIR Vol I page 4.7-27).

***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

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

***Relevant Elements of Project:***
A tsunami is the secondary effect of an earthquake that occurs as waves are generated in the ocean at a point near the earthquake source. Seiche, i.e. catastrophic release of water from a water body, is typically associated with land locked bodies of water or water storage facilities, none of which occurs near the campus. No major hillsides are near the project site from which mudflow conditions could occur (LRDP FEIR Vol I pages 4.7-24/25).

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

***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. 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? | | | | | ✔ |

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

***Relevant Elements of Project:***
As stated in the Project Description, the project is consistent with the 2007 LRDP. Circulation and infrastructure systems, also described in the Project Description, are in place to serve the proposed UEC; the project would not include construction or removal of streets.

***Discussion of Potential Project Impacts:***
This project would not physically affect the configuration of any surrounding sites or have any effect upon the physical structure of the campus, beyond the proposed building footprint. As such, neither

construction nor operation of the proposed project would divide an established community. Thus, no impacts would occur with respect to the division of an established community.

***Applicable LRDP EIR Mitigation 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

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

***Relevant Elements of Project:***
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 aforementioned 2007 LRDP. No 2007 LRDP policies were adopted for this area of the campus with the intent of avoiding or mitigating an environmental effect (LRDP FEIR Vol I page 4.8-15).

***Discussion of Potential Project Impacts:***
Since no 2007 LRDP policies were adopted for this area of the campus with the intent of avoiding or mitigating an environmental effect, there would be no impact.

***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) Conflict with an Applicable Conservation Plan: No Impact**

***Relevant Elements of Project:***
No Habitat Conservation Plan, Natural Community Conservation Plan, or any other land conservation plan regulates the project site.

***Discussion of Potential Project Impacts:***
Because the project site is not regulated by a habitat or conservation plan, no conflict would result.

***Applicable LRDP EIR Mitigation 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

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

***Relevant Elements of Project***
As previously noted, construction or operation of the proposed UEC building would not affect the physical framework of the campus, or land use opportunities of surrounding land.

***Discussion of Potential Project Impacts***
The proposed project, as stated in the Project Description is consistent with the 2007 LRDP, and would be compatible with other development and features in the Academic Core sector. The project would thus not create "Other Land Use Impacts."

***Applicable LRDP EIR Mitigation 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

# 10. NOISE

| Issues | (A) Potentially Significant Impact | (B) Project Impact Adequately Addressed in LRDP EIR | (C) Less Than Significant with Project-level Mitigation Incorporated | (D) Less Than Significant Impact | (E) No Impact |
|---|---|---|---|---|---|
| Would the project result in: | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| a) | Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies? | | | | ✓ | |
| b) | Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | | ✓ | | | |
| c) | A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | | | | ✓ | |
| d) | A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)? | | ✓ | | | |
| e) | For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | | ✓ |
| f) | For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | | | | | ✓ |

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

***Relevant Elements of Project:***

As stated in the Project Description, the proposed project would construct a new building for University Extension on a previously developed site. As discussed in the LRDP FEIR, the California Department of Health Services (CDHS) developed guidelines for community noise acceptability for use by local agencies (LRDP FEIR Vol I page 4.9-20). LRDP FEIR Table 4.9-1 provides the noise level ranges developed by the CDHS for various land use categories. As an office/professional building with classroom space, the table indicates that the normally acceptable noise standard limit for the project would be 70dBA CNEL, defined as satisfactory for the specified land use, assuming that conventional construction methods are used. The conditionally acceptable noise limit would be approximately 70dBA CNEL, assuming conventional construction also but with either closed windows and fresh air supply or air conditioning (LRDP FEIR Vol I page 4.9-7). UCI complies with CCR Title 24 pertaining to noise standards (LRDP FEIR Vol I page 4.9-20). Containing classrooms the proposed building would be considered by the LRDP FEIR to be a sensitive receptor (LRDP FEIR Vol I page 4.9-4). The LRDP FEIR states that vehicular traffic noise would be the primary noise source to affect implementation of the LRDP (LRDP FEIR Vol I page 4.9-24).

***Discussion of Potential Project Impacts:***

Projects that implement the LRDP and result in an exposure of persons to, or generation of, noise levels in excess of the levels in Table 4.9-1 (described above) would have a significant noise impact. Table 4.9-4 in the 2007 LRDP FEIR provides the existing and projected noise levels for all the study area roadway intersections associated with implementation of the LRDP. The levels were initially measured at a distance of 50 feet from the centerline of each roadway segment and were subsequently used to determine the distances to the 60, 65, 70, and 75 dBA CNEL noise contours. As indicated in Table 4.9-4, the existing noise contour 50 feet from the centerline of East Peltason Dr., the applicable adjacent roadway, is 66 dBA CNEL and in the future with LRDP implementation is estimated to be 67 dBA CNEL, a 1 dBA increase. The future traffic related 67dBA CNEL noise contours are projected to be less than 30 feet from East Peltason Dr. (LRDP FEIR Vol I pages 4.9-16/17). The LRDP FEIR determined that an increase of less than 3 dBA is not perceptible by the average human ear. Thus, the project would not subject the future occupants of the building to noise levels above accepted standards and would have less than significant impacts with respect to the exposure of persons to or generation of noise levels in excess of standards.

***Applicable LRDP EIR Mitigation Measures Incorporated In The Project:***
None required

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination After All Mitigation:***
Not applicable

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

***Relevant Elements of Project:***
As stated in the Project Description, the proposed project would construct a new building on an already developed site. Construction of the proposed project may require the use of demolition equipment such as jackhammers and excavation equipment; however, pile driving as noted in the Project Description would not be necessary. Operation of the proposed UEC would not be anticipated to include activities that would generate groundborne noises or vibrations. The segment of Campus Drive, which is in the general project vicinity, is not a designated truck route in the city of Irvine.

***Discussion of Potential Project Impacts:***
Operation of the proposed UEC would not be expected to produce groundborne vibrations or groundborne noise levels. As Campus Drive, between University Drive and Culver Drive, is not a designated truck route within the City of Irvine it would not be expected to produce any significant groundborne vibration, which would affect the project. Due to the project's proximity to student residence buildings in Verano Place, LRDP MM Noi-2a(iii) would be implemented during construction.

***Applicable LRDP EIR Mitigation Measures Incorporated In The Project:***
Noi-2A(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.

***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

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

***Relevant Elements of Project:***
As stated previously, the proposed project would construct a new building on an already developed site. Existing ambient noise sources in the immediate vicinity of the project site include vehicular traffic along East Peltason Dr. as well as those associated with Verano Place student housing and Adobe Circle Dr. As stated in Section 10.a, the 2007 LRDP FEIR indicated that permanent noise sources could be divided into vehicular and stationary sources, and from increased human activity related to the LRDP's implementation. Projects that implement the LRDP and result in a permanent increase of 3dBA or more in ambient noise levels at sensitive receptors would have a significant impact (2007 LRDP FEIR Vol I pages 4.9-24/25).

***Discussion of Potential Project Impacts:***
As the project is consistent with the LRDP, it would not result in traffic volumes higher than analyzed in the LRDP FEIR and therefore would not result in significant permanent effects involving traffic noise along adjacent roadways. Additionally, due to the relatively small volume of traffic expected to be associated with the operation of the project, related traffic noise is not expected to result in substantial permanent increase in ambient noise levels in the project vicinity (See Section 6 Transportation/Traffic). Deliveries to and/or pickups from the proposed UEC building and maintenance of the building may result in a minimal increase in daily ambient noise levels but would be considered less than significant. Noise associated with indoor activities and those associated with the operation of the proposed building would not typically result in significant impacts to neighboring residence buildings in Verano Place. These noises, which currently occur on and around the site, would generally be of short duration and have a minor and insignificant effect upon the local noise environment. Noise generated by rooftop mechanical equipment (air conditioning/heating) would not be audible beyond the project site, with typical sound attenuation features to be included in the project design. Once completed, the UEC would not be expected to represent a noticeable substantial permanent increase of noise levels in the project vicinity and ambient noise levels would be typical of conditions throughout east campus. Impacts are considered less than significant and no mitigation measures would be required. As noted in the Project Description and identified on Exhibit 4, construction of the project would include an acoustic treatment to minimize the impact of noise generated by the building's use on Verano Place. Additionally, the project would act as a buffer between the Verano Place housing complex and road noise generated by East Peltason Drive. Impacts are considered less than significant and no mitigation measures would be required.

***Applicable LRDP EIR Mitigation 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

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

***Relevant Elements of Project:***
Project construction, as stated in the LRDP FEIR (Vol I page 4.9-31) would be projected to require conventional construction techniques and standard equipment such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous trucks. Specialized construction activities that generate unusually loud and repetitive noise such as pile driving would not be required to complete the project. 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. Construction related truck traffic would also comply with the City of Irvine's Designated and Restricted Truck Routes.

***Discussion of Potential Project Impacts:***
As indicated in the LRDP FEIR, the project would generate noise that could expose nearby receptors to elevated noise levels during its approximately 23-month construction period. The magnitude of the impact would depend on the type and duration of the activity, type of construction equipment used, distance between the noise source and receiver, and intervening structures, topography, and barriers. Noise generated by the types of construction equipment listed above would range from 60 to 90dBA at 50 feet from the source and propagates as a point source that decays at a rate of 6dBA per doubling of distance from the source (assuming no ground interaction). Thus, project construction activities would be expected to be audible in the immediate area (LRDP FEIR Vol I page 4.9-32).

Because conventional construction equipment is powered for the most part by internal combustion engines, most already equipped with proper tuning and standard muffling devices, it is not practical to require specific noise limits on construction activities. Instead, UCI, like most cities and counties, restricts construction activities to daylight hours when the noise is considered least intrusive. LRDP FEIR MM Noi-2A, listed below, would limit construction operations to daytime hours, require proper equipment maintenance and muffling devices, and place restrictions on weekend construction activities. This standard construction specification would reduce temporary noise impacts from construction activities to below a level of significance (LRDP FEIR Vol I pages 4.9-32/33).

***Applicable LRDP EIR Mitigation Measures Incorporated In The 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 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.

***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

**10.e) Public Airport Noise: No Impact**

***Relevant Elements of Project:***
The proposed project site is located approximately 2.5 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 60dB CNEL Noise Contour.

***Discussion of Potential Project Impacts:***
As discussed in Section 4.9.3.3 of the 2007 LRDP FEIR (Vol I page 4.9-33), 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 and no impact would occur.

***Applicable LRDP EIR Mitigation 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

**10.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 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

# 11. 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? | | | | ✔ | |

| | (A) | (B) | (C) | (D) | (E) |
|---|---|---|---|---|---|
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | | | | ✓ | |

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

***Relevant Elements of Project:***

As stated in the Project Description, the UEC will serve 48 new employees and up to 490 new IP students. The project does not include home construction, either on or off campus. Circulation and utility infrastructure systems, as described in the Project Description, are in place to serve the project. The project would not result in the extension of infrastructure beyond the project site.

***Discussion of Potential Project Impacts:***

The project's contribution to directly or indirectly inducing substantial population growth which would adversely impact the environment would be less than significant. The 2007 LRDP FEIR (Vol 1 page 4.10-10) determined that the impact of full LRDP implementation on Population and Housing would be less than significant because UCI's growth accounts for only a small proportion of planned regional growth (approximately 0.4%) and Orange County growth (approximately 1.8%), therefore the LRDP FEIR concluded that LRDP implementation would not induce substantial population growth. Implementation of the UEC project is consistent with this analysis and conclusion as the 48 new employees served by the project are within the totals foreseen in the LRDP and LRDP contribution to planned growth would remain at 0.4 % of regional growth and 1.8% of County growth including the 490 IP students served by the project, a contribution level that the LRDP EIR determined was not substantial.

UCI does not provide utility service to off-campus areas; therefore, utility extensions and expansions serving the project would not lead to urban growth outside the boundary of the campus. No substantial changes to off-campus utilities provided to UCI by other entities are anticipated to be necessary to complete the project (LRDP FEIR Vol I 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:***

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-c) Replacement Housing: Less than Significant Impact**

***Relevant Elements of Project:***

As stated in the Project Description, the proposed project includes development of a classroom building on the UCI campus and would not involve the displacement of existing housing. The project would serve

48 new employees and 490 new UNEX IP students who may increase demand for off-campus housing.

***Discussion of Potential Project Impacts:***

The project would not result in the displacement of existing housing or substantial numbers of people from existing housing that would require the development of additional off-campus housing that could result in environmental impacts. The LRDP FEIR (Vol 1 page 4.10-15) determined that implementation of the LRDP would not displace substantial numbers of people from existing housing because of the significant number of affordable on-campus housing units provided in the LRDP to serve campus students and employees. Consistent with the LRDP, UCI has implemented significant on-campus housing facilities resulting in approximately 13,165 student beds and 1,306 faculty staff dwelling units completed or currently under construction (to be completed prior to UEC occupancy). The LRDP accommodates an additional 4,472 student beds, 395 faculty/staff dwelling units, and 435 north campus dwelling units to serve future on-campus housing needs.

Implementation of the proposed UEC project is consistent with the analysis and conclusions in the FEIR as the demand for off-campus housing resulting from this project is not substantial in light of the significant LRDP on-campus housing program provided to offset demand for off-campus housing. The 48 full time employees resulting from this project are within the employee projections in the LRDP and the UNEX IP student population served by the project (490 new students) would result in a less than substantial increase in off-campus housing demand. It is estimated (based on existing practices) that 60% of UNEX IP students would live in existing off-campus households through private home-stay programs or by living with family during their stay. An additional 20% of students would live in UNEX-provided off-campus apartments (25 apartment units at the current student-to-apartment ratio of 4:1) and the remaining 20% would secure other off-campus housing arrangements for their stay (25 apartments). This would result in demand for approximately 50 off-campus apartments (1.5% of existing on-campus student beds) which does not represent a substantial change in the percentage of on-campus to off-campus housing supply needed to serve the LRDP as described and analyzed in the FEIR.

***Applicable LRDP EIR Mitigation 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

# 12. 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? | | | | | ✔ |

**12.a) Fire Protection: Less Than Significant Impact**

***Relevant Elements of Project:***

As noted in the Project Description, the proposed project would construct a classroom building. The Orange County Fire Authority (OCFA) would provide fire protection services for the project as with the entire UCI campus. OCFA0 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, built in 1966 has a capacity for service of approximately 3,500 calls per year (LRDP FEIR Vol I pages 4.11-6). UCI also employs a Fire Marshal whom is responsible for the campus' fire prevention practices and provides services such as plan review and construction inspections to ensure adequate fire access, as well as fire prevention, for each new project in accordance with California building and fire codes. (LRDP FEIR Vol I pages 4.11-7).

***Discussion of Potential Project Impacts:***

The LRDP FEIR concluded that no new fire stations or expansion of Fire Station #4 would be needed to maintain adequate levels of service to the main campus to serve LRDP development. The project is consistent with the 2007 LRDP and long-term demand for fire department services would be within the levels projected in the LRDP FEIR. The LRDP FEIR concluded that Station #4 would accommodate the increased demand for fire protection services on the UCI main campus, and that implementation of the 2007 LRDP is not anticipated to increase the station's demand to a level requiring new facilities or substantial alterations to existing facilities that would result in adverse impacts on the physical environment (LRDP FEIR Vol I pages 4.11-6). Additionally, as the proposed UEC is consistent with the 2007 LRDP, the project would not be anticipated to result in a substantial increase in calls for fire protection service.

Further, as noted above the Fire Marshal would review the UEC and as discussed in Section 6 UCI has an Emergency Management Plan, which addresses campus emergency response, including fire, and emergency access on the campus. These actions, mandated by state and federal law, would limit the number of incidents requiring the OCFA to respond to on-campus calls. The control of on-campus demand for fire services would reduce the need for new off-campus fire facilities or expansions of existing facilities (LRDP FEIR Vol I page 4.11-7). Thus, the project would not result in any substantial adverse physical impact as a result of increased demand for fire protection services that results in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts.

***Applicable LRDP EIR Mitigation 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

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

***Relevant Elements of Project:***
As noted in the Project Description, the proposed project would construct a classroom building; therefore, the building would not be anticipated to represent a unique land use that would attract or stimulate criminal activities and would not require new police protection services or facilities. The UCI Police Department, which is housed in the UCI Public Services Building, located on East Peltason Drive provides all police services (patrol, investigation, crime prevention education, and related law enforcement duties) for the campus and was renovated prior to adoption of the 2007 LRDP. The LRDP FEIR indicated that the Department provides an acceptable level of service of one officer per 1,000 persons in the population (LRDP FEIR Vol I page 4.11-3).

***Discussion of Potential Project Impacts:***
The LRDP FEIR determined that demands on police protection services for UCI are likely to increase with campus population growth and that some expansion or renovation of existing facilities or construction of new facilities may be required to maintain adequate service levels (LRDP FEIR Vol I page 4.11-8). As the proposed UEC is consistent with the 2007 LRDP, it would not be anticipated to result in a substantial increase in calls for police protection service, which would require construction of new facilities, the construction of which could cause significant environmental impacts. Further, no significant impacts associated with additional police facilities were anticipated in the LRDP FEIR (LRDP FEIR Vol I page 4.11-9).

***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

***12.c) Schools: Less Than Significant Impact***
***Relevant Elements of Project:***
As stated in the Project Description, the UEC building would accommodate the hiring of approximately 48 employees. It is not known whether these future staff would include heads of households with school-age children that would attend Irvine Unified School District (IUSD) schools. To the extent that the future staff positions do attract such new households to the area, there could be increased enrollment within IUSD elementary, middle, and high schools, indirectly attributed to the proposed project.

***Discussion of Potential Project Impacts:***
The LRDP FEIR indicates that although school-age children of new UCI staff may create additional demands for public school seating capacity, it is unlikely that any additional enrollment attributed to the 2007 LRDP would result in the need for new facilities or substantial alterations that would result in adverse physical impacts. In addition, the majority of the campus population including staff would live in new or existing homes in a variety of off-campus locations in Orange and Los Angeles Counties. These homes would be served by school districts, which provide school service that has already been accounted for in the development and operation of schools serving those communities. Hence, the demand for schools would follow the demand for housing, rather than increased UCI population. Thus, the 2007 LRDP, including the project, was determined to have a less than significant impact on schools and no mitigation is required (LRDP FEIR Vol I pages 4.11-10-11).

***Applicable LRDP EIR Mitigation 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

***12.d) Parks: Less Than Significant***
***Relevant Elements of Project***
As noted in the Project Description, the proposed project would build a classroom building. Recreation facilities are readily available on campus and include Aldrich Park, the Crawford Athletics Complex, the Anteater Recreation Center (ARC), and extensive bike and pedestrian trails. Additionally, there are several city and county parks in the vicinity of the campus, including a regional park, two community parks, and several neighborhood parks (LRDP FEIR Vol I page 4.12-3).

***Discussion of Potential Project Impacts***

As the proposed UEC would provide new space for an existing campus use it would not be anticipated to result in a substantial increase in demand for parks, either on or off campus, which would require construction of new facilities, the construction of which could cause significant environmental impacts. The approximately nine new campus staff anticipated to be hired to work in the UEC would not exceed the amount foreseen by the 2007 LRDP and not represent the type of population increase likely to trigger demand for new parks either on or off campus. Further, the 2007 LRDP FEIR determined that because UCI offers numerous recreational opportunities, there would be no requirement to construct or expand off-campus recreational facilities (LRDP FEIR Vol I page 4.12-6).

***Applicable LRDP EIR Mitigation 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

***12.e) Other Public Facilities: No Impact***
***Relevant Elements of Project:***
There are no public facilities proposed within the UEC.

***Discussion of Potential Project Impacts:***
As stated previously, the proposed project would construct a classroom building and would not require physical alterations to any other UCI campus facilities or have an effect upon governmental facilities off campus. Thus, the project would not result in any substantial adverse physical impact because of increased demand for other public facilities services that result in the need for new or physically altered public facilities, the construction of which could cause significant 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.f) Create Other Public Service Impacts: No Impact**
***Relevant Elements of Project:***
As stated previously, the proposed project would construct a classroom building .

***Discussion of Potential Project Impacts:***
The proposed UEC is consistent with the land use policies contained in the 2007 LRDP and would not generate any unique demands for other 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

# 13. 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? | | | | | ✓ |

**13.a) Physically Deteriorate Existing Facilities: Less Than Significant**

***Relevant Elements of Project:***

As stated previously, the proposed project would construct a classroom building. Recreation facilities are readily available on campus and include Aldrich Park, the Crawford Athletics Complex, and the ARC. Off-campus recreation opportunities include numerous city, county, and state parks, and private health clubs located in the campus vicinity (LRDP FEIR Vol I page 4.12-3).

***Discussion of Potential Project Impacts:***

Although the proposed project would provide space for approximately 48 new staff it would not result in an increase of the overall campus employee population foreseen by the 2007 LRDP, nor trigger demand for new recreational facilities either on or off campus. The LRDP FEIR determined that implementation of the 2007 LRDP would not result in substantial deterioration of on-campus recreational facilities and that the use of off-campus recreation facilities as a result of UCI's on-campus population increase in association with implementation of the 2007 LRDP, would be limited, based on the availability of the on-campus facilities. Thus, the LRDP FEIR concluded that implementation of the 2007 LRDP would is anticipated to have a less than significant impact related to the physical deterioration of parks and other recreational facilities (LRDP FEIR Vol I pages 4.12-5/6).

***Applicable LRDP EIR Mitigation 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

**13.b) Construction of Recreational Facilities: No Impact**

***Relevant Elements of Project:***
The proposed project does not include construction of recreation facilities.

***Discussion of Potential Project Impacts:***
As the proposed UEC would provide new space for an existing campus use, it would not be anticipated to result in a substantial increase in demand for parks, either on or off campus, which would require construction of new facilities, the construction of which could cause significant environmental impacts. Also as discussed previously, the 48 new campus staff members hired to work in the UEC building would not generate demand for new recreational facilities, either on or off campus. Further, the LRDP FEIR concluded that because UCI offers its staff numerous recreational opportunities; there would be no requirement to construct or expand off-campus recreational facilities in association with implementation of the 2007 LRDP (LRDP FEIR Vol I pages 4.12-6-7).

***Applicable LRDP EIR Mitigation Measures Incorporated In The Project:***
None mitigation measures are required

***Significance Determination After LRDP EIR Mitigation Measures:***
Not applicable

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination After All Mitigation:***
Not applicable

# 14. TRANSPORTATION/TRAFFIC

| Issues | (A) Potentially Significant Impact | (B) Project Impact Adequately Addressed in LRDP EIR | (C) Less Than Significant with Project-level Mitigation Incorporated | (D) Less Than Significant Impact | (E) No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, | | ✓ | | | |

| | | | | | |
|---|---|---|---|---|---|
| streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | | | | | |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | | | | | ✓ |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks? | | | | | ✓ |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | | | ✓ |
| e) Result in inadequate emergency access? | | | | | ✓ |
| f) Conflict with adopted policies plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | | | | | ✓ |

**14.a) Conflict with Effectiveness Measures: Project Impact Adequately Addressed in LRDP EIR**

***Relevant Elements of Project:***

As stated in the Project Description, the proposed project would construct the UEC Building on a site served by nearby transit facilities and the project would include a pedestrian and bicycle bridge linking the project to the campus and regional pedestrian and bike trail systems. Also as noted in the Project Description, the primary users of the building are international students that rely on transit, bike or pedestrian routes to access the project as they do not have private vehicles. Additionally, the UEC would be anticipated to require the hiring of approximately 48 new staff members. As a result, the project would not be anticipated to create a significant increase in vehicular traffic on the campus and surrounding transportation network. Construction of the project, also as noted in the Project Description, would not require an encroachment permit from the California Department of Transportation.

***Discussion of Potential Project Impacts:***

A traffic evaluation was prepared for this Initial Study (Appendix C) to analyze the proposed UEC's impact on the campus and surrounding transportation network under project build-out conditions. Consistent with the traffic study prepared for the 2007 LRDP (the applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system), the evaluation derived its data from the UCI Main Campus Traffic Model (MCTM) and the Irvine Transportation Analysis Model (ITAM). The MCTM is based upon the future campus land use identified in the 2007 LRDP, and is used for evaluating the project's potential impact to and for forecasting future traffic volumes on the campus roadway system. The ITAM is the principal tool used for transportation planning in the City of Irvine and was used in reference to off campus portions of the circulation network included in the LRDP traffic study (i.e., general distribution on surrounding roadways for project trip assignment purposes) (LRDP FEIR Vol I page 4.13-27).

The project traffic evaluation indicates that the proposed UEC will generate very few additional vehicle trips to the campus related to the UEC building operations.; approximately 184 average daily trips (ADT) of which 16 and 18 (approximately nine and ten percent of the ADT) will be in the AM and PM peak hours, respectively. The evaluation concluded that when combined with UCI's overall trip generation these trips would not be anticipated to be noticeable on the campus or surrounding transportation network. Because the proposed UEC's anticipated incremental trip increase is minimal, the intersection and roadway data presented in the LRDP FEIR traffic analysis as well as current traffic conditions would be generally unaffected. The need for a full traffic analysis, as noted in the project traffic evaluation, is not justified. Long range vehicle traffic resulting from the proposed UEC project, which is consistent with the 2007 LRDP, would be in conformance with the traffic report prepared for the 2007 LRDP FEIR and the analysis completed for this Initial Study has not identified any new impacts not anticipated in the LRDP FEIR related to an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system on or off campus. Thus, the proposed UEC project would not result in significant impacts to the on campus or surrounding transportation circulation network. UCI will continue to implement a range of measures in association with the LRDP to reduce vehicle trips and resulting impacts, and will monitor campus trip generation and distribution, and the performance of UCI Transportation Program intersections in relation to enrollment growth. In the event construction of the UEC should require a road closure, LRDP FEIR MM Tra-1J would be implemented.

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

***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

**14.b) Congestion Management: No 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 2.0 miles and 2.7 miles from the project site. CMP monitoring is conducted at the intersections of Jamboree Road/I-405 northbound and southbound ramps, and at Jamboree Road/ MacArthur Boulevard (LRDP FEIR Vol I page 4.13-23).

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

***Applicable LRDP EIR Mitigation Measures Incorporated in Project:***
None required

***Significance Determination After LRDP EIR Mitigation Measures:***
Not applicable

***Additional Project-Level Mitigation Measures:***
None required

***Significance Determination after All Mitigation:***
Not applicable

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

***Relevant Elements of Project:***
As stated previously, the proposed project site is located approximately 3 miles southwest 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 Vol II page 25).

***Discussion of Potential Project Impacts:***
Implementation of the 2007 LRDP was determined not to have an effect on existing air traffic patterns or volumes and the issue was adequately addressed in the IS for the LRDP (LRDP FEIR Vol I page 4.13-61).

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

***Relevant Elements of Project:***
As stated in the Project Description, the proposed building would be constructed on an already developed site in an urbanized area of the campus and vehicular access would occur via Adobe Circle South. The project would not construct a new roadway on the campus.

***Discussion of Potential Project Impacts:***

The IS for the 2007 LRDP indicated that design features associated with LRDP implementation projects would be compatible with existing campus transportation plans and adjacent land uses. Thus, the LRDP FEIR determined that no impacts would occur from hazards due to design features or incompatible uses and the issue was adequately addressed in the IS for the LRDP (LRDP FEIR Vol I page 4.13-61).

***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) Inadequate Emergency Access: No Impact**

***Relevant Elements of Project:***
As noted in the Project Description, construction of the UEC would provide emergency vehicle access and vehicle loading/unloading to serve the new building.

***Discussion of Potential Project Impacts:***
Development associated with implementation of the 2007 LRDP, including the proposed project, is subject to review by the UCI Fire Marshal to ensure that adequate emergency access is incorporated (LRDP FEIR Vol I page 4.13-61). The IS for the LRDP indicated that with review of the proposed project by the UCI Fire Marshal, no impacts related to emergency access would occur (LRDP FEIR Vol I page 4.13-61).

***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) Public Transit, Bicycle, or Pedestrian Facilities: No Impact**

***Relevant Elements of Project:***
UCI implements a broad range of infrastructure to promote bicycle travel to and within the campus, including a network of existing and planned on-street bikeways, off-street trails, grade separated crossings, and bicycle parking facilities. Existing and proposed campus bike and pedestrian trails are depicted in the 2007 LRDP on Figures 5-5 (page 74), 5-6 (page 76), and 5.7 (page 77). The proposed project, as noted in the Project Description, would provide elements supporting alternative transportation

including a pedestrian and bike bridge serving the project site.

***Discussion of Potential Project Impacts:***
UCI administers an extensive program of Transportation Demand Management (TDM) measures that encourage the use of alternate modes of transportation, including walking, bicycling, and riding the UCI shuttle, other local shuttle systems, train, or bus. As the project would also provide elements supporting alternative transportation, no impacts related to conflicts with alternative transportation 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

## 15. 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 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? | | | | ✓ | |

**15.a) RWQCB Wastewater Treatment Requirements: Less than Significant Impact**

***Relevant Elements of Project:***

As noted in Section 5, wastewater from the proposed project would be conveyed to the Irvine Ranch Water District (IRWD) wastewater system and treated at the Michelson Water Reclamation Plant (MWRP). In accordance with the wastewater treatment standards enforced by the Santa Ana Regional Water Quality Control Board, MWRP provides a tertiary level of treatment, (LRDP FEIR Vol I page 4.14-1).

***Discussion of Potential Project Impacts:***

The character of wastewater flows from the proposed project would be the same as those currently generated from the campus as a whole. No new types of wastewater collection or treatment systems or processes would be required to dispose of this project's wastewater. As stated in the LRDP FEIR, UCI would comply with the IRWD's Industrial User Discharge Permit regulations regarding sewage generation quantities and constituents; therefore, the project would not result in a significant impact with regard to wastewater treatment requirements administered by the Regional Water Quality Control Board, no mitigation measures are required (LRDP FEIR Vol I pages 4.14-12/13).

***Applicable LRDP EIR Mitigation 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

**15.b) Construction and/or Expansion of Treatment Facilities: Less Than Significant Impact**

***Relevant Elements of Project:***

As stated in the Project Description, utility infrastructure is available in the site vicinity to serve the project. Wastewater treatment and infrastructure are provided as described above in 15.a. Potable water is distributed to the campus from IRWD's transmission system through 8-, 10- and 12-inch water mains to UCI's distribution system and is served by five metered connections. The distribution system consists of two primary pressure zones, IRWD Zones I and III. The proposed project is located within the Zone III

system which is served by three 10-inch metered connections (LRDP FEIR Vol I page 4.14-3).

***Discussion of Potential Project Impacts:***
As stated in the Project Description, the proposed project is consistent with the 2007 LRDP development program; therefore, demand for water and wastewater would be within existing campus planning projections. The project would not require the construction or expansion of new mainline water or wastewater facilities that would result in significant environmental effects. Connections to the existing infrastructure in the site vicinity would result in minor, short-term less than significant impacts that would occur as part of the project's general site development, no mitigation measures are required.

***Applicable LRDP EIR Mitigation 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

**15.c) Stormwater Drainage Facilities: Less Than Significant**

***Relevant Elements of Project:***
As noted in the Project Description, the proposed project site is located in an urbanized area of the campus and is already developed; stormwater generated by the completed project would be collected on site and conveyed to natural treatment management system(s) and/or in-line structural stormwater filtration or BMPs. With the inclusion of the project's stormwater management components, also noted in the Project Description, the project would be expected to provide improved runoff treatment than occurs under baseline conditions. The project would not require the construction of new or expansion of existing stormwater drainage facilities in other areas of the campus.

***Discussion of Potential Project Impacts:***
Construction of the project's stormwater collection and treatment BMPs, described above, would occur concurrently with the overall project construction program; any potential impacts related to their construction would be minimized through the UEC's implementation of mitigation measures described in other sections of this IS/MND such as Air-2B, Cul-4A-C, Hyd-1A, and Hyd-2B (LRDP FEIR Vol I page 4.14-16). Thus, impacts associated with the project's construction of these treatment devices and BMPs would be less than significant and no specific mitigation measures related to stormwater drainage facilities are required.

***Applicable LRDP EIR Mitigation Measures Incorporated In The Project:***
None required

***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

**15.d) Water Supplies: Less than Significant Impact**

***Relevant Elements of Project:***
As stated previously, the proposed project would construct a classroom building on a previously developed area of campus. Potable and reclaimed water on the UCI campus is provided by the IRWD. As noted in the LRDP FEIR, UCI's 2006 average daily domestic water demand was 1.8 million gallons per day (mgd), which is projected to increase to 4.9 mgd with full implementation of the 2007 LRDP. Similarly, UCI's reclaimed water demand, which was 0.6 mgd in 2006, is projected to increase to 1.2 mgd (LRDP FEIR Vol I page 4.14-17-18).

***Discussion of Potential Project Impacts:***
The IRWD has developed an Urban Water Management Plan, which projects district-wide water supply availability and demand through 2030. IRWD staff in consultation with UCI reviewed projected water service demand related to implementation of the 2007 LRDP for consistency with the UWMP and concluded that water supply reliability would not be compromised. The LRDP FEIR determined that sufficient water supplies are available to serve the implementation of the 2007 LRDP (LRDP FEIR Vol I pages 4.14-17-18). As the proposed UEC would provide new space for an existing campus use ar consistent with the 2007 LRDP, it would not be anticipated to have a substantial effect on the campus' water demand. Additionally, the 48 new staff and faculty anticipated to be hired to work in the UEC building would not exceed the amount foreseen by the 2007 LRDP nor represent the type of population increase likely to trigger demand for increased entitlements. In addition, the 490 additional UNEX IP students served by this facility would not trigger the demand for increased entitlements. Thus, the proposed project would have less than significant impacts with respect to water supplies and no mitigation measures are required.

***Applicable LRDP EIR Mitigation 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

**15.e) Wastewater Capacity: Less than Significant Impact**

***Relevant Elements of Project:***
As stated previously, the proposed project would construct a classroom building on a previously developed area of campus. As noted in the Project Description, the UEC would connect to existing sewer lines, which convey wastewater for treatment at the MWRP operated by the IRWD.

***Discussion of Potential Project Impacts:***

As the proposed UEC would provide new space for an existing campus use consistent with the 2007 LRDP, it would not be anticipated to have a substantial effect on the campus' demand for wastewater treatment. Additionally, any future campus staff hired to work in the UEC would not exceed the amount foreseen by the 2007 LRDP nor represent the type of population increase likely to trigger demand for increased treatment capacity. In addition, the 490 UNEX IP students served by the UEC are unlikely to trigger the demand for increased treatment capacity. Thus, the proposed project would have less than significant impacts with respect to wastewater treatment capacity. Further, the 2007 LRDP FEIR determined that the impact to wastewater treatment capacity from implementation of the 2007 LRDP would be less than significant (LRDP FEIR Vol I page 4.14-13).

***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

**15.f) Landfill Capacity: Less than Significant Impact**

***Relevant Elements of Project:***
As stated previously, the proposed project would construct a classroom building on a previously developed area of campus. Non-hazardous solid waste to be generated by the UEC and throughout the campus is disposed of off-site at the County of Orange Frank R. Bowerman (FRB) Landfill, the primary disposal site for solid waste in the City of Irvine. As noted in the 2007 LRDP FEIR, the 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 (LRDP FEIR Vol I page 4.14-18).

***Discussion of Potential Project Impacts:***
This project's construction program would recycle more than 50% of all construction waste consistent with University policy requires the implementation of a comprehensive program of solid waste reduction and diversion measures including adherence to US Green Building Council LEED "Silver" or equivalent level of Green Building Certification for all new building construction. Additionally, consistent with UC Policy on Sustainable Practices and UCI recycling goals, UCI has achieved a solid waste landfill diversion rate of 83% (percentage of solid waste that is diverted from landfills through recycling, reuse, and other waste recovery programs). As the proposed UEC would provide new space for an existing campus use and the facility and operations will comply with UCI's exemplary waste reductions programs, its operation would not be anticipated to substantially result in a significant increase of the campus' solid waste. The LRDP FEIR determined that implementation of the 2007 LRDP would not require mitigation measures related to landfill capacity because the FRB landfill would accommodate an increase in waste generation as a result of implementation of the 2007 LRDP and UCI's participation in waste diversion and recycling programs (LRDP FEIR Vol I page 4.14-18). Thus, the proposed project would have less than significant impact with respect to solid waste disposal and no mitigation measures are required.

***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

**15.g) Solid Waste Regulations: Less than Significant Impact**

***Relevant Elements of Project:***
The proposed project building would generate the same types of solid wastes as those generated by the existing buildings occupied by UNEX. The proposed project would include centralized containers for trash and recyclable materials collection. 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 4.14.1.3 of the LRDP FEIR, has been adopted requiring campuses to undertake aggressive programs to reduce solid waste generation and disposal. In adherence to this UC policy and other campus sustainability goals, UCI implements a campus-wide comprehensive waste prevention and recycling program, which works in collaboration with multiple campus entities to promote and implement recycling (LRDP FEIR Vol I page 4.14-19).

***Discussion of Potential Project Impacts:***
The project would not require any unique waste collection or disposal methods or facilities and would not conflict with or obstruct any federal, state or local programs to reduce solid waste generation and otherwise manage wastes; no impacts would occur. As UCI will continue to implement, promote and improve the campus-wide comprehensive waste prevention and recycling program and the UC PSP with implementation of the 2007 LRDP, the LRDP FEIR concluded that development under the 2007 LRDP would not result in UCI's failing to comply with relevant statutes and regulations regarding solid waste, no mitigation measures were deemed necessary related to solid waste regulations (LRDP FEIR Vol I pages 4.14-20/21). Thus, the project would have a less than significant impact with respect to solid waste regulations and no mitigation measures are required.

***Applicable LRDP EIR Mitigation 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

# 16. 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): | | | | | |
| 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? | | | | ✔ | |

**16.a) Degrade The Environment, Reduce Habitat/Wildlife Populations, Eliminate Examples Of California History: Less Than Significant Impact**

The project site, as previously described is in an urbanized area of the campus and is already developed with the Parking Lot 17A and does not contain sensitive biological resources, habitat, or species. No significant environmental impacts of any kind have been identified in the responses to questions regarding project effects organized under the preceding 15 topics. There are no historic resources on the site and as stated in response to 4.b less than significant impacts would occur with respect to archaeological resources.

**16.b) Disadvantage Of Long-Term Environmental Goals: No Impact**

The proposed project involves the construction of a new classroom building in accordance with the land use policies established by the 2007 LRDP. It would help UCI in further accomplishing its goal of teaching and public service mission and support the University's sustainability policies through incorporation of numerous green building elements to reduce energy consumption, greenhouse gas emissions, and water demand.

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

Long-term environmental consequences resulting from the cumulative effect of completing campus development through implementation of the 2007 LRDP were thoroughly evaluated in the 2007 LRDP FEIR. As discussed in the Project Description, the project is consistent with the LRDP's land use policies. No new or more severe impacts not anticipated in the 2007 LRDP FEIR have been identified as a result of the analysis completed for this Initial Study. All project level impacts have been determined to be less than significant or mitigated to a level considered less than significant. The project would not result in cumulatively considerable impacts.

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

No other development or capital projects are currently planned within this area of the campus during the next approximately two years while this project is under construction. The proposed project would not result in any significant impact that cannot be mitigated to level that is less than significant. The analysis in this IS/MND has determined that the proposed project would have no impacts that are individually limited but that are nonetheless cumulatively considerable, that were not adequately addressed in the LRDP FEIR.

**16.d) Direct/Indirect Effects On Humans: Less Than Significant Impact**

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

wastes. Access by emergency vehicles would be maintained throughout the construction phases and the developed site would not constrain emergency access.

## SUPPORTING INFORMATION SOURCES

California Department of Toxic Substances Control, *EnviroStor: Hazardous Waste and Substances Site List.* May 15, 2014.

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

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

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# APPENDIX A

# AIR QUALITY ANALYSIS

# Air Quality Assessment For:
# UNEX INTERNATIONAL PROGRAM EXPANSION PROJECT

**Prepared For:**

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**May 19, 2014**
**Report #553201AQ01**

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# 1.0 Existing Air Quality

## 1.1 Project Description

The University of California, Irvine's University Extension (UNEX) International Program is an English as a Second Language Program. The UNEX International Program Expansion Project will construct a multi-story 69,000 gross square foot (45,000 assignable square foot) building to house this program as well as provide space for additional UNEX expansion. The building will be located on an approximate 1 acre site on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. Exhibit 1 presents a vicinity map showing the project location. Exhibit 2 shows an aerial photograph of the project site.

Students in the UNEX international Program reside in both on-campus housing facilities as well as off-campus housing facilities that are leased by UNEX. An on-campus housing facility for these students is planed in the future. The existing off-campus housing is served by existing UCI shuttle services and/or close enough to the campus to allow walking or bicycling. Therefore, the Project is not expected to generate in a substantial number of new vehicle trips to the campus. The trip generation the Traffic Engineer for the Project, Stantec Consultants, provided data used to calculate pollutant emissions presented in this report.

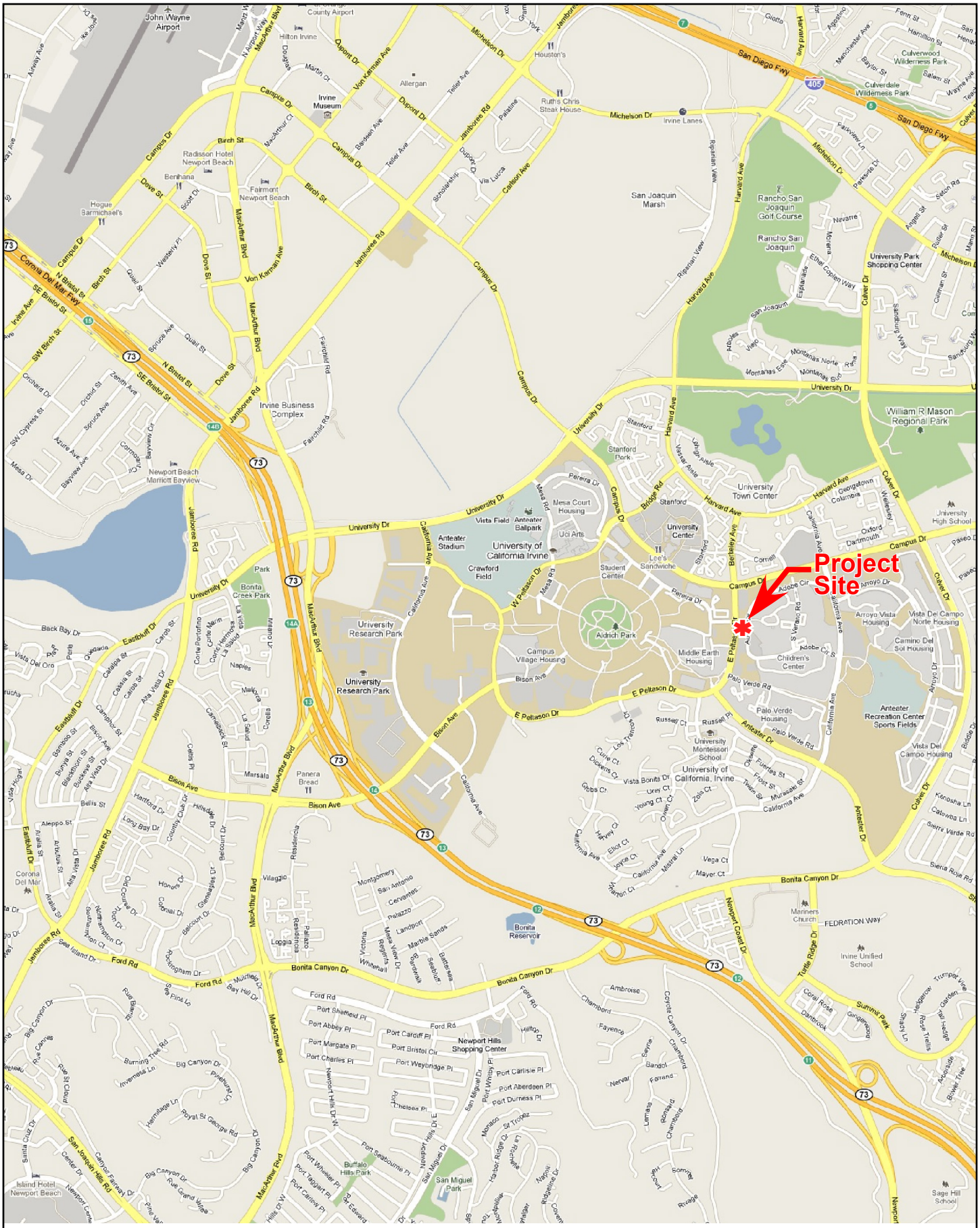
Construction of the Project is anticipated to begin in March 2015 and be completed in 24 months. Site excavation is anticipated to require the export of approximately 5,000 cubic yards of earth material.

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

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

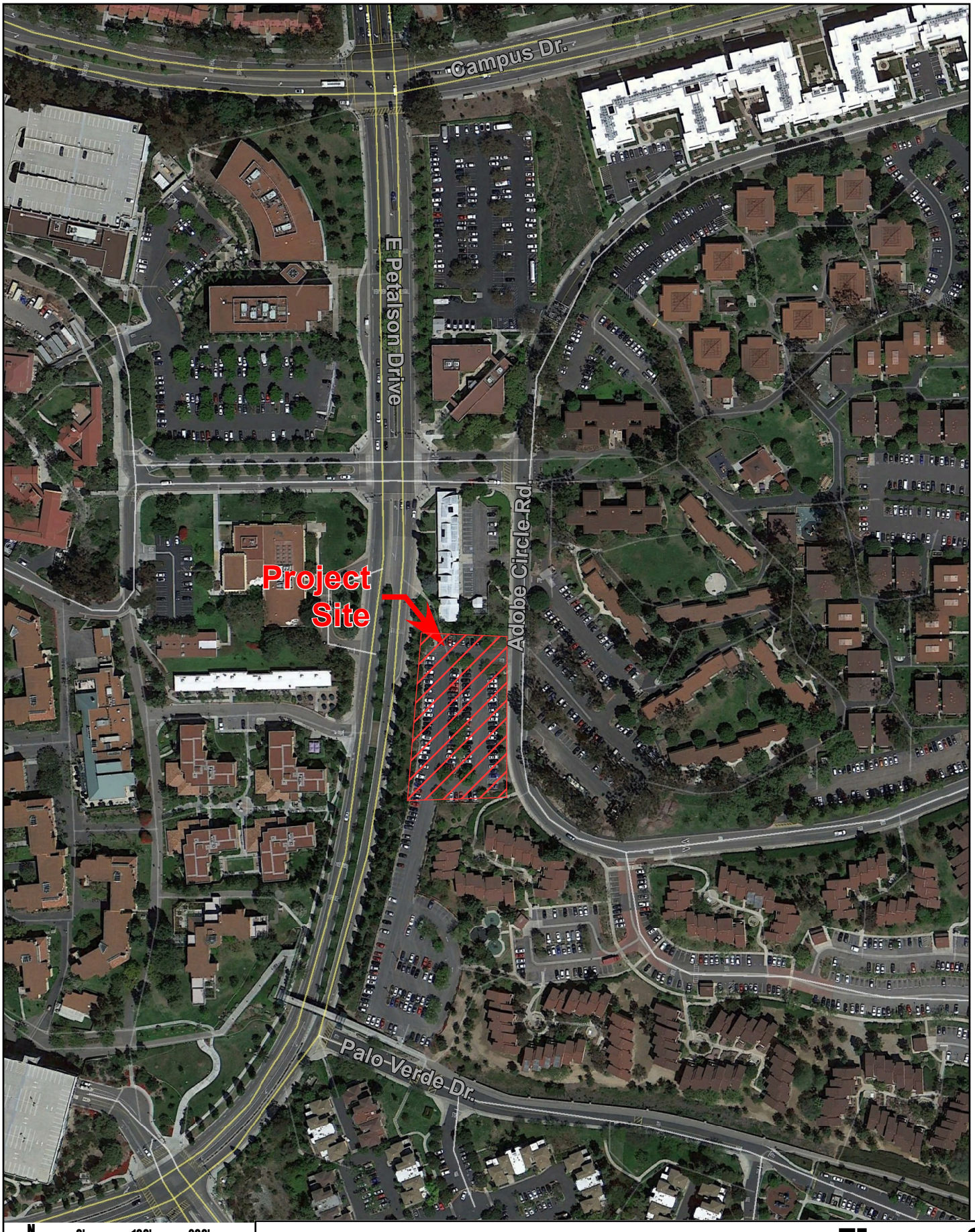
The proposed project is located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. The basin is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains. To the north lie the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

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




Mestre Greve Associates
Landrum & Brown

# Figure 1
# Vicinity Map




Mestre Greve Associates
Landrum & Brown

# Figure 2
# Project Site

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

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

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

## 1.3 Criteria Pollutants, Health Effects and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone ($O_3$), respirable particulate matter ($PM_{10}$), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

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

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

## Table 1
## Ambient Air Quality Standards

| Pollutant | Averaging Time | State Standards[1,3] | Federal Standards[2] | |
|---|---|---|---|---|
| | | | Primary[3,4] | Secondary[3,5] |
| **Ozone ($O_3$)** | 1 Hour | 0.09 ppm (180 µg/m$^3$) | -- | -- |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | 0.075 ppm (147 µg/m$^3$) | Same as Primary |
| **Respirable Particulate Matter ($PM_{10}$)** | 24 Hour | 50 µg/m$^3$ | 150 µg/m$^3$ | Same as Primary |
| | AAM[6] | 20 µg/m$^3$ | -- | Same as Primary |
| **Fine Particulate Matter ($PM_{2.5}$)** | 24 Hour | -- | 35 µg/m$^3$ | Same as Primary |
| | AAM[6] | 12 µg/m$^3$ | 15.0 µg/m$^3$ | Same as Primary |
| **Carbon Monoxide (CO)** | 1 Hour | 20 ppm (23 mg/m$^3$) | 35 ppm (40 mg/m$^3$) | None |
| | 8 Hour | 9.0 ppm (10 mg/m$^3$) | 9 ppm (10 mg/m$^3$) | None |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | -- | -- |
| **Nitrogen Dioxide ($NO_2$)[7]** | 1 Hour | 0.18 ppm (438 µg/m$^3$) | 100 ppb (188 µg/m$^3$) | -- |
| | AAM[6] | 0.030 ppm (56 µg/m$^3$) | 0.053 ppm (100 µg/m$^3$) | Same as Primary |
| **Sulfur Dioxide ($SO_2$)[8]** | 1 Hour | 0.25 ppm (655 µg/m$^3$) | 75 ppb (196 µg/m$^3$) | -- |
| | 3 Hour | -- | -- | 0.5 ppm (1,300 µg/m$^3$) |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | 0.14 ppm (365 µg/m$^3$) (for certain areas)[8] | -- |
| | AAM[6] | -- | 0.030 ppm (80 µg/m$^3$) (for certain areas)[8] | -- |
| **Lead[10]** | 30 day Avg. | 1.5 µg/m$^3$ | -- | -- |
| | Calendar Quarter | -- | 1.5 µg/m$^3$ (for certain areas)[10] | Same as Primary |
| | Rolling 3 Month Avg. | -- | 0.15 µg/m$^3$ | |
| **Visibility Reducing Particles[11]** | 8 hour | Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles ( 0.07 per km -- ≥30 miles for Lake Tahoe) | **No Federal Standards** | |
| **Sulfates** | 24 Hour | 25 µg/m$^3$ | | |
| **Hydrogen Sulfide** | 1 Hour | 0.03 ppm (42 µg/m$^3$) | | |
| **Vinyl Chloride[9]** | 24 Hour | 0.01 ppm (26 µg/m$^3$) | | |

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, $PM_{10}$, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
2. National standards (other than ozone, $PM_{10}$, $PM_{2.5}$, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured each site each year, averaged over three years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m$^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25˚ C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25˚ C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

*(Footnotes continued on next page)*

5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. Annual Arithmetic Mean
7. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
8. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
10. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
11. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

-- No Standard

### *1.3.1 Ozone ($O_3$)*

Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between volatile organic compounds (VOC) (also referred to as reactive organic gasses (ROG)) and nitrogen oxides ($NO_x$), which occur only in the presence of bright sunlight. Sunlight and hot weather cause ground-level ozone to form in the air. As a result, it is known as a summertime air pollutant. Ground-level ozone is the primary constituent of smog. Because ozone is formed in the atmosphere, high concentrations can occur in areas well away from sources of its constituent pollutants.

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

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

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

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

### *1.3.2 Particulate Matter ($PM_{10}$ & $PM_{2.5}$)*

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

The principal health effect of airborne particulate matter is on the respiratory system. Short term exposures to high $PM_{2.5}$ levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long term exposures to high $PM_{2.5}$ levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposures to high PM10 levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms and possible premature mortality. The EPA has concluded that available evidence does not suggest an association between long-term exposure to $PM_{10}$ at current ambient levels and health effects.

$PM_{2.5}$ is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides ($NO_x$) sulfur oxides ($SO_x$) and volatile organic compounds (VOC). $PM_{10}$ is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the re suspension of dusts most typically through construction activities and vehicular travels. $PM_{2.5}$ can remain suspended in the atmosphere for days and weeks and can be transported long distances. $PM_{10}$ generally settles out of the atmosphere rapidly and are not readily transported over large distances.

### *1.3.3 Carbon Monoxide (CO)*

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

### *1.3.4 Nitrogen Dioxide ($NO_2$)*

Nitrogen gas, normally relatively inert (unreactive), comprises about 80% of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides ($NO_x$). Nitric oxide (NO) and nitrogen dioxide ($NO_2$) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide in the atmosphere. Nitrogen dioxide ($NO_2$) is a red-brown pungent gas. Motor vehicle emissions are the main source of $NO_x$ in urban areas.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering

their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of $NO_2$ can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between $NO_2$ concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

$NO_x$ is a combination of primarily NO and $NO_2$. While the NAAQS only addresses $NO_2$, NO and the total group of nitrogen oxides is of concern. NO and $NO_2$ are both precursors in the formation of ozone and secondary particulate matter as discussed in Sections 1.3.1 and 1.3.2. Because of this and that NO emissions largely convert to $NO_2$, $NO_x$ emissions are typically examined when assessing potential air quality impacts.

### *1.3.5 Sulfur Dioxide ($SO_2$)*

Sulfur oxides ($SO_x$) constitute a class of compounds of which sulfur dioxide ($SO_2$) and sulfur trioxide ($SO_3$) are of greatest importance. Ninety-five percent of pollution related $SO_x$ emissions are in the form of $SO_2$. $SO_x$ emissions are typically examined when assessing potential air quality impacts of $SO_2$. Combustion of fossil fuels for generation of electric power is the primary contributor of $SO_x$ emissions. Industrial processes, such as nonferrous metal smelting, also contribute to $SO_x$ emissions. $SO_x$ is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing $SO_x$ emissions from vehicles.

$SO_2$ combines easily with water vapor, forming aerosols of sulfurous acid ($H_2SO_3$), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid ($H_2SO_4$). Peak levels of $SO_2$ in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of $SO_2$ gas and particles cause respiratory illness and aggravate existing heart disease. $SO_2$ reacts with other chemicals in the air to form tiny sulfate particles which are measured as $PM_{2.5}$. The heath effects of $PM_{2.5}$ are discussed in Section 1.3.2.

### *1.3.6 Lead (Pb)*

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

### *1.3.7 Visibility Reducing Particulates*

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

### *1.3.8 Sulfates($SO_4^{2-}$)*

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and / or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide ($SO_2$) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of $SO_2$ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

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

### *1.3.9 Hydrogen Sulfide ($H_2S$)*

Hydrogen sulfide ($H_2S$) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing $H_2S$ at levels above the standard will result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for $H_2S$ is adequate to protect public health and to significantly reduce odor annoyance.

### *1.3.10 Vinyl Chloride (Chloroethene)*

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

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

## 1.4 South Coast Air Basin Air Quality Attainment Designations

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

Table 2 shows that the U.S. EPA has designated SCAB as extreme non-attainment for ozone, serious non-attainment for $PM_{10}$, non-attainment for $PM_{2.5}$, and attainment/maintenance for CO and $NO_2$. The basin has been designated by the state as non-attainment for ozone, $PM_{10}$, and $PM_{2.5}$. For the federal designations, the qualifiers, extreme and serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is designated as in attainment of the Federal $SO_2$ and lead NAAQS as well as the state CO, $NO_2$, $SO_2$, lead, hydrogen sulfide, and vinyl chloride CAAQS.

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

| Pollutant | Federal | State |
|---|---|---|
| Ozone ($O_3$) | Extreme Nonattainment (2024) | Nonattainment |
| Respirable Particulate Matter ($PM_{10}$) | Attainment/Maintenance (2013) | Nonattainment |
| Fine Particulate Matter ($PM_{2.5}$) | Nonattainment (2015) | Nonattainment |
| Carbon Monoxide (CO) | Attainment/Maintenance (2000) | Attainment |
| Nitrogen Dioxide ($NO_2$) | Attainment/Maintenance (1995) | Attainment |
| Sulfur Dioxide ($SO_2$) | Attainment | Attainment |
| Lead | Attainment | Attainment |
| Visibility Reducing Particles | n/a | Unclassified |
| Sulfates | n/a | Unclassified |
| Hydrogen Sulfide | n/a | Attainment |
| Vinyl Chloride | n/a | Attainment |

* Proposed for redesignation to non-attainment

In 1997, U.S. EPA issued a new ozone NAAQS of 0.08 ppm using an 8-hour averaging time. Implementation of this standard was delayed by several lawsuits. Attainment/non-attainment designations were issued on April 15, 2004 and became effective on June 15, 2005. The SCAB was originally designated severe-17 non-attainment, which required attainment of the Federal Standard by June 15, 2021. In 2007, the SCAQMD and CARB requested that U.S. EPA change the nonattainment status of the 8-hour ozone standard to extreme and this request was granted in August 2009. This change of classifications extends the attainment date by three years to 2024 but also requires the SCAQMD to incorporate more stringent air quality regulations such as lower permitting thresholds and implementing reasonably available control technologies at more sources. This change also allows for the use of undefined reductions (i.e. "black box") based on the anticipated development of new control technologies or improvement of existing technologies in the attainment plan. In 2008 EPA announced that it was lowering the 8-hour Ozone standard. This revision to the Ozone standard has been delayed due to legal challenges, further reviews of scientific evidence and interagency consultation. In 2011, EPA recommended lowering the 8-hour ozone standard to 0.070 ppm. However, the previously adopted standard of 0.080 ppm will remain in effect while the agency continues the on-going 5 year review of the updated science which is scheduled to be completed in 2013.

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

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

The SCAB was designated as moderate non-attainment of the $PM_{10}$ standards when the designations were initially made in 1990 with a required attainment date of 1994. In 1993, the basin was redesignated as serious non-attainment with a required attainment date of 2006 because it was apparent that the basin could not meet the $PM_{10}$ standard by the 1994 deadline. At this time, the Basin has met the $PM_{10}$ standards at all monitoring stations except the western Riverside where the annual $PM_{10}$ standard has not been met. However, on September 21, 2006, the U.S. EPA announced that it was revoking the annual $PM_{10}$ standard as research had indicated that there were no considerable health effects associated with long-term exposure to $PM_{10}$. With this change, the basin is technically in attainment of the federal $PM_{10}$ standards although the redesignation process has not yet begun.

In July 1997, U.S. EPA issued NAAQS for fine particulate matter ($PM_{2.5}$). The $PM_{2.5}$ standards include an annual standard set at 15 micrograms per cubic meter ($\mu g/m^3$), based on the three-year average of annual mean $PM_{2.5}$ concentrations and a 24-hour standard of 65 $\mu g/m^3$, based on the three-year average of the 98th percentile of 24-hour concentrations. Implementation of these standards was delayed by several lawsuits. On January 5, 2005, EPA took final action to designate attainment and nonattainment areas under the NAAQS for $PM_{2.5}$ effective April 5, 2005. The SCAB was designated as non-attainment with an attainment required as soon as possible but no later than 2010. EPA may grant attainment date extensions of up to five years in areas with more severe $PM_{2.5}$ problems and where emissions control measures are not available or feasible. It is likely that the SCAB will need this additional time to attain the standard

On September 21, 2006, the U.S. EPA announced that the 24-hour $PM_{2.5}$ standard was lowered to 35 $\mu g/m^3$. The EPA announced attainment/non-attainment designations for the revised $PM_{2.5}$ standard on November 13, 2009 with an effective date of December 14, 2009. The SCAB was found to be in non-attainment of the standard. The SCAQMD has three years from the effective date to submit a plan demonstrating attainment of the standard by April 2015, although the U.S. EPA could grant an extension of up to five years.

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

The federal annual $NO_2$ standard was met for the first time in 1992 and has not been exceeded since. The SCAB was redesignated as attainment for $NO_2$ in 1998. The basin will remain a maintenance/attainment area until 2018, assuming the $NO_2$ standard is not exceeded.

Table 2 shows that SCAB is currently designated as in attainment of the $SO_2$ and lead NAAQS as well as the state CO, $NO_2$, $SO_2$, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, $SO_2$, hydrogen sulfide, and vinyl chloride are not considered a concern in the SCAB. Lead concentrations are only a concern near facilities with considerable lead emissions. The primary pollutants of concern in the SCAB are Ozone and particulate matter.

## 1.5 Air Quality Management Plan (AQMP)

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

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

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

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

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

August 2009 and will extend the required attainment date to 2024 and allow the use of "black box" measures. The "black box:" reductions needed for ozone attainment are estimated to be 190 tons per day (tpd) of $NO_x$ and 27 tpd of VOC. These reductions represent a 17% reduction in 2002 average daily $NO_x$ emissions and a 3% reduction in 2002 average daily VOC emissions.

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

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

The plan focuses on control of sulfur oxides ($SO_x$), directly emitted $PM_{2.5}$, and nitrogen oxides ($NO_x$) to achieve the $PM_{2.5}$ standard. Achieving the 8-hour ozone standard builds upon the $PM_{2.5}$ attainment strategy with additional $NO_x$ and VOC reductions. The control measures in the 2007 AQMP are based on facility modernization, energy efficiency and conservation, good management practices, market incentives/compliance flexibility, area source programs, emission growth management and mobile source programs. In addition, CARB has developed a plan of control strategies for sources controlled by CARB (i.e. on-road and off-road motor vehicles and consumer products). Further, Transportation Control Measures (TCM) defined in SCAG's Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) are needed to attain the standards.

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

The TCMs defined in the RTP and RTIP fall into three categories, High Occupancy Vehicle measures, Transit and System Management Measures and Information-based Transportation

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

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

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

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

On December 7, 2012 the SCAQMD Board adopted the 2012 AQMP. The Final 2012 AQMP outlines a comprehensive control strategy that meets the requirement for expeditious progress towards attainment with the 24-hour $PM_{2.5}$ NAAQS in 2014 with all feasible control measures. The Plan also includes specific measures to further implement the ozone strategy in the 2007 AQMP to assist attaining the 8-hour ozone standard by 2023. The plan must be approved by CARB and the U.S. EPA before it becomes binding.

## 1.6 Climate

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

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

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

## 1.7 Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the SCAB have been made for existing emissions ("2007 Air Quality Management Plan", June 2007). The data indicate that on-road (e.g.; automobiles, busses and trucks) and off-road (e.g.; trains, ships, and construction equipment) mobile sources are the major source of current emissions in the SCAB. Mobile sources account for approximately 64% of VOC emissions, 92% of $NO_X$ emissions, 39% of direct $PM_{2.5}$ emissions, 59% of $SO_X$ emissions and 98% of CO emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30% of VOC emissions and 32% of direct $PM_{2.5}$ emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38% of $SO_X$ emissions. Entrained road dust account for approximately 20% of direct $PM_{2.5}$ emissions.

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

($NO_2$), and Sulfur Dioxide ($SO_2$). Particulate Matter is not monitored at the Costa Mesa-Mesa Verde Drive station. The nearest monitoring station to the proposed project that measures particulate matter levels is the Mission Viejo station which is located approximately 9 miles east of the project site in the vicinity of the intersection of Los Alisos Boulevard and Trabuco Road. Pollutants monitored at the Mission Viejo Station include ozone, carbon monoxide, and particulate matter ($PM_{10}$ and $PM_{2.5}$).

The air quality data monitored at the Costa Mesa-Mesa Verde Drive station from 2009 to 2012 are presented in Table 3. The air quality data monitored at the Mission Viejo station from 2009 to 2012 are presented in Table 4. The air quality data monitored were obtained from the CARB air quality data website (www.arb.ca.gov/adam/) and the SCAQMD Historical Data website (http://www.aqmd.gov/smog/historicaldata.htm). Neither CARB or SCAQMD had published the 2013 data at the time this report was prepared.

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

The state 1-hour ozone standard has been exceeded once in the past four years at the Costa Mesa-Mesa Verde Drive Station. The standard has been exceeded between 0 and 2 days each year over the last three years at the Mission Viejo Station although there were 7 exceedances in 2009. The state 8-hour ozone standard was exceeded between 1 and 3 days each year at the Costa Mesa Station and between 2 and 14 days each year at the Mission Viejo Station. The federal 8-hour standard was exceeded 1 day in each of three previous years at the Costa Mesa Station but was not exceeded in 2009. The standard was exceeded between 1 and 2 days each of the past three years at the Mission Viejo Station but was exceeded 10 days in 2009. The data from the Costa Mesa Station is more representative of conditions near the project site as they are similar distances from the coastline and the Mission Viejo Station is located further inland. Generally, ozone concentrations increase further inland.

The Costa Mesa Station ozone monitoring data shows little change in concentrations but a downward trend in the number of days with exceedances. However, reviewing longer-term data shows that maximum ozone levels were the lowest in 2006 since monitoring began in 1990. Measured maximum levels dropped considerably between 1990 and around 1997 and have been generally level with a slight downward trend since that time with the lowest values measured in 2006. Maximum concentrations at the Mission Viejo station show a general downward trend. There have been considerably fewer days with exceedances in the past three years than in previous years.

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

| Pollutant | California Standard | National Standard | Year | % Msrd.[1] | Max. Level | Days State Standard Exceeded[2] | Days National Standard Exceeded[2] |
|---|---|---|---|---|---|---|---|
| **Ozone** | 0.09 ppm | None | 2012 | 93 | 0.090 | 0 | n/a |
| 1 Hour | | | 2011 | 90 | 0.093 | 0 | n/a |
| Average | | | 2010 | 97 | 0.097 | 1 | n/a |
| | | | 2009 | 98 | 0.087 | 0 | n/a |
| **Ozone** | 0.070 ppm | 0.075 ppm | 2012 | 89 | 0.076 | 1 | 1 |
| 8 Hour | | | 2011 | 91 | 0.077 | 2 | 1 |
| Average | | | 2010 | 95 | 0.076 | 2 | 1 |
| | | | 2009 | 91 | 0.072 | 3 | 0 |
| **CO** | 20 ppm | 35 ppm | 2012 | 89 | -- | 0 | 0 |
| 1 Hour | | | 2011 | 91 | -- | 0 | 0 |
| Average | | | 2010 | 95 | 2 | 0 | 0 |
| | | | 2009 | 91 | 3 | 0 | 0 |
| **CO** | 9.0 ppm | 9 ppm | 2012 | 45 | 1.71 | 0 | 0 |
| 8 Hour | | | 2011 | 95 | 2.22 | 0 | 0 |
| Average | | | 2010 | 99 | 2.09 | 0 | 0 |
| | | | 2009 | 96 | 2.16 | 0 | 0 |
| **$NO_2$** | 0.25 ppm | None | 2012 | 96 | 0.074 | 0 | n/a |
| 1 Hour | | | 2011 | 60 | 0.060 | 0 | n/a |
| Average | | | 2010 | 96 | 0.070 | 0 | n/a |
| | | | 2009 | 98 | 0.065 | 0 | n/a |
| **$NO_2$** | None | 0.053 ppm | 2012 | 96 | -- | n/a | No |
| AAM[3] | | | 2011 | 60 | -- | n/a | No |
| | | | 2010 | 96 | 0.011 | n/a | No |
| | | | 2009 | 98 | 0.013 | n/a | No |
| **$SO_2$** | 0.04 ppm | 0.14 ppm | 2012 | 26 | -- | 0 | 0 |
| 1 Hour | | | 2011 | 46 | -- | 0 | 0 |
| Average | | | 2010 | 93 | 0.002 | 0 | 0 |
| | | | 2009 | 95 | 0.004 | 0 | 0 |
| **$SO_2$** | None | 0.030 ppm | 2012 | 26 | -- | n/a | No |
| AAM[3] | | | 2011 | 46 | -- | n/a | No |
| | | | 2010 | 93 | 0.000 | n/a | No |
| | | | 2009 | 95 | 0.001 | n/a | No |

1. Percent of year where high pollutant levels were expected that measurements were made.
2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the $PM_{10}$ and $PM_{2.5}$ 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.
3. Annual Arithmetic Mean

-- Data Not Reported, n/a – no applicable standard

Sources: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed 9/30/13
SCAQMD Historical Data Website http://www.aqmd.gov/smog/historicaldata.htm accessed 9/30/13

## Table 4
## Air Quality Measured at the Mission Viejo Monitoring Station

| Pollutant | California Standard | National Standard | Year | % Msrd.[1] | Max. Level | Days State Standard Exceeded[2] | Days National Standard Exceeded[2] |
|---|---|---|---|---|---|---|---|
| **Ozone** | 0.09 ppm | None | 2012 | 90 | 0.096 | 2 | n/a |
| 1 Hour | | | 2011 | 98 | 0.094 | 0 | n/a |
| Average | | | 2010 | 95 | 0.117 | 2 | n/a |
| | | | 2009 | 97 | 0.121 | 7 | n/a |
| **Ozone** | 0.070 ppm | 0.075 ppm | 2012 | 92 | 0.078 | 6 | 1 |
| 8 Hour | | | 2011 | 98 | 0.083 | 5 | 2 |
| Average | | | 2010 | 94 | 0.082 | 2 | 2 |
| | | | 2009 | 97 | 0.095 | 14 | 10 |
| **CO** | 20 ppm | 35 ppm | 2012 | 42 | -- | -- | -- |
| 1 Hour | | | 2011 | 98 | -- | -- | -- |
| Average | | | 2010 | 98 | 1 | 0 | 0 |
| | | | 2009 | 97 | 2 | 0 | 0 |
| **CO** | 9.0 ppm | 9 ppm | 2012 | 42 | 0.79 | 0 | 0 |
| 8 Hour | | | 2011 | 98 | 0.95 | 0 | 0 |
| Average | | | 2010 | 98 | 0.90 | 0 | 0 |
| | | | 2009 | 97 | 1.00 | 0 | 0 |
| **Respirable** | 50 $\mu g/m^3$ | 150 $\mu g/m^3$ | 2012 | 98 | 37.0 | 0/0 | 0/0 |
| **Particulates** | | | 2011 | 100 | 48.0 | 0/0 | 0/0 |
| **$PM_{10}$** | | | 2010 | 95 | 34.0 | 0/-- | 0/0 |
| 24 Hour Average | | | 2009 | 99 | 56.0 | 1/6 | 0/0 |
| **Respirable** | 20 $\mu g/m^3$ | None | 2012 | 98 | 17.0 | No | n/a |
| **Particulates** | | | 2011 | 100 | 18.8 | No | n/a |
| **$PM_{10}$** | | | 2010 | 95 | -- | --- | n/a |
| AAM[3] | | | 2009 | 98 | 23.2 | Yes | n/a |
| **Fine** | None | 35 $\mu g/m^3$ | 2012 | 100 | 27.6 | n/a | 0/0 |
| **Particulates** | | | 2011 | 86 | 33.4 | n/a | 0/0 |
| **$PM_{2.5}$** | | | 2010 | 94 | 19.9 | n/a | 0/0 |
| 24 Hour Average | | | 2009 | 95 | 39.2 | n/a | 1/3.5 |
| **Fine** | 12 $\mu g/m^3$ | 15 $\mu g/m^3$ | 2012 | 100 | 7.9 | No | No |
| **Particulates** | | | 2011 | 86 | 8.5 | No | No |
| **$PM_{2.5}$** | | | 2010 | 94 | 7.9 | No | No |
| AAM[3] | | | 2009 | 95 | 9.5 | No | No |

1. Percent of year where high pollutant levels were expected that measurements were made.
2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the $PM_{10}$ and $PM_{2.5}$ 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.
3. Annual Arithmetic Mean

-- Data Not Reported, n/a – no applicable standard

Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed 9/30/13
SCAQMD Historical Data Website http://www.aqmd.gov/smog/historicaldata.htm accessed 9/30/13

The federal 24-hour $PM_{10}$ standard has not been exceeded in the past four years at the Mission Viejo Station. Exceedances of the state 24-hour $PM_{10}$ standard were measured only one day in the past four years. There appears to be a downward trend in maximum 24-hour $PM_{10}$ levels. The state annual average $PM_{10}$ standard was exceeded in 2009 but not in 2011 or 2012 (data was not provided for 2010). Annual average $PM_{10}$ concentrations show a distinct downward trend.

The federal 24-hour $PM_{2.5}$ standard has not been exceeded in the past three years ant the Mission Viejo station. An exceedance of the standard was measured on one day in 2009 with an estimated 3.5 days of exceedances based on that measurement. Maximum 24-hour $PM_{2.5}$ concentrations show a general downward trend but with considerable year-to-year variability.

The state and federal annual average $PM_{2.5}$ standards have not been exceeded in the past four years at the Mission Viejo Station. The annual $PM_{2.5}$ concentrations at the Mission Viejo Station show a general downward trend but with considerable year-to-year variability.

# 2.0 Potential Air Quality Impacts

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

## 2.1 Thresholds of Significance

### *2.1.1 Regional Air Quality*

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

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

| | Regional Significance Threshold (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | CO | VOC | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ |
| **Construction** | 550 | 75 | 100 | 150 | 55 | 150 |
| **Operation** | 550 | 55 | 55 | 150 | 55 | 150 |

### *2.1.2 Local Air Quality*

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

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

The LST mass rate look-up tables are applicable to the following pollutants only: oxides of nitrogen ($NO_X$), carbon monoxide (CO), respirable particulate matter ($PM_{10}$), and fine particulate matter ($PM_{2.5}$). LST's are derived based on the location of the activity (i.e., the source/receptor area); the emission rates of $NO_X$, CO, $PM_{10}$, and $PM_{2.5}$; and the distance to the nearest exposed

individual. This distance is based upon the uses around the project and the Ambient Air Quality Standard (AAQS) averaging times for the pollutants of concern. The shortest AAQS averaging time for CO and $NO_2$ are for one-hour and the nearest exposed individual is the location where a person could be expected to remain for 1-hour. The shortest averaging time for the $PM_{10}$ and $PM_{2.5}$ AAQS is 24 hours and the nearest exposed individual is the location where a person could be expected to remain for 24-hours. Typically, this is the nearest residential use.

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

The project is located in SRA 20. The nearest residential uses are located adjacent to the proposed project to the south. Therefore, per the LST methodology a 25-meter (82-foot) receptor distance was used was used to establish the threshold for all pollutants. The project site is approximately one acre. This information was used to determine the localized significance thresholds applicable to the project.

The LST thresholds specific for the proposed project are presented in Table 6. A project with on-site daily emission rates below these thresholds is considered to have a less than significant effect on local air quality.

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

| | Localized Significance Threshold (lbs/day) | | | |
|---|---|---|---|---|
| | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| **Construction** | 647.0 | 92.0 | 4.0 | 3.0 |
| **Operation** | 647.0 | 92.0 | 1.0 | 1.0 |

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

## 2.2 Short-Term Impacts

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

### *2.2.1 Construction Emission Calculation Methodology*

Emissions during the primary phases of construction were calculated using CalEEMod program (version 2013.2.2). A description of the general construction activities and the equipment expected to be utilized for these activities was provided by the project applicant and are described in detail in the following section.

The CalEEMod model calculates total emissions, on-site and off-site, resulting from each construction activity which are compared to the SCAQMD Regional Thresholds presented in Table 5. On-site project emissions, which are compared to the SCAQMD Local Significance Thresholds presented in Table 6, were calculated by scaling the emissions from on-road sources so that only the emissions from on-site portion of the trip are included. Each worker, material removal or delivery trip was assumed to have a 0.5-mile component within the project site.

### *2.2.2 Construction Activities*

Construction of the proposed UNEX Expansion building is anticipated to begin the first week of March 2015 and take approximately 24 months to complete. Site preparation including the demolition of the existing hardscape and parking lot is anticipated to take two months. Site excavation and grading is anticipated to take one month and will result in the export of approximately 5,000 cubic yards of earth material. Construction of the building is anticipated to take 21 months to complete with painting occurring during the last two months of constriction

Delays in the start for each phase of construction would not significantly affect emission estimates. In fact, the CalEEMod program includes a reduction in on-road and off-road vehicle exhaust emissions each year to account for new construction equipment and on-road vehicles manufactured under stricter emission standards becoming a larger part of the construction fleet (a fleet average emission factor is used to estimate emissions). So for emissions modeling purposes, a delay moving the activity into the following year would actually result in a slight reduction in the exhaust emissions estimates. Lengthening the duration of each activity would result in the same or lower daily emissions as daily activity levels for emission sources would either not change or decrease as the work is spread out over a longer period of time. A shortening of any of the construction activities achieved by increasing the amount of equipment assumed could result in higher emissions and would require a re-analysis of the emission impacts.

The following paragraphs describe the activity assumptions used to calculate emissions for each of the construction activities discussed above. The CalEEMod input and output files are available upon request.

*Demolition* is the demolition of the existing parking lot and hardscape in preparation of building construction. This work will occur over the entire project site and is estimated to take eight weeks. The demolition is anticipated to generate approximately 5,000 cubic yards of material that will be removed from the site. The emissions calculation includes just over on daily haul truck trips with a round trip distance of 20 miles to remove the debris. Equipment assumed to be used during grading includes (1) concrete/industrial saw, (1) rubber tired dozer, and (3) tractor/loader/backhoes. The CalEEMod default assumptions were used to estimate emissions from worker trips.

*Excavation/Grading* is the excavation and grading of project site in preparation of building construction. This work will occur over the entire project site and is estimated to take four weeks. The project will require the export of approximately 5,000 cubic yards of material. The emissions calculation includes 14 daily haul truck trips with a round trip distance of 20 miles for

the exported materials. Equipment assumed to be used during grading includes (1) grader, (1) rubber tired dozer, and (1) tractor/loader/backhoe. The CalEEMod default assumptions were used to estimate emissions from worker trips.

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

*Architectural Coating* is the painting of the new building. VOCs are emitted from these coatings as well as the solvents used in cleanup of the coatings. The amount of VOCs that are emitted is dependent on the specific coating being used and its VOC content. Architectural coating emissions were estimated utilizing the CalEEMod default assumptions for residential painting. The default commercial VOC content of paint were reduced to the residential values to be consistent with the limits in SCAQMD Rule 1113.

### *2.2.3 Regional Construction Emissions*

Using the estimates presented above, the air pollutant emissions were calculated and presented in Table 7. The daily emissions are calculated and these represent the highest level of emissions during each construction activity.

Table 7 shows that no individual construction activity will generate emissions that exceed the SCAQMD Regional Emissions Significance Thresholds. In 2016 building construction will occur concurrently with painting. Table 8 presents the total emissions during these concurrent construction activities. These are simply the sum of the emissions presented in Table 7 for the concurrent activities.

**Table 7**
**Total Construction Emissions by Activity**

| | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| **Activity** | **CO** | **$NO_x$** | **VOC** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_x$** |
| Demolition | 23.3 | 30.4 | 3.2 | 2.2 | 1.8 | 0.03 |
| Grading | 23.5 | 34.8 | 3.0 | 4.1 | 2.6 | 0.04 |
| Building Const. (2015) | 22.7 | 29.8 | 4.4 | 2.3 | 1.9 | 0.03 |
| Building Const. (2016) | 22.1 | 28.2 | 4.1 | 2.1 | 1.8 | 0.03 |
| Building Const. (2016) | 21.5 | 26.3 | 3.7 | 1.9 | 1.6 | 0.03 |
| Painting | 2.1 | 2.2 | 36.4 | 0.2 | 0.2 | 0.00 |
| **Significance Threshold** | **550** | **100** | **75** | **150** | **55** | **150** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** | **No** | **No** |

**Table 8**
**Total Concurrent Construction Emissions**

| Activity | Daily Emissions (lbs/day) CO | $NO_x$ | VOC | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ |
|---|---|---|---|---|---|---|
| **Building Construction Combined With:** | | | | | | |
| Painting | 23.6 | 28.5 | 40.1 | 2.1 | 1.8 | 0.04 |
| **Significance Threshold** | **550** | **100** | **75** | **150** | **55** | **150** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** | **No** | **No** |

Table 8 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Regional Emissions Significance Thresholds. Therefore, the construction of the project will not result in a significant regional air quality impact.

### *2.2.4 On-site Construction Emissions*

On-site emissions for each of the construction activities were calculated based on the CalEEMod output as discussed in Section 2.2.1 and are presented in Table 9. The applicable LST thresholds are also presented.

**Table 9**
**On-Site Emissions By Construction Activity**

| Activity | Daily Emissions (lbs/day) CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| Demolition | 22.1 | 29.7 | 2.1 | 1.8 |
| Grading | 17.3 | 26.4 | 3.4 | 2.3 |
| Building Const. (2015) | 20.2 | 28.6 | 1.9 | 1.8 |
| Building Const. (2016) | 19.9 | 27.2 | 1.8 | 1.7 |
| Building Const. (2017) | 19.4 | 25.3 | 1.6 | 1.5 |
| Painting | 1.9 | 2.2 | 0.2 | 0.2 |
| **Significance Threshold** | **647.0** | **92.0** | **4.0** | **3.0** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** |

Table 9 shows that no individual construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. In 2017, building construction will occur concurrently with painting. Table 10 presents the total emissions during these concurrent construction activities. These are simply the sum of the emissions presented in Table 9 for the concurrent activities.

**Table 10**
**On-Site Emissions By Concurrent Construction Activities**

| Activity | Daily Emissions (lbs/day) CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| **Building Construction Combined With:** | | | | |
| Painting | 21.3 | 27.5 | 1.8 | 1.7 |
| **Significance Threshold** | **647.0** | **92.0** | **4.0** | **3.0** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** |

Table 10 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. Therefore, the construction of the project will not result in a significant local air quality impact.

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

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime (California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Guide to Health Risk Assessment.) Demolition and grading for the project, when the peak diesel exhaust emissions would occur, is expected to take approximately six months, cumulatively, with all construction expected to take approximately 24 months. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the project are not expected to result in a significant impact.

## 2.3 Long Term Impacts

The primary source of long-term operational air pollutant emissions associated with the project will be motor vehicles. Long-term operational emissions from the project also include combustion of natural gas for water and space heating, landscape maintenance equipment and maintenance painting. Project emissions were calculated for the expected opening year of the project, 2017. The EMFAC2011 program, which is used as the basis for the vehicular emissions in the CalEEMod program, shows that average vehicular emissions are projected to decline in future years as older higher polluting vehicles are replaced with newer less polluting vehicles. Therefore, the opening year emissions represent the greatest emissions from the operation of the project.

Total emissions from the project for the opening year of the project were calculated using the methodology presented in Section 2.3.1 and are presented in Section 2.3.2. These emissions are compared to the SCAQMD Regional emission factors presented in Section 2.1.1. Total on-site emissions from the project were calculated using the methodology presented in Section 2.3.1 and are presented in Section 2.3.3. These emissions are compared to the Local Significance Thresholds (LST) presented in Section 2.1.2. Traffic generated by the project has the potential to affect air pollutant concentrations at intersections in the vicinity of the project. These impacts are examined in Section 2.3.4.

### *2.3.1 Project Emissions Calculation Methodology*

Air pollutant emissions due to the project were calculated using the CalEEMod program (version 2013.2.2). To determine emissions with the project, the program was set to calculate emissions for a 70,000 square foot office on a 1-acre site. Default CalEEMod variables were used for the calculations except the trip generation rate. The traffic evaluation for the Project (Letter from Ms. Maria Manalili, PTP, Transportation Planner, Stantec Consulting Services Inc., "Proposed University Extension Classrooms (UEC) Project Traffic Evaluation," dated May 1, 2014) determined that the project would generate 184 additional daily trips. This trip generation rate was used to estimate vehicular pollutant emissions due to the Project.

Emissions were calculated for the opening year of the project, 2017. Vehicular emissions are projected to decrease in future years (as projected by EMFAC2011). Therefore, emissions during the first year are the highest emissions from the project during its lifespan. CalEEMod calculates daily emissions for the summertime and wintertime periods. The results presented below are the highest daily emissions for either season. CalEEMod calculates total regional emissions associated with the operation of the project. On-site emissions were calculated by scaling the vehicular emissions by the ratio of the on-site trip length, 0.5 miles, to the total average trip length of 9.0 miles determined by CalEEMod.

The appendix presents a summary of the CalEEMod inputs used to estimate the emissions. The CalEEMod input and output files showing the specific data utilized in calculating the emissions due to the project are available upon request.

### *2.3.2 Regional Project Emissions*

Table 11 presents the results of the CalEEMod model showing the daily air pollutant emissions projected for the opening year of the project.

**Table 11**
**Total Emissions With Project**

| | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| **Activity** | **CO** | **VOC** | **$NO_x$** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_x$** |
| Vehicular Emissions | 6.5 | 0.6 | 1.4 | 1.3 | 0.4 | 0.02 |
| Natural Gas Combustion | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.00 |
| Landscaping | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| Consumer Products | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.00 |
| Architectural Coatings | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.00 |
| **Total Emissions** | **6.7** | **2.4** | **1.6** | **1.3** | **0.4** | **0.02** |
| **Significance Threshold** | **550** | **55** | **55** | **150** | **55** | **150** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** | **No** | **No** |

Table 11 shows that the total emissions from the project will be less than the SCAQMD regional significance thresholds. Therefore, the project will not result in a significant regional air quality impact. No mitigation is required.

Table 12 compares total emissions with the project to the projected basin wide emissions from the 2007 AQMP. This comparison shows that the project represents a very small fraction of the

total regional emissions. The project represents, at most, just more than one one-thousandth of a percent of the total regional emissions.

**Table 12**
**Comparison of interim Project Emissions with SCAB Emissions**

| | Pollutant Emissions (tons/day) | | | | | |
|---|---|---|---|---|---|---|
| | CO | VOC | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ |
| Project Emissions | 0.00333 | 0.00122 | 0.00080 | 0.00065 | 0.00019 | 0.00001 |
| 2023 South Coast Air Basin* | 2,147 | 95 | 539 | 508 | 318 | 102 |
| Project as Percentage of Basin | 0.0002% | 0.0013% | 0.0001% | 0.0001% | 0.0001% | 0.0000% |

* Source: 2007 AQMP Table 3-5A except $PM_{10}$ from 2003 AQMP Tables 3-5A and 3-5B

### *2.3.3 On-Site Project Emissions*

Based on the assumptions described above, the on-site emissions during the opening year of the project were calculated and are presented in Table 13. Table 13 shows that the on-site emissions will not exceed the LSTs. Therefore, the project will not result in a significant localized air quality impact.

**Table 13**
**On-Site Project Emissions**

| | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| Activity | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Vehicular Emissions | 0.4 | 0.1 | 0.1 | 0.0 |
| Natural Gas Combustion | 0.2 | 0.2 | 0.0 | 0.0 |
| Landscaping | 0.0 | 0.0 | 0.0 | 0.0 |
| Consumer Products | 0.0 | 0.0 | 0.0 | 0.0 |
| Architectural Coatings | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Emissions** | **0.5** | **0.3** | **0.1** | **0.0** |
| **Significance Threshold** | **647.0** | **92.0** | **1.0** | **1.0** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** |

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

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

The most notable source of CO is motor vehicles. For this reason, carbon monoxide concentrations are usually indicative of the local air quality generated by a roadway network, and are used as an indicator of its impacts on local air quality. CO concentrations are highest near intersections where queuing increases emissions. Local air quality impacts can be assessed by comparing future carbon monoxide levels with State and Federal carbon monoxide standards

moreover by comparing future CO concentrations with and without the project. The Federal and State standards for carbon monoxide were presented earlier in Table 1.

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

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

The project is projected to generate 18 additional trips during the PM peak hour, 16 additional trips during the AM peak hour, and a total of 184 additional trips each day (Letter from Ms. Maria Manalili, PTP, Transportation Planner, Stantec Consulting Services Inc., "Proposed University Extension Classrooms (UEC) Project Traffic Evaluation," dated May 1, 2014). Further, the vast majority of these additional trips would be expected to be passenger vehicles and not heavy trucks. This additional traffic is minor would not be expected to considerably increase CO or particulate matter concentrations near any intersection.

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

## 2.4 Compliance with Air Quality Planning

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

### *2.4.1 Consistency with AQMP*

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

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

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

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

(2) Whether the project will exceed the assumptions in the AQMP based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

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

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

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

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

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. The SCAG forecasts are based on the General Plans of municipalities in the basin. The project is consistent with the University's Long Range Development Plan (LDRP), which is effectively the University's General Plan. Further, the analysis presented above shows that the total project emissions are less than the SCAQMD significance thresholds. The emissions increase due to the project is minor and will not interfere with the AQMP or the attainment of the ambient air quality standards. Therefore, emissions from the project site at project completion will not be greater than those anticipated in the AQMP.

# 3.0 Mitigation Measures

## 3.1 Short-Term Impacts

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

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

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

i. During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, non-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor.

ii. During windy days when fugitive dust can be observed leaving the construction site, additional applications of water shall be required at a rate to be determined by the on-site construction supervisor.

iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities.

iv. Areas of the construction site that will remain inactive for three months or longer following clearing, grubbing and/or grading shall receive appropriate BMP treatments (e.g., revegetation, mulching, covering with tarps, etc.) to prevent fugitive dust generation.

v. All exposed soil or material stockpiles that will not be used within 3 days shall be enclosed, covered, or watered twice daily, or shall be stabilized with approved non-toxic chemical soil binders at a rate to be determined by the on-site construction supervisor.

vi. Unpaved access roads shall be stabilized via frequent watering, non-toxic chemical stabilization, temporary paving, or equivalent measures at a rate to be determined by the on-site construction supervisor.

vii. Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered.

viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites.

ix. Where visible soil material is tracked onto adjacent public paved roads, the paved roads shall be swept and debris shall be returned to the construction site or transported off site for disposal.

x. Wheel washers, dirt knock-off grates/mats, or equivalent measures shall be installed within the construction site where vehicles exit unpaved roads onto paved roads.

xi. Diesel powered construction equipment shall be maintained in accordance with manufacturer's requirements, and shall be retrofitted with diesel particulate filters where available and practicable.

xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.

xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.

xiv. Heavy construction equipment shall use low $NO_x$ diesel fuel to the extent that it is readily available at the time of construction.

xv. To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines.

xvi. The construction contractor shall develop a construction traffic management plan that includes the following:

- Scheduling heavy-duty truck deliveries to avoid peak traffic periods
- Consolidating truck deliveries

xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers.

xviii. The construction contractor shall, to the extent possible, use pre-coated architectural materials that do not require painting. Water-based or low VOC coatings shall be used that are compliant with SCAQMD Rule 1113. Spray equipment with high transfer efficiency, such as the high volume-low pressure spray method, or manual coatings application shall be used to reduce VOC emissions to the extent possible.

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.

## 3.2 Long-Term Impacts

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

# 4.0 Unavoidable Significant Impacts

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

# Appendix

## CalEEMod Operational Input Summary

# CalEEMod Input Summary - Land Use & Vehicular Trips

## Project Characteristics

| | |
|---|---|
| **File Name:** | UCI_UNEX.xls |
| **Project:** | UCI UNEX Expansion |
| **Year:** | 2017 |
| **Size:** | 1.0 Acres |
| **Population:** | 0 |
| **Location:** | ORA |
| **Climate Zone:** | 8 |
| **Urbanization:** | Urban |
| **Wind Speed:** | 2.2 m/s |
| **Precipitation:** | 30 days/year |
| **Utility:** | Southern California Edison |
| **$CO_2$:** | 630.89 lb/MWhr |
| **$CH_4$:** | 0.029 lb/MWhr |
| **$N_2O$:** | 0.006 lb/MWhr |

## Land Use Information

| | | |
|---|---|---|
| **Category:** | Commercial | 0 |
| | General Office | 0 |
| **Land Use:** | Building | |
| **Units:** | 70 1000sqft | |
| **Lot Size:** | 1.0 Acres | 0.0 Acres |
| **Bulding Size** | 70,000 sq. ft. | 0 sq. ft. |
| **Population:** | 0 | 0 |

## Vehicle Miles Traveled

| **Daily** | **VMT** | **VMT** | **Total** |
|---|---|---|---|
| Home-Work: | 0 | 0 | 0 |
| Home-Shop | 0 | 0 | 0 |
| Home-Other | 0 | 0 | 0 |
| Comm-Cust: | 616 | 0 | 616 |
| Comm-Work: | 837 | 0 | 837 |
| Comm-NonWork: | 200 | 0 | 200 |
| **Total:** | **1,654** | **0** | **1,654** |
| | | | |
| **Annual** | **603,745** | **0** | 603,745 |

# CalEEMod Input Summary - Land Use & Vehicular Trips

**File Name:** UCI_UNEX.xls
**Project:** UCI UNEX Expansion

## Trip Generation

| **Trip Rate** | | | |
|---|---|---|---|
| Weekday: | 2.67 / 1000sqft | / | |
| Saturday: | 2.67 / 1000sqft | / | |
| Sunday: | 2.67 / 1000sqft | / | |
| **Daily Trips:** | | | **Total** |
| Weekday: | 187 | 0 | 187 |
| Saturday: | 187 | 0 | 187 |
| Sunday: | 187 | 0 | 187 |
| Average: | 187 | 0 | 187 |

## Trip Type

| **Trip Purpose** | | |
|---|---|---|
| Primary: | 77% | 0% |
| Diverted: | 19% | 0% |
| Pass By: | 4% | 0% |
| **Origin-Destination** | | |
| Home-Work: | 0% | 0% |
| Home-School: | 0% | 0% |
| Home-Office: | 0% | 0% |
| Comm-Cust: | 48% | 0% |
| Comm-Work: | 33% | 0% |
| Comm-NonWork: | 19% | 0% |

## Trip Length

| **Trip Length Basis** | | |
|---|---|---|
| Home-Work: | 0.00 | 0.00 |
| Home-School: | 0.00 | 0.00 |
| Home-Office | 0.00 | 0.00 |
| Comm-Cust | 8.40 | 0.00 |
| Comm-Work | 16.60 | 0.00 |
| Comm-NonWork | 6.90 | 0.00 |
| **Modeled Trip Length** | | |
| Home-Work: | 0.00 | 0.00 |
| Home-School: | 0.00 | 0.00 |
| Home-Office: | 0.00 | 0.00 |
| Comm-Cust: | 6.87 | 0.00 |
| Comm-Work: | 13.57 | 0.00 |
| Comm-NonWork: | 5.64 | 0.00 |

# CalEEMod Input Summary - Operational Emissions

**File Name:** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Electicity and Natural Gas

| | General Office Building | 0 |
|---|---|---|
| **Electrical Use (kWhr/size/year)** | | |
| Title 24: | 6 | 0 |
| Non-Title 24: | 5 | 0 |
| Lighting: | 5 | 0 |
| **Total:** | **16** | **0** |
| **Natural Gas (kBTU/size/year)** | | |
| Title 24: | 9 | 0 |
| Non-Title 24: | 1 | 0 |
| **Total:** | **10** | **0** |

## Water & Wastewater

| | General Office Building | 0 |
|---|---|---|
| **Water Use (gal/yr)** | | |
| Indoor: | 12,441,362 | 0 |
| Outdoor: | 7,625,351 | 0 |
| **Total:** | **20,066,713** | **0** |
| **Electricity Intensity (kWhr/Mgal)** | | |
| Supply: | 9,727 | 0 |
| Supply Treat: | 111 | 0 |
| Distribute: | 1,272 | 0 |
| Waste Treat: | 1,911 | 0 |
| **Total:** | **11,638** | **0** |
| **Waste Disposal** | | |
| Septic Tank: | 10.3% | 0.0% |
| Aerobic: | 87.5% | 0.0% |
| Anerobic | | |
| *Lagoon:* | *2.2%* | *0.0%* |
| *w/ Combust:* | *100.0%* | *0.0%* |
| *w/ Cogen:* | *0.0%* | *0.0%* |

## Architectural Coatings

| | Interior | Exterior |
|---|---|---|
| **Residential** | | |
| Size: | 0 sq. ft. | 0 sq. ft. |
| Rate: | 50 g/L | 100 g/L |
| **Commercial** | | |
| Square Feet: | 105,000 sq. ft. | 35,000 sq. ft. |
| Emission Factor: | 250 g/L | 250 g/L |
| | **Reapplication Rate** | **10.0%** |

# CalEEMod Input Summary - Operational Emissions

**File Name:** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Fireplace

| | General Office Building | 0 |
|---|---|---|
| **Number of Units With:** | | |
| Wood: | 0 | 0 |
| Gas: | 0 | 0 |
| Propane: | 0 | 0 |
| None: | 0 | 0 |
| **Use** | | |
| Hrs/day: | 0.00 | 0.00 |
| Days/Year: | 0 | 0 |
| Wood Mass: | 0 | 0 |

## Wood Stoves

| | General Office Building | 0 |
|---|---|---|
| **Number of Units With:** | | |
| Conventional: | 0 | 0 |
| Catalytic: | 0 | 0 |
| Non-Catalytic: | 0 | 0 |
| Pellet: | 0 | 0 |
| **Use** | | |
| Days/Year: | 0.00 | 0.00 |
| Wood Mass: | 0 | 0 |

## Consumer Products

| | |
|---|---|
| Emission Factor: | 1.98E-05 g VOC/sqr ft |

## Landscape Equipment

| Snow Days | Summer Days |
|---|---|
| 0 | 250 |

# CalEEMod Input Summary - Operational Mitigation

**File** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Land Use Mitigation

| | |
|---|---|
| **Project Setting** | |
| 0 | |
| **Land Use** | |
| -- | **Increased Density** |
| -- | DU Per Acre |
| -- | Jobs/Acre |
| -- | **Increase Diversity** |
| -- | **Improve Walkability** |
| -- | Intersections/Square Mile |
| -- | **Improve Destination Accessibility** |
| -- | Dist. To Downtown Job Center (mi) |
| -- | **Increase Transit Accessibility** |
| -- | Dist. To Transit Station (mi) |
| -- | **Integrate Below Market Rate Housing** |
| -- | # of Units Below Market Rate |
| **Neighborhood Enhancements** | |
| -- | **Improve Pedestrian Network** |
| -- | |
| -- | **Provide Traffic Calming Measures** |
| -- | % of Streets With Improvement |
| -- | % Intersections With Improvement |
| -- | **Implement NEV Network** |
| **Parking Policy/Pricing** | |
| | **Limit Parking Supply** |
| -- | % Reduction in Spaces |
| -- | **Unbundle Parking Costs** |
| -- | Monthly Parking Cost ($) |
| -- | **On-Street Market Pricing** |
| -- | % Increase in Price |
| **Transit Improvement** | |
| -- | **Provide BRT System** |
| -- | % Lines BRT |
| -- | **Expand Transit Network** |
| -- | % Increase in Transit Coverage |
| -- | **Increase Transit Frequency** |
| -- | Implementation Level |
| -- | % Reduction in Headway |

## Energy Mitigation

| | |
|---|---|
| **Building Energy** | |
| -- | **Exceed Title 24** |
| -- | % Improvement |
| -- | **Install Energy Efficient Lighting** |
| -- | % Improvement |
| **Alternative Energy** | |
| -- | **Onsite Renewable Energy** |
| -- | Total kWH |
| -- | kWH Generated |
| -- | % of Use Generated |
| -- | % of Use |

## Appliance Mitigation

| | |
|---|---|
| 30% | Clothes Washer |
| 15% | Dish Washer |
| 50% | Fan |
| 15% | Refrigerator |

# CalEEMod Input Summary - Operational Mitigation

**File** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Commute Mitigation

| | |
|---|---|
| **Commute Trips** | |
| -- | **Implement Trip Reduction Program** |
| -- | % Employees Eligible |
| -- | Type |
| -- | **Implement Transit Subsidy** |
| -- | % Employees Eligible |
| -- | Daily Subsidy Amount($) |
| -- | **Implement Employee Parking "Cash Out"** |
| -- | % Employees Eligible |
| -- | **Workplace Parking Charge** |
| -- | % Employees Eligible |
| -- | Daily Parking Charge ($) |
| -- | **Encourage Telecommute & Alt Schedules** |
| -- | % Employees Work 9/80 |
| -- | % Employees Work 4/40 |
| -- | % Employees Telecommute 1.5 days |
| -- | **Market Commute Trip Reduction Program** |
| -- | % Employees Eligible |
| -- | **Employee Vanpool/Shuttle** |
| -- | % Employees Eligible |
| -- | % Vanpool Mode Share |
| -- | **Provide Ride Sharing Program** |
| -- | % Employees Eligible |
| **School Trips** | |
| -- | **Implement School Bus Program** |
| -- | % Families Using |

## Water Mitigation

| | |
|---|---|
| **Water Conservation Strategy** | |
| -- | **Apply Water Conservation Strategy** |
| -- | % Reduction Indoor |
| -- | % Reduction Outdoor |
| **Water Supply** | |
| -- | **Use Reclaimed Water** |
| -- | % Indoor Water use |
| -- | % Outdoor Water Use |
| -- | **Use Grey Water** |
| -- | % Indoor Water use |
| -- | % Outdoor Water Use |
| **Indoor Water Use** | |
| -- | **Install Low Flow Bathroom Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Kitchen Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Toilet Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Shower** |
| -- | % Reduction in Flow |
| **Outdoor Water Use** | |
| -- | **Turf Reduction** |
| -- | Turf Reduction Area (acres) |
| -- | % Reduction in Turf |
| -- | **Use Water Efficient Irrigation Systems** |
| -- | % Reduction |
| -- | **Water Efficient Landscape** |
| -- | MAWA (gal/yr) |
| -- | ETWU (gal/yr) |

## Municipal Waste Mitigation

| | |
|---|---|
| -- | **Institute Recycling and Composting Services** |
| -- | % Reduction in Waste Disposed |

# APPENDIX B

# GREENHOUSE GAS ASSESSMENT

# Greenhouse Gas Assessment For:

# UNIVERSITY EXTENSION CLASSROOM BUILDING

**Prepared For:**

**UNIVERSITY OF CALIFORNIA, IRVINE**
Campus and Environmental Planning
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Irvine, CA 92697-232

**Prepared By:**


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May 19, 2014
Report #5553201GG01

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# 1.0 Background Information

## 1.1 Project Description

The University of California, Irvine's University Extension (UNEX) International Program is an English as a Second Language Program. The UNEX International Program Expansion Project will construct a multi-story 69,000 gross square foot (45,000 assignable square foot) building to house this program as well as provide space for additional UNEX expansion. The building will be located on an approximate 1 acre site on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. Exhibit 1 presents a vicinity map showing the project location. Exhibit 2 shows an aerial photograph of the project site.

Students in the UNEX international Program reside in both on-campus housing facilities as well as off-campus housing facilities that are leased by UNEX. An on-campus housing facility for these students is planed in the future. The existing off-campus housing is served by existing UCI shuttle services and/or close enough to the campus to allow walking or bicycling. Therefore, the Project is not expected to generate in a substantial number of new vehicle trips to the campus. The trip generation data used to calculate pollutant emissions presented in this report was provided by the Traffic Engineer for the Project, Stantec Consultants.

Construction of the Project is anticipated to begin in March 2015 and be completed in 24 months. Site excavation is anticipated to require the export of approximately 5,000 cubic yards of earth material.

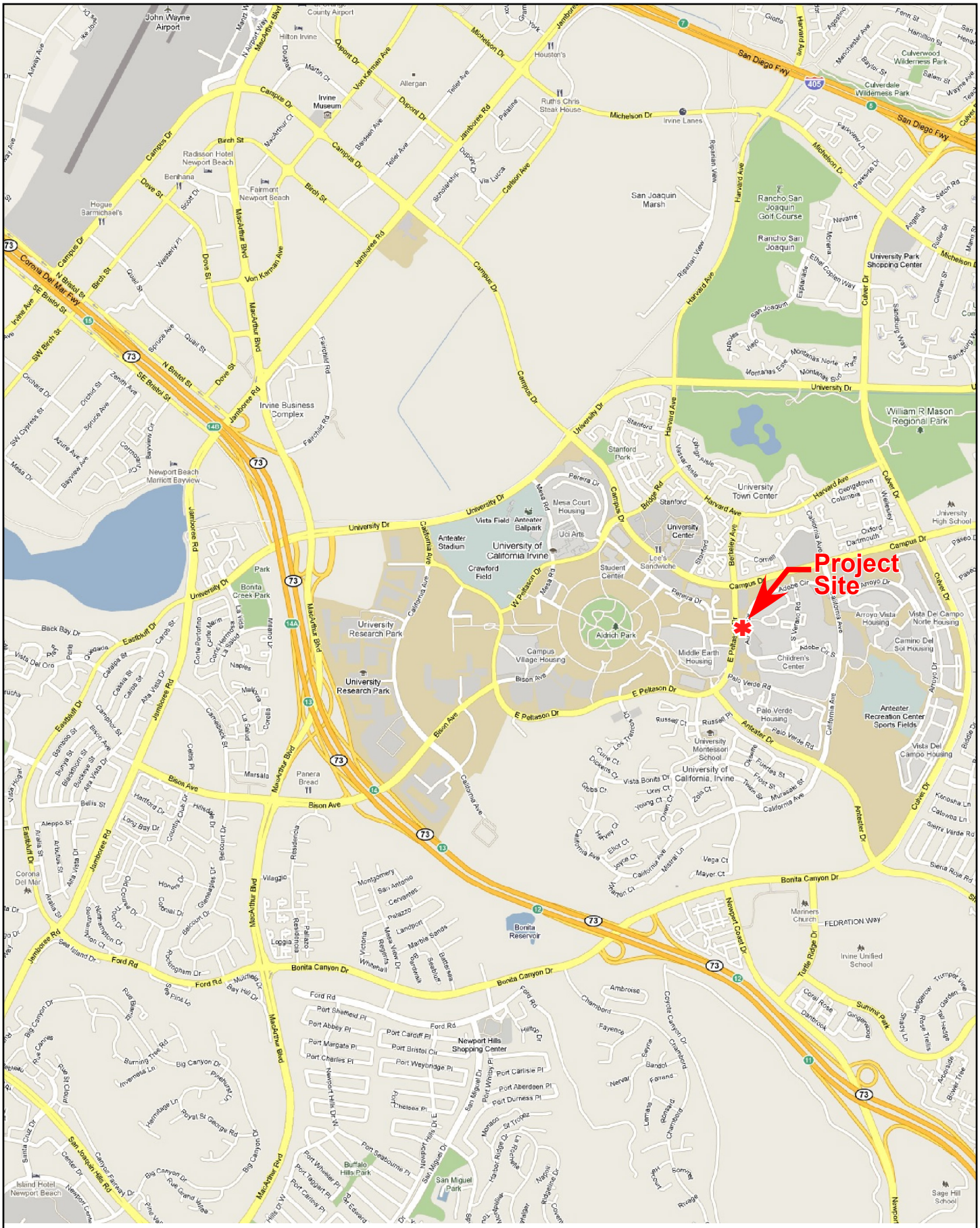
This report analyzes the potential greenhouse gas climate change impacts associated with this project.

## 1.2 Greenhouse Gases and Climate Change

### 1.2.1 Impact of Climate Change

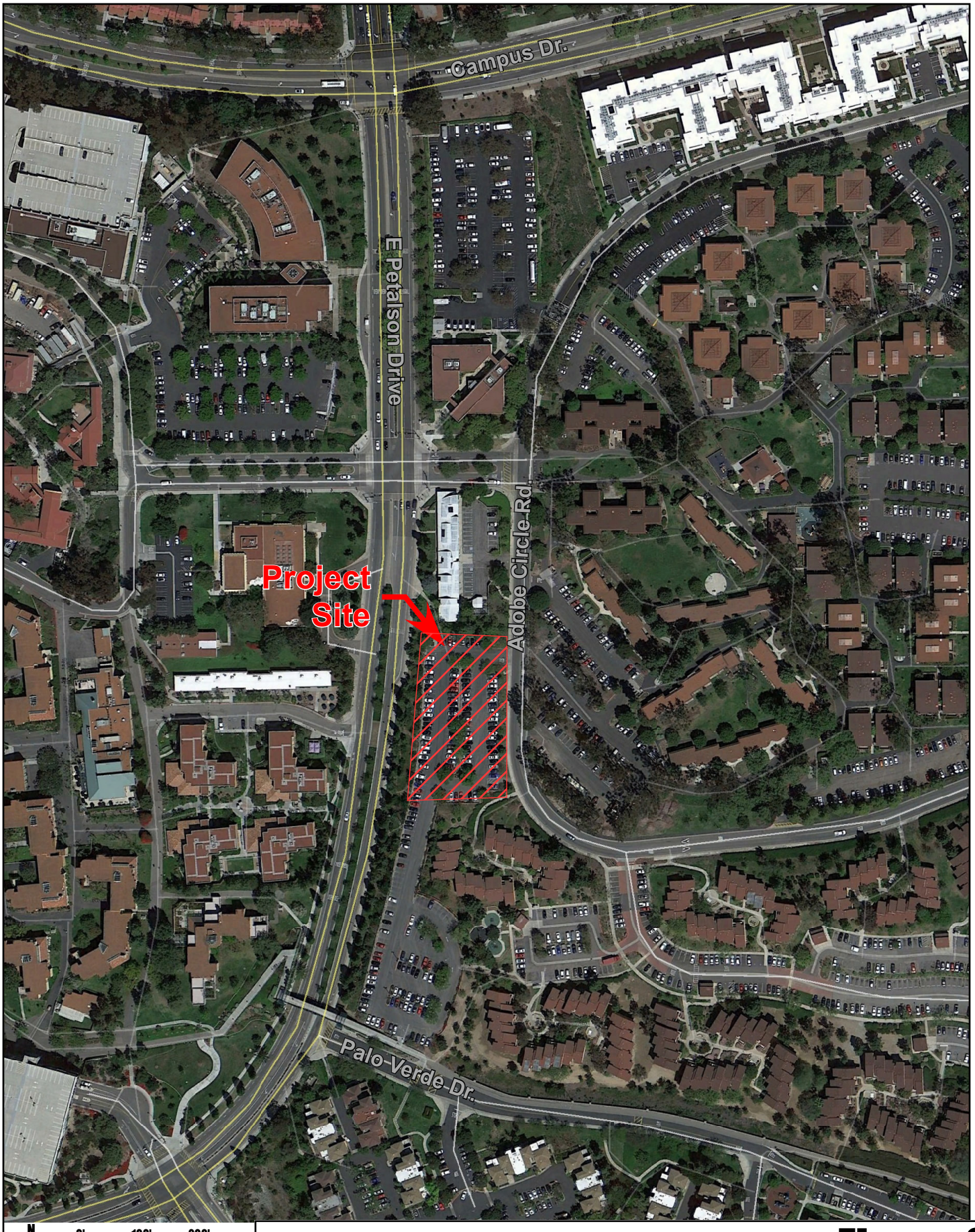
The Earth's climate has always been in the process of changing, due to many different natural factors. These factors have included changes in the Earth's orbit, volcanic eruptions, and varying amounts of energy released from the sun. Differences such as these have caused fluctuations in the temperature of the climate, ranging from ice ages to long periods of warmth. However, since the late 18$^{th}$ century, humans have had an increasing impact of the rate of climate change, beginning with the Industrial Revolution.

Many human activities have augmented the amount of "greenhouse gases" ("GHGs") being released into our atmosphere, specifically the burning of fossil fuels, such as coal and oil, and deforestation. The gases increase the efficiency of the greenhouse effect, which is the process of trapping and recycling energy (in the form of heat) that the Earth emits naturally, resulting in higher temperatures worldwide. The Intergovernmental Panel on Climate Change stated in February 2007 that warming is unequivocal, expressing very high confidence (expressed as a nine out of ten chance of being correct) that the net effect of human activities since 1750 has been one of warming. According to the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA) data, the average surface temperature of the Earth has increased by about 1.2 to 1.4 ºF in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 2005. [EPA, 2011, epa.gov/climatechange/basicinfo.html].




Mestre Greve Associates
Landrum & Brown

# Figure 1
# Vicinity Map

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Landrum & Brown

# Figure 2
# Project Site

This process of heating is often referred to as 'global warming,' although the National Academy of Sciences prefers the terms 'climate change' as an umbrella phrase which includes global warming as well as other environmental changes, in addition to the increasing temperatures. Some of these effects include changes to rainfall, wind, and current weather patterns, as well as snow and ice cover, and sea level.

If greenhouse gases continue to increase, climate models predict that the average temperature at the Earth's surface could increase from 3.2 to 7.2ºF above 1990 levels by the end of this century. The degree of change is influenced by the assumed amount of GHG emissions, and how quickly atmospheric GHG levels are stabilized. At this point, however, the climate change models are not capable of predicting local impacts, but rather, can only predict global trends. [EPA, 2011, epa.gov/climatechange/basicinfo.html].

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMT $CO_2EQ$") units. A metric ton is approximately 2,205 lbs. Some GHGs emitted into the atmosphere are naturally occurring, while others are caused solely by human activities. The principal GHGs that enter the atmosphere because of human activities are:

- **Carbon dioxide ($CO_2$)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.

- **Methane ($CH_4$)** is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.

- **Nitrous oxide ($N_2O$)** is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.

- **Fluorinated Gases** are emitted primarily from industrial sources, which often include hydrofluorocarbons (HRC), perfluorocarbons (PFC), and sulfur hexafluoride ($SF_6$). Though they are often released in smaller quantities, they are referred to as High Global Warming Potential Gases because of their ability to cause global warming. Fluorinated gases are often used as substitutes for ozone depleting substances.

These gases have different potentials for trapping heat in the atmosphere, called global warming potential ("GWP"). For example, one pound of methane has 21 times more heat capturing potential than one pound of carbon dioxide. When dealing with an array of emissions, the gases are converted to carbon dioxide equivalents for comparison purposes. The GWPs for common greenhouse gases are shown in Table 1.

**Table 1**
**Global Warming Potentials (GWP)**

| Gas | Global Warming Potential |
|---|---|
| Carbon Dioxide ($CO_2$) | 1 |
| Methane ($CH_4$) | 21 |
| Nitrous Oxide ($N_2O$) | 310 |
| HFC-23 | 11,700 |
| HFC-134a | 1,300 |
| HFC-152a | 140 |
| PFC: Tetrafluoromethane ($CF_4$) | 6,500 |
| PFC: Hexafluoroethane ($C_2F_6$) | 9,200 |
| Sulfur Hexafluoride ($SF_6$) | 23,900 |

Source: EPA 2011. "Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009," February 15, 2011.

### 1.2.2 Impact of Climate Change on California and Human Health

The long term environmental impacts of global warming may include sea level rise that could cause devastating erosion and flooding of coastal cities and villages, as well as more intense hurricanes and typhoons worldwide. In the United States, Chicago is projected to experience 25 percent more frequent heat waves and Los Angeles a four-to-eight-fold increase in heat wave days by the end of the century (IPCC, 2007: Climate Change 2007: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge).

Locally, global warming could cause changing weather patterns with increased storm and drought severity in California. Changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack (e.g., estimates include a 30 to 90% reduction in snow pack in the Sierra Nevada mountain range). Current data suggest that in the next 25 years, in every season of the year, California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. The California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature rises between 3 and 10.5˚ F
- 6 to 20 inches or more increase in sea level
- 2 to 4 times as many heat-wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers
- 1 to 1.5 times more critically dry years
- 10 to 55% increase in the risk of wildfires

An increase in the frequency of extreme events may result in more event-related deaths, injuries, infectious diseases, and stress-related disorders. Particular segments of the population such as those with heart problems, asthma, the elderly, the very young and the homeless can be especially vulnerable to extreme heat. In addition, climate change may increase the risk of some

infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects. These "vector-borne" diseases include malaria, dengue fever, yellow fever, and encephalitis. Also, algal blooms could occur more frequently as temperatures warm — particularly in areas with polluted waters — in which case diseases (such as cholera) that tend to accompany algal blooms could become more frequent.

### 1.2.3 Adaptation Impact

Adaptation refers to potential climate change impacts on the project. Global warming is already having a profound impact on water resources. Climate change already altered the weather patterns and water supply in California leading to increased water shortages (i.e., a dwindling snowpack, bigger flood flows, rising sea levels, longer and harsher droughts). Water supplies are also at risk from rising sea levels. Risks may include degrade California's estuaries, wetlands, and groundwater aquifers which would threaten the quality and reliability of the major California fresh water supply (Climate Change Adaptation Strategies for California's Water, State of California Department of Water Resources, October 2008).

Higher temperatures will also likely increase electricity demand due to higher air conditioning use. Even if the population remained unchanged, toward the end of the century annual electricity demand could increase by as much as 20 percent if temperatures rise into the higher warming range. (Implementing aggressive efficiency measures could lower this estimate).

Higher temperatures may require that the project consume more electricity for cooling. Additionally, more water may be needed for the landscaping. However, sea level rise won't impact the project because it's so far and high relative to the ocean.

Adaptation includes the responses to the changing climate and policies to minimize the predicted impacts (e.g., building better coastal defenses to sea level rise). Adaptation is not included in this report. It should be note that adaptation is not mitigation. Mitigation includes intervention or policies to reduce GHG emissions or to enhance the sinks of GHGs.

## 1.3 Emission Inventories

To put perspective on the emissions generated by a project and to better understand the sources of GHGs, it is important to look at emission inventories. The United Nations has taken the lead in quantifying GHG emissions and compiling the literature on climate change. The United Nations estimated for $CO_2$ equivalents for the world and for the top ten $CO_2$ producing countries are presented in Table 2.

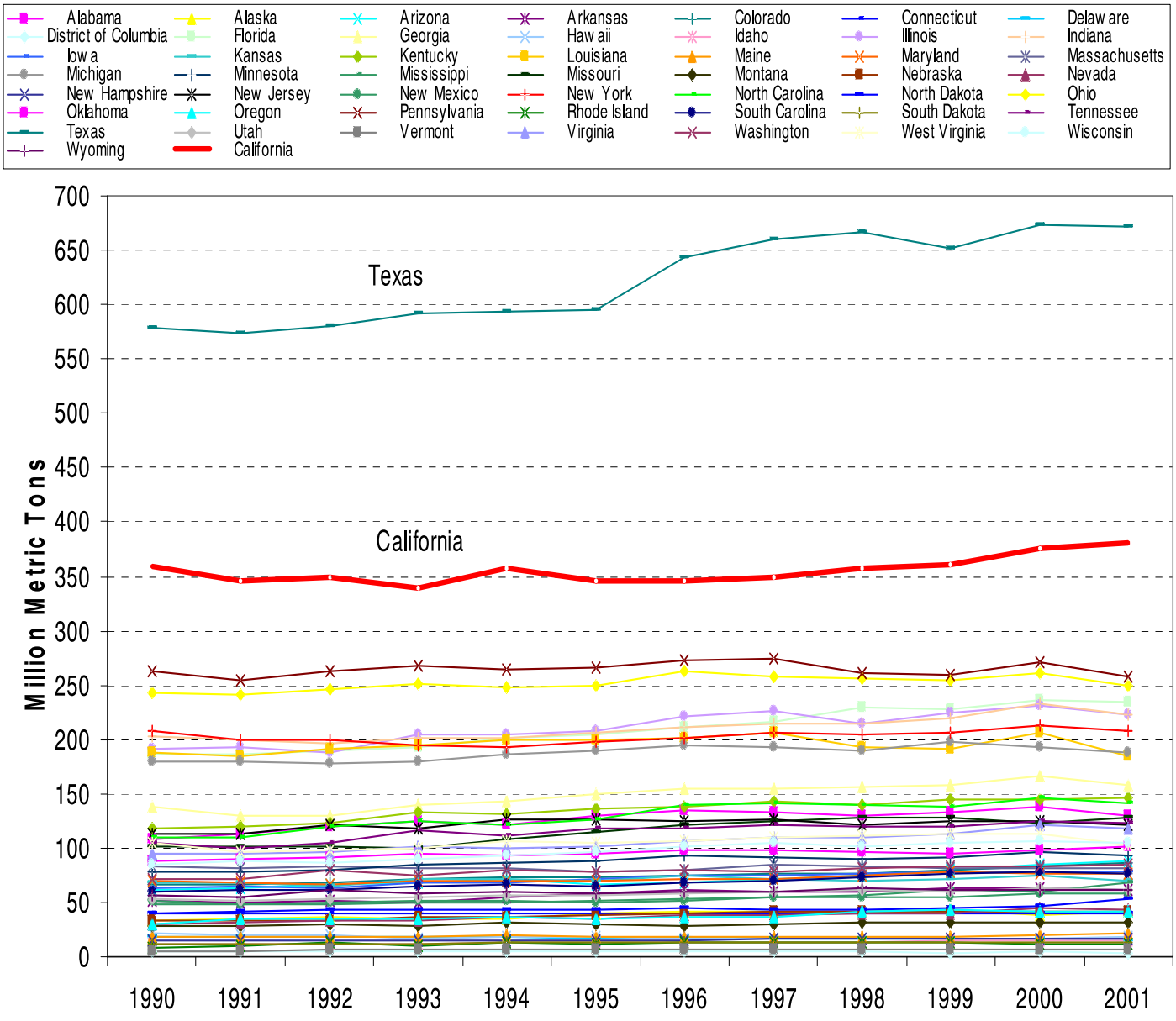
**Table 2**
**Top Ten $CO_2$ Producing Nations in 2007**
**(Emissions in Million Metric Tons (MMT) $CO_2EQ$)**

| Country | GHG Emissions (MMT $CO_2EQ$) | Percent of Global |
|---|---|---|
| 1. China | 6,538 | 22% |
| 2. United States | 6,094 | 20% |
| 3. India | 1,610 | 5% |
| 4. Russian Federation | 1,580 | 5% |
| 5. Japan | 1,304 | 4% |
| 6. Germany | 841 | 3% |
| 7. Canada | 590 | 2% |
| 8. United Kingdom | 546 | 2% |
| 9. Korea, Republic of | 503 | 2% |
| 10. Iran (Islamic Republic of) | 496 | 2% |
| *Remaining Countries* | *10,010* | *33%* |
| **Total Global** | **30,114** | **100%** |

Source: United Nations, 2011,
http://unstats.un.org/unsd/environment/air_co2_emissions.htm

Global $CO_2$ emissions totaled about 30,114 MMT $CO_2$ in 2007. China released the most $CO_2$ emissions. The United States was second and released 6,094 MMT $CO_2$ in 2007, which is approximately 20% of the earth's total emissions. The data in Table 2 emphasize the major role that the United States and China play in climate change with the emissions of the two countries accounting for 42% of the emissions.

Within the United States, California has the second highest level of GHG production with Texas having the highest. In 2001, the burning of fossil fuels produced over 81% of total GHG emissions. In relation to other states, California is the second highest producer of $CO_2$ by fossil fuels, as shown in Exhibit 3.




Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006

# Figure 3 - $CO_2$ Emissions from Fossil Fuel Combustion by State

## 1.4 Sources of Greenhouse Gas in California

The California Energy Commission ("CEC") categorizes GHG generation by source into five broad categories. The categories are:

- **Transportation** includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption and bunker fuel for ships.
- **Agriculture and forestry** GHG emissions are composed mostly of nitrous oxide from agricultural soil management, $CO_2$ from forestry practice changes, methane from enteric fermentation, and methane and nitrous oxide from manure management.
- **Commercial and residential** uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.
- **Industrial** GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.
- **Electric generation** includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.
- **Recycling and waste** includes primarily landfills.
- **High (GWP**) emissions consist of ozone depleting substance substitutes and electricity grid SF6 losses.
- **Forestr**y emissions are due to wildfires.

The relative amount of GHGs released from each of these categories in California in 2009 is shown in Exhibit 4. (Source: "California Greenhouse Gas Inventory for 2000-2009 by Category as Defined in the Scoping Plan," California Environmental Protection Agency, October 26, 2011).

Examination of Exhibit 4 indicates that most of California's GHGs are emitted by transportation sources, such as automobiles, trucks, and airplanes. Combustion of fossil fuels in the transportation sector contributed approximately 38% of the California GHG. This category was followed by the electric power sector (including both in-state and out-of-state sources) (23%) and the industrial sector (18%). Residential and commercial activity accounted for approximately 9% of the emissions.

While California has the second highest rate of GHG production in the nation, it should also be noted that California has one of the lowest per capita rates of GHG emissions, as shown in Exhibit 5. According to Exhibit 5, California had the fourth lowest per capita rate of $CO_2$ production from fossil fuels in the United States. Wyoming produced the most $CO_2$ per capita,

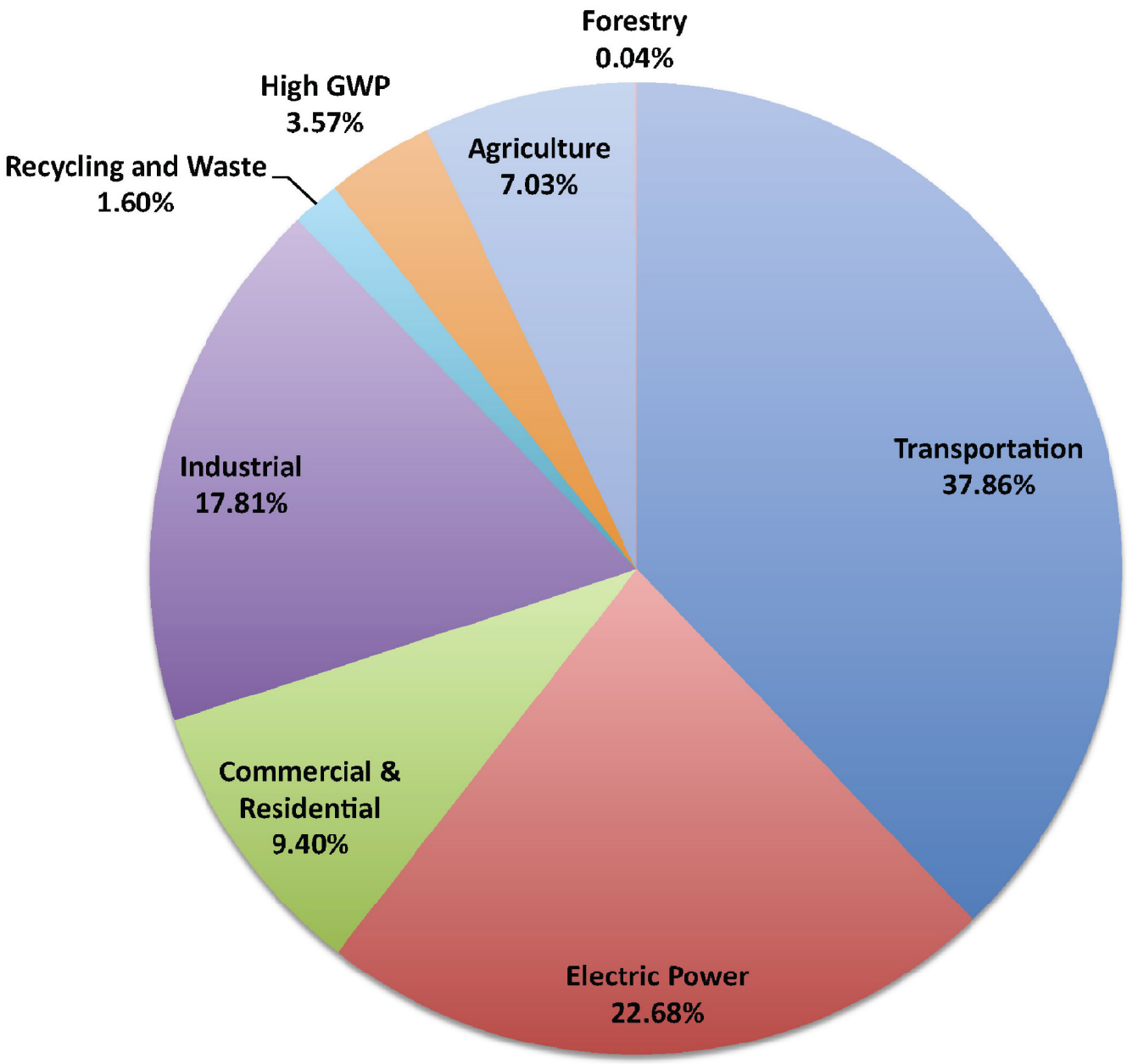
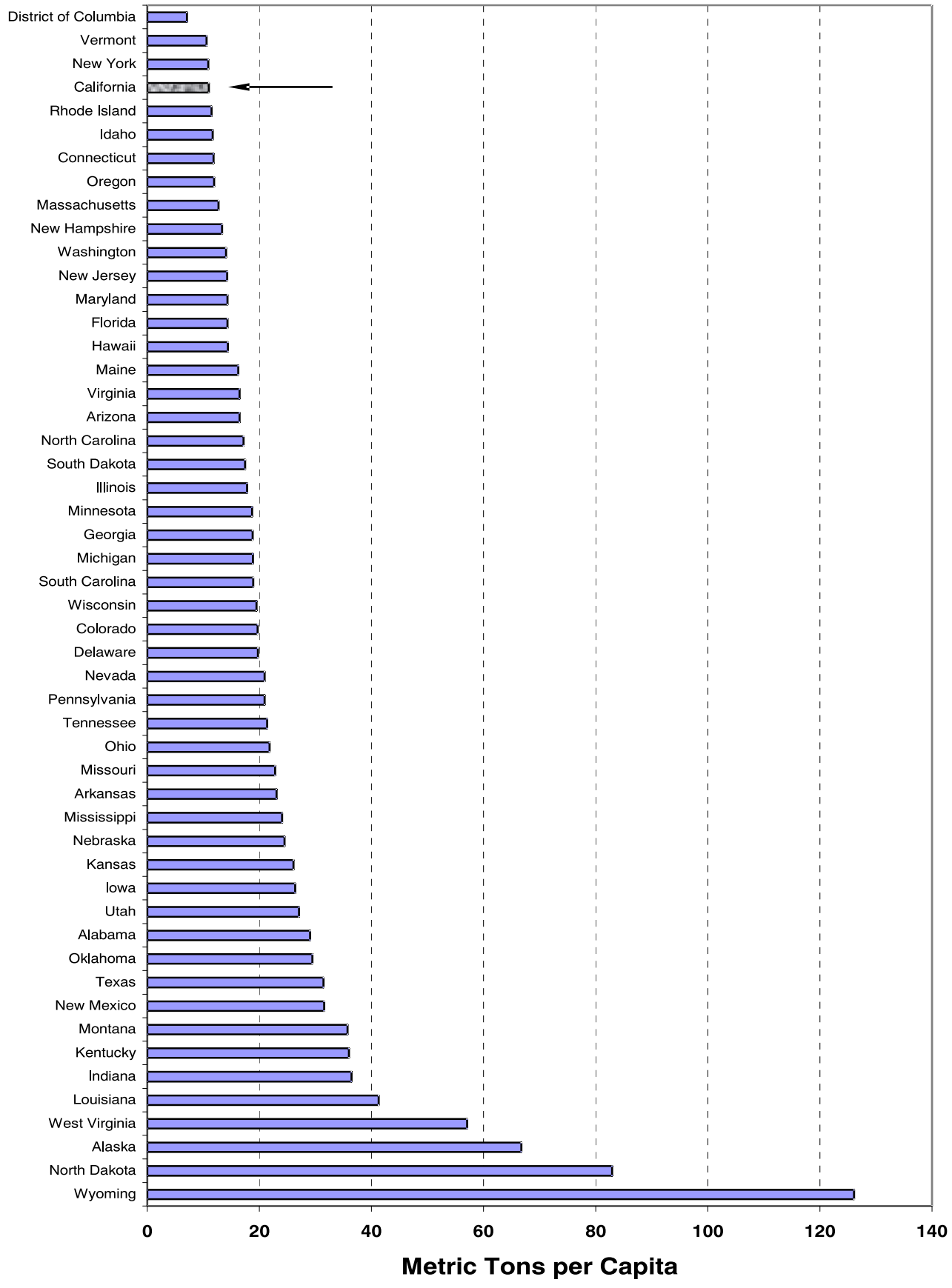



**Figure 4**
**California GHG Emissions by Sector**

Mestre Greve Associates
Landrum & Brown




Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006

# Figure 5 - $CO_2$ Emissions From Fossil Fuels Per Capita (2001)

**Mestre Greve Associates**
**Landrum & Brown**

## 1.5 Regulatory Framework

### 1.5.1 Federal Plans, Policies, Regulations, and Laws.

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Protection Act, 92 Stat. 601, which required the President to establish a program to "assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications." The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. EPA to propose a "coordinated national policy on global climate change," and ordered the Secretary of State to work "through the channels of multilateral diplomacy" to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

More recently, in *Massachusetts v. EPA* (April 2, 2007), the United State Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant," and directed the EPA to consider whether GHGs are causing climate change. If so, the EPA must regulate GHG emissions from automobiles under the Clean Air Act.

While EPA has not finalized a regulation, it did issue a proposed rule on April 17, 2009. The rule declared that GHGs endanger human health and is the first step to regulation through the federal Clean Air Act. If it becomes final, the EPA would define air pollution to include the six key GHGs – $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$.

In addition, Congress has increased the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President Bush signed a bill raising the minimum average miles per gallon for cars, sport utility vehicles, and light trucks to 35 miles per gallon by 2020. This increase in CAFE standard will create a substantial reduction in GHG emissions from automobiles, which is the largest single emitting GHG sector in California.

As of this writing, however, there are no adopted federal plans, policies, regulations or laws setting a mandatory limit on GHG emissions. Further, the EPA has not finalized its evaluation in the wake of *Massachusetts v. EPA*.

### 1.5.2 California State Plans, Policies, Regulations, and Laws.

California has distinguished itself as a national leader in efforts to address global climate change by enacting several major pieces of legislation, engaging in multi-national and multi-state collaborative efforts, and preparing a wealth of information on the impacts associated with global climate change.

In November 2008, the Governor issued Executive Order S-13-08 directing state agencies to plan for sea level rise and other climate change impacts. There are four key actions in the Executive Order: (1) initiation of a climate change adaptation strategy that will assess the state's expected climate change impacts where the state is most vulnerable, with recommendations by early 2009; (2) an expert panel on sea level rise will inform state planning and development efforts; (3) interim guidance to state agencies on planning for sea level rise in coastal and floodplain areas for new projects; and (4) initiation of a report on critical existing and planned infrastructure projects vulnerable to sea level rise. (http://gov.ca.gov/executive-order/11036/)

Pursuant to AB 32, the California Air Resources Board ("CARB") has adopted a number of relevant policies and directives. In December 2008, the Scoping Plan was adopted. The Plan is a central requirement of the statute. In addition, it has adopted a number of protocols for

industry and government sectors, including one for local government (http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm). (See also, the Local Government Toolkit (http://www.coolcalifornia.org/local-government).

In response to SB 97, the Office of Planning and Research ("OPR") issued a Technical Advisory on CEQA and Climate Change in June 2008. The Advisory provides an outline of what should be included in a GHG analysis under CEQA (http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf). In January 2009, OPR issued draft amendments to the CEQA Guidelines that address GHGs. Among the amendments are the following:

- Determining the Significance of Impacts from Greenhouse Gas Emissions (Guidelines § 15064.4);
- Thresholds of Significance (Guidelines ¤ 15064.7(c));
- Discussion of Cumulative Impacts (Guidelines ¤ 15130(a)(1)(B) and Guidelines § 15130(f));
- Tiering and Streamlining the Analysis of Greenhouse Gas Emissions (Guidelines § 15183.5);

*Assembly Bill 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.).* In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. In general, AB 32 directs the California Air Resources Board ("CARB") to do the following:

- On or before June 30, 2007, CARB shall publish a list of discrete early action measures for reducing GHG emissions that can be implemented by January 1, 2010;
- By January 1, 2008, establish the statewide GHG emissions cap for 2020, based on CARB's calculation of statewide GHG emissions in 1990 (an approximately 25 percent reduction in existing statewide GHG emissions);
- Also by January 1, 2008, adopt mandatory reporting rules for GHG emissions sources that "contribute the most to statewide emissions" (Health & Safety Code § 38530);
- By January 1, 2009, adopt a scoping plan that indicates how GHG emission reductions will be achieved from significant GHG sources through regulations, market mechanisms, and other strategies;
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020; and
- On January 1, 2012, CARB's GHG emissions regulations become operative.
- On January 1, 2020, achieve 1990 levels of GHG emissions.

In a December 2006 report, CARB estimated that California emitted between 425 and 468 million metric tons of $CO_2$ in 1990. In December 2007, CARB finalized 1990 emissions at 427 million metric tons of $CO_2$. In the August 2007 draft report, CARB estimated California emitted approximately 480 million metric tons of $CO_2$ in 2004. Based on the U.S. Census Bureau California 2007 population of 36,553,215, this would result in about 13 metric tons of $CO_2$ per capita.

AB 32 takes into account the relative contribution of each source or source category to protect adverse impacts on small businesses and others by requiring CARB to recommend a *de minimis* (minimal importance) threshold of GHG emissions below which emissions reduction requirements would not apply. AB 32 also allows the Governor to adjust the deadlines mentioned above for individual regulations or the entire state to the earliest feasible date in the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm.

*CARB "Early Action Measures" (June 30, 2007).* On June 21, 2007, CARB approved its early action measures to address climate change, as required by AB 32. The three measures include: (1) a low carbon fuel standard, which will reduce the carbon-intensity in California fuels, thereby reducing total $CO_2$ emissions; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance through the restriction of "do-it-yourself" automotive refrigerants; and (3) increased $CH_4$ (methane) capture from landfills through the required implementation of state-of-the-art capture technologies.

*CARB Mandatory Reporting Regulations (December 2008).* Under AB 32, CARB propounded regulations to govern mandatory greenhouse gas emissions reporting for certain sectors of the economy, most dealing with approximately 94 percent of the industrial and commercial stationary sources of emissions. Regulated entities include electricity generating facilities, electricity retail providers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons of $CO_2$ from stationary source combustion.

*Senate Bill 97 (2007).* By July 1, 2009, the Governor's Office of Planning and Research (OPR) is directed to prepare, develop, and transmit to the Resources Agency amendments to the CEQA Guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by the California Environmental Quality Act. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010. OPR is required to periodically update these guidelines as CARB implements AB 32. In addition, SB 97 states that the failure to include a discussion of greenhouse gas emissions in any CEQA document for a project funded under the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or projects funded under the Disaster Preparedness and Flood Prevention Bond Act of 2006 shall not be a cause of action under CEQA. This last provision was to be repealed on January 1, 2010.

*Executive Order S-01-07 (2007).* Executive Order S-01-07 calls for a reduction in the carbon intensity of California's transportation fuels by at least 10 percent by 2020. As noted above, the low-carbon fuel standard ("LCFS") was adopted by CARB as one of its three "early action measures" on June 21, 2007.

*Senate Bill 1368 (2006) (Public Utilities Code §§ 8340-41).* SB 1368 required the California Public Utilities Commission ("PUC") to establish a "GHG emission performance standard" by February 1, 2007, for all electricity providers under its jurisdiction, including the state's three largest privately-owned utilities. Pub. Res. Code § 8341(d)(1). These utilities provide approximately 30 percent of the state's electric power. After the PUC acted, the CEC adopted a performance standard "consistent with" the PUC performance standard and applied it to local publicly-owned utilities on May 23, 2007 (over one month ahead of its June 30, 2007 deadline). Cal. Pub. Res. Code § 8341(e)(1). However, the California Office of Administrative Law ("OAL") found four alleged flaws in the CEC's rulemaking. The CEC overcame these alleged flaws and adopted reformulating regulations in August 2007.

*Senate Bill 107 (2006).* Senate Bill 107 ("SB 107") requires investor-owned utilities such as Pacific Gas and Electric, Southern California Edison and San Diego Gas and Electric, to generate 20 percent of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017.

*Senate Bill 375 (September 2008).* In September 2008, SB 375 was signed by Governor Schwarzenegger. SB 375 is a comprehensive global warming bill that helps to achieve the goals of AB 32. To help establish these targets, the CARB assigned a Regional Targets Advisory Committee to recommend factors to be considered and methodologies for setting greenhouse gas emission reduction targets. SB 375 also provides incentive – relief from certain CEQA requirements for development projects that are consistent with regional plans that achieve the targets. SB 375 requires CARB to develop, in collaboration with the Metropolitan Planning Organization (MPO), passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. The MPO is required to include and adopt, in their regional transportation plan, a sustainable community strategy that will meet the region's target provided by CARB.

*Western Regional Climate Action Initiative (Arizona, California, New Mexico, Oregon, Utah, Washington)(2007).* Acknowledging that the western states already experience a hotter, drier climate, the Governors of the foregoing states have committed to three time-sensitive actions: (1) by August 26, 2007, to set a regional goal to reduce emissions from the states collectively, consistent with state-by state goals; (2) by August 26, 2008, to develop "a design for a regional market-based multi-sector mechanism, such as a load-based cap and trade program, to achieve the regional GHG reduction goal;" and (3) to participate in a multi-state GHG registry "to enable tracking, management, and crediting for entities that reduce GHG emissions, consistent with state GHG reporting mechanisms and requirements."

*Executive Order S-3-05 (June 1, 2005).* Executive Order S-3-05 calls for a reduction in GHG emissions to 2000 levels by 2010; 1990 levels by 2020; and for an 80 percent reduction in GHG emissions below 1990 levels by 2050. It also directs the California Environmental Protection Agency ("CalEPA") to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy.

*California's Renewable Energy Portfolio Standard Program (2005).* In 2002, California established its Renewable Energy Portfolio Standard Program, which originally included a goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. The state's most recent 2005 Energy Action Plan raises the renewable energy goal from 20 percent by 2017, to 33 percent by 2020.

*Title 24, Part 6, California Code of Regulations (2005).* In 2005, California adopted new energy efficiency standards for residential and nonresidential buildings in order to reduce California's energy consumption. This program has been partially responsible for keeping California's per capita energy use approximately flat over the past 30 years.

*Assembly Bill 1493 (2002) (Health and Safety Code § 43018.5).* Assembly Bill 1493 ("AB 1493") required CARB to develop and adopt the nation's first GHG emission standards for automobiles. Not only have litigants challenged their legality in federal court, but also USEPA denied California's request for a Clean Air Act waiver to implement its regulations. As of this writing, California and other states who seek to adopt California's greenhouse gas emissions standards for automobiles are challenging USEPA's denial in federal court.

*Climate Action Registry (2001).* California Senate Bills 1771 and 527 created the structure of the California Climate Action Registry ("Registry"), and former Governor Gray Davis signed the final version of the Registry's enabling legislation into law on October 13, 2001. These bills establish the Registry as a non-profit entity to help companies and organizations establish GHG emissions baselines against which future GHG emission reduction requirements could be applied. Using any year from 1990 forward as a base year, participants can record their annual GHG emissions with the Registry. In return for this voluntary action, the State of California promises to offer its "best efforts" to ensure that participants receive consideration for their early action if they are subject to any future state, federal, or international emissions regulatory scheme.

### 1.5.3 South Coast Air Quality Management District Plans, Policies, Regulations and Laws.

The South Coast Air Quality Management District ("SCAQMD") adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" in April 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and,
- Support the adoption of a California GHG emission reduction goal.

The legislative and regulatory activity detailed above is expected to require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.

### 1.5.4 University of California Irvine Plans, Policies, Regulations, and Laws

The University of California, Irvine adopted its climate action and sustainability plan entitled "Achieving Net Zero: Climate Change & Sustainability" in June 2009 which is compliant with the emissions reductions defined in AB32. The goals presented in the plan include the University achieving 2000 GHG emissions levels by 2012, 1990 GHG emissions levels by 2020, and 80% below 1990 GHG emissions levels by 2050 with a commitment to achieve climate neutrality as soon as possible. An aggressive portfolio of over 250 energy efficiency projects to reduce greenhouse gas emissions are identified in the Plan including lighting retrofits, refrigerator replacements, computer power management software, and monitoring based commissioning projects. In addition, the plan includes an expansion of the campus' use of more low carbon renewable energy sources in its energy infrastructure.

Transportation emissions will be reduced through a variety of means including a new bike sharing program and increased participation in alternative transportation modes. Lastly, emissions reductions will be achieved through educational programs geared towards behavioral change. On the road to climate-neutrality, UCI will use renewable energy certificates and offsets

when all possible direct actions have been exhausted. UCI will adjust the climate action plan accordingly as the campus continues to identify new strategies to meet its emissions reduction targets. Goals identified in the plan that are directly applicable to the project include:

- Build all new construction (except laboratory and acute-care facilities) to a minimum standard equivalent to LEED Silver. Laboratories will be built to a minimum standard equivalent to LEED 2.1 certified.
- All new building projects, other than acute care facilities, will outperform the required provisions of the California Energy Code (Title 24) energy-efficiency standards by 20 percent or more.
- New buildings employ materials, systems, and design features that will be long lasting and avoid the expense of major maintenance (defined as greater than one percent of the value) for twenty years.

In July 2003 the University of California adopted the Policy on Sustainable Practices to be implemented system-wide within the University's campuses, including UCI. Since then, the policy has been updated several times, most recently in September 2009. The document contains eight sustainability categories which include policies to address GHG emissions. Policy highlights from each of the eight categories follow:

**Green Building Design**

- New buildings (other than acute care) shall outperform Title 24 energy efficiency standards by 20% and strive to outperform by 30%.
- New buildings shall achieve LEED-New Construction (NC) "Silver" Rating and strive to achieve LEED-NC "Gold" rating.
- New buildings shall achieve at least two of the available credits in LEED-NC's Water Efficiency Category and cooperate with local water districts to conserve water and meet district water use reduction goals.
- The measures required by the Policy Guidelines will be incorporated into all new building projects, other than acute care facilities, submitted for first formal scope and budget approval as of July 1, 2009.

**Clean Energy Standards:**

- Implement a system wide portfolio approach to reduce consumption of nonrenewable energy including a combination of energy efficiency projects, the incorporation of local renewable power measures for existing and new facilities, green power purchases from the electrical grid, and other energy measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage.
- Strive to achieve a level of grid-provided electricity purchases from renewable sources that will be similar to the State's Renewable Portfolio Standard, which sets a goal of procuring 20 percent of its electricity needs from renewable sources by 2010.
- Develop a strategic plan for siting renewable power projects in existing and new facilities with a goal of providing up to 10 megawatts of local renewable power by 2014.
- Develop a strategic plan for implementing energy efficiency projects for existing buildings and infrastructure to include operational changes and the integration of best

practices with a goal of reducing system-wide growth-adjusted energy consumption by 10% or more by 2014 from the year 2000 base consumption level.

- Pursue marketing of emission credits as a means to bridge the cost-feasibility gap for green power projects

**Climate Protection Practices:**

- Each campus will pursue individual membership with either the California Climate Action Registry (CCAR) or The Climate Registry (TCR) and form a Climate Change Working Group to monitor progress towards reaching GHG reduction goals and evaluate programs to reach these goals.
- Each campus will complete a greenhouse gas emissions inventory that will be updated at least once every other year.
- Develop an action plan for becoming climate neutral.
- By September 15, 2009 each campus will implement seven of the tangible actions to reduce GHG emissions that are outlined in the ACUPCC.

**Sustainable Transportation Practices:**

- Facilitate sharing of best practices within the university and among other educational institutions
- Develop mechanism for ongoing involvement of students in efforts for achieving sustainable campus transportation.
- Implement pre-tax transit pass program for employees.
- Pursue the expansion of Transportation Demand Management (TDM) programs including carshare, carpools, vanpools, buspools, campus shuttles, transit, bicycle circulation system, pedestrian circulation system, emergency rides home, telecommuting, flexible schedules, and parking management.

**Sustainable Operations:**

- Develop a plan to operate and maintain all scope eligible existing buildings at a LEED for Existing Buildings Operations and Maintenance (LEED-EBOM) "Certified" Rating in a comprehensive campus approach.
- Work closely with the U.S. Green Building Council (USGBC) to address the needs and concerns of campuses in the further development of LEED-EBOM rating system and the USGBC's "Portfolio Program"

**Recycling and Waste Management:**

- Develop an Integrated Waste Management Plan (IWMP) with the following waste diversion goals: 50% by June 30, 2008, 75% by June 30, 2012, and ultimate goal of zero waste by 2020.
- Incorporate waste reduction and recycling elements in Green Building Design and Sustainable Operations implementation goals and campus operations as they are developed.

**Environmentally Preferable Purchasing Practices:**

- Utilize University purchasing power and academic and research excellence to advance the development of sustainable technologies by pressing markets to continually improve resource productivity.
- For products and services that do not currently offer environmentally preferable alternatives, the University will work with its existing and potential suppliers to develop options.
- Continue to transition all locations toward electronic and paperless processes and utilize web-based catalogs and programs.
- Focus procurement efforts only on products with ENERGYSTAR ratings where available.
- Adopt a minimum standard of 30% Post Consumer Waste (PCW) recycled content paper for office supplies and 100% PCW recycled content paper for uncut paper uses including but not limited to janitorial supplies.
- Achieve Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT) for all desktop computers, laptops, and computer monitors purchased by the University. Provide additional consideration for electronics products that have achieved EPEAT Silver or EPEAT Gold registration.
- Recycle all electronic waste in a responsible manner.
- Require take-back program be offered for packaging of electronics products.
- Incorporate the Environmentally Preferable Purchasing Policy into existing strategic sourcing and other training programs. Provide training seminars, supplier fairs, and workshops on purchasing environmentally preferred products and establish educational programs and materials.

**Campus Foodservice Operations:**

- Achieve goal of procuring 20% sustainable food products by the year 2020 for Campus Foodservice Operations.
- Provide student patrons sustainable food options as well as access to educational materials that will help support their food choices.
- Engage in activities with surrounding community that support common goals regarding sustainability.
- Explore the use of third-party "green business" certifications for sustainable dining operations. If cost effective, each campus will certify one facility by December 2010 through one of the following: (1) City or county's "green business" program, (2) Green Seal's Restaurants and Food Services Operations certification program, or (3) the Green Restaurant Association certification program.

# 2.0 Potential Greenhouse Gas Impacts

## 2.1 Significance Thresholds

At this time, a widely accepted threshold for determining the significance of GHG emissions has not been established. Both CARB and SCAQMD have been working to establish significance thresholds for GHG impacts and have published draft thresholds for review and comment, but no significance thresholds applicable to general projects have been adopted by these agencies. Section 2.1.1 discusses CARB's significance threshold development and section 2.1.2 discusses SCAQMD's significance threshold development. These proposed thresholds will be used as guidance in a qualitative assessment of the project's GHG impact potential.

### 2.1.1 California Air Resource Board Significance Thresholds

The CARB is the lead agency for implementing AB 32. In October 2008, CARB published a Proposed Scoping Plan, in coordination with the Climate Action Team (CAT), to establish a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California. The measures in the Scoping plan approved by the Board will be developed over the next two years and be in place by 2020. California is the fifteenth largest emitter of GHGs on the planet, representing about 2 percent of the worldwide emissions. According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from today's levels to stabilize the amount of $CO_2$ in the atmosphere and prevent the most severe effects of global climate change. This long-range goal is reflected in California Executive Order S-3-05 that requires an 80 percent reduction of greenhouse gases from 1990 levels by 2050. Reducing GHG emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of $CO_2$ equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

The scoping plan asserts that significant progress can be made toward the 2020 goal using existing technologies, and improving the efficiency of energy use. Other solutions involve improving our state's infrastructure, transitioning to cleaner and more secure sources of energy, and adopting 21st century land use planning and development practices. Key elements of California's recommendations for reducing its greenhouse gas emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long term commitment to AB 32 implementation.

- CARB anticipated 5 million metric tons of $CO_2$ equivalent (MMT $CO_2EQ$) reduction for Regional Transportation-Related Greenhouse Gas Targets.

To meet the 1990 target established by AB 32, CARB recommends a de minimis (minimal importance) emission threshold of 0.1 MMT annual (100,000 MT per year) $CO_2EQ$ per transportation source category. Source categories whose total aggregated emissions are below this level are not proposed for emission reduction requirements in the Scoping Plan but may contribute toward the target via other means. As each regulation to implement the Scoping Plan is developed, CARB and other agencies will consider more specific de minimis levels below which the regulatory requirements would not apply. These levels will consider the cost to comply, especially for small businesses, and other factors. Until approved thresholds and guidelines are adopted at the local and regional level, the proposed de minimis threshold of 100,000 MT $CO_2EQ$ per year for transportation sources will be utilized for transportation sources.

In addition to the Proposed Scoping Plan, CARB released the Preliminary Draft Staff Proposal (Staff Proposal) on October 24, 2008 with the objective of developing interim significant thresholds for commercial and residential projects. CARB has proposed a threshold of 7,000 annual MT for industrial operational sources but this threshold has not been adopted. At this time, CARB has not proposed thresholds applicable for residential and commercial sources. Therefore, criteria for determining threshold levels for residential and commercial sources have yet to be defined. Under CARB's Staff Proposal, recommended approaches for setting interim significant thresholds for GHG under the CEQA are underway. CARB staff proposes to define certain performance standards (e.g., for energy efficiency) by referencing or compiling lists from existing local, state or national standards. For some sub-sources of GHG emissions (e.g., construction, transportation, waste), CARB staff has not identified reference standards.

The Staff Proposal's Potential Performance Standards and Measures were released in December 2008. Inside the Staff Proposal, CARB's Potential Performance Standard and Measures included some construction measures. These guideline measures are:

- Provide alternative transportation mode options or incentives for workers to and from worksite on days that construction requires 200 or more workers; and
- Recycle and/or salvage at least 75% of non-hazardous construction and demolition debris by weight (residential) or by weight in volume (commercial); and
- Use recycled materials for at least 20% of construction materials based on cost for building materials, based on volume for roadway, parking lot, sidewalk and curb material. Recycled materials may include salvaged, reused, and recycled content materials.

CARB's Staff Proposal has identified California Energy Commission's (CEC) Tier II Energy Efficiency goals as an appropriate performance standard for energy use. Under State Law, the CEC is required to establish eligibility criteria, conditions for incentives, and rating standards. Thus, the CEC established energy efficiency standards for homes and commercial structures, and requires new buildings to exceed current building standards by meeting Tier Energy Efficiency goals. Currently, CEC's proposed guidelines for the solar energy incentive program recommend a Tier II goal for residential and commercial projects of a 30% reduction in building combined space heating, cooling, and water heating energy compared to the 2008 Title 24 standards.

Existing green building rating systems like LEED, GreenPoint Rated, the California Green Building Code, and others, contain examples of measures that are likely to result in substantial GHG emission reductions from residential and commercial projects. Performance standards that already exist and have been proven to be effective, at the local, state, national or international level, are preferable. For residential and commercial projects, CARB staff has proposed that the GHG emissions of some projects that meet GHG performance standards might under some circumstances still be considered cumulatively considerable and therefore significant. However, criteria threshold for residential and commercial has yet to be developed.

### 2.1.2 SCAQMD's Significance Thresholds

On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) adopted GHG significance threshold for Stationary Sources, Rules and Plans where the SCAQMD is lead agency. The threshold uses a tiered approach. The project is compared with the requirements of each tier sequentially and would not to result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. For industrial stationary source projects, the SCAQMD adopted a screening threshold of 10,000 MT $CO_2$EQ/year. This threshold was selected to capture 90% of the GHG emissions from these types of projects where the combustion of natural gas is the primary source of GHG emissions. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact. Tier 4 consists of three decision tree options. Under the first option, the project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. Under the second option, the project would be excluded if it had early compliance with AB 32 through early implementation of CARB's Scoping Plan measures. Under the third option, project would be excluded if it met sector based performance standards. However, the specifics of the Tier 4 compliance options were not adopted by the SCAQMD board to allow further time to develop the options and coordinate with CARB's GHG significance threshold development efforts. Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level

While not adopted by the SCAQMD Board, the guidance document prepared for the stationary source threshold (SCAQMD 2008b) also suggested the same tiered approach for residential and commercial projects with a 3,000 MT$CO_2$EQ/year screening threshold. However, at the time of adoption of the industrial stationary source threshold the SCAQMD felt additional analysis was required along with coordination with CARB's GHG significance threshold development efforts.

At the most recent SCAQMD GHG working group meeting (November, 2009), SCAQMD staff presented two options for screening thresholds for residential and commercial projects. The first option would have different thresholds for specific land uses. The proposed threshold for residential projects is 3,500 MT $CO_2$EQ/year, the commercial threshold is 1,400 MT $CO_2$EQ/year, and the mixed-use threshold is 3,000 MT $CO_2$EQ/year. The second option would apply the 3,000 MT $CO_2$EQ/year screening threshold for all commercial/residential projects. Lead agencies would be able to select either option. These thresholds are based on capturing 90% of the emissions from projects and requiring them to comply with the higher tiers of the threshold (i.e., performance requirements or GHG reductions outside of the project) to not result in a significant impact.

Staff also presented updated for compliance options for Tier 4 of the significance thresholds. The first option would be a reduction of 23.9% in GHG emissions over the base case. This percentage reduction represents the land use sector portion of the CARB Scoping Plan's overall reduction of 28%. This target would be updated as the AB 32 Scoping Plan is revised. The base case scenario for this reduction still needs to be defined. Residual emissions would need to be less than 25,000 MT $CO_2EQ$/year to comply with the option. Staff proposed efficiency targets for the third option of 4.6 MT $CO_2EQ$/year per service population (population employment) for project level analysis and 6.6 MT $CO_2EQ$/year for plan level analyses. For project level analyses, residual emissions would need to be less than 25,000 MT $CO_2EQ$/year to comply with this option.

For this project the 3,000 MT $CO_2EQ$ per year screening threshold will be used for the significance threshold for this project. The methodology recommends that total construction emissions be amortized over a 30-year period or the project's expected lifetime if it is less than 30 years. The SCAQMD's working group has not set a date for finalizing the recommendations.

## 2.2 Project Emissions Calculation Methodology

GHG emissions during construction and operation of the project were estimated using the methodologies presented below. Section 2.2.1 presents the methodologies used to estimate construction related GHG emissions and Section 2.2.2 presents the methodologies used to estimate operational GHG emissions.

### 2.2.1 Construction Emissions

The CalEEMod program (version 2013.2.2) was used to calculate the emissions from the associated with construction of the project. CalEEmod is a computer model developed by a group of California air districts that uses emission factors from CARB's EMFAC2011 model for on-road vehicle emission estimates and emission factors from CARB's OFFROAD model for off-road vehicle and equipment emission estimates. The sources of GHG emissions during construction include off-road construction vehicles and equipment, on-road haul trucks, and employee vehicles.

A description of the general construction activities and the equipment expected to be utilized for these activities was provided by the project applicant and are described in detail in the following section.

#### *2.2.1.1 Construction Activities*

Construction of the proposed UNEX Expansion building is anticipated to begin the first week of March 2015 and take approximately 24 months to complete. Site preparation including the demolition of the existing hardscape and parking lot is anticipated to take two months. Site excavation and grading is anticipated to take one month and will result in the export of approximately 5,000 cubic yards of earth material. Construction of the building is anticipated to take 21 months to complete with painting occurring during the last two months of constriction

Delays in the start for each phase of construction would not significantly affect emission estimates. In fact, the CalEEMod program includes a reduction in on-road and off-road vehicle exhaust emissions each year to account for new construction equipment and on-road vehicles manufactured under stricter emission standards becoming a larger part of the construction fleet (a fleet average emission factor is used to estimate emissions). Therefore, for emissions modeling purposes, a delay moving the activity into the following year would actually result in a slight

reduction in the exhaust emissions estimates. Lengthening the duration of each activity would result in the same or lower daily emissions as daily activity levels for emission sources would either not change or decrease as the work is spread out over a longer period. A shortening of any of the construction activities assumed could result in higher emissions and would require a re-analysis of the emission impacts.

The following paragraphs describe the activity assumptions used to calculate emissions for each of the construction activities discussed above. The CalEEMod input and output files are available upon request.

*Demolition* is the demolition of the existing parking lot and hardscape in preparation of building construction. This work will occur over the entire project site and is estimated to take eight weeks. The demolition is anticipated to generate approximately 5,000 cubic yards of material that will be removed from the site. The emissions calculation includes just over on daily haul truck trips with a round trip distance of 20 miles to remove the debris. Equipment assumed to be used during grading includes (1) concrete/industrial saw, (1) rubber tired dozer, and (3) tractor/loader/backhoes. The CalEEMod default assumptions were used to estimate emissions from worker trips.

*Excavation/Grading* is the excavation and grading of project site in preparation of building construction. This work will occur over the entire project site and is estimated to take four weeks. The project will require the export of approximately 5,000 cubic yards of material. The emissions calculation includes 14 daily haul truck trips with a round trip distance of 20 miles for the exported materials. Equipment assumed to be used during grading includes (1) grader, (1) rubber tired dozer, and (1) tractor/loader/backhoe. The CalEEMod default assumptions were used to estimate emissions from worker trips.

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

*Architectural Coating* is the painting of the new building. Architectural coating emissions were estimated utilizing the CalEEMod default assumptions.

### 2.2.2 Operational Emissions

The primary source of GHG emissions generated by the proposed project will be from motor vehicles. Other emissions from the project will be generated from the combustion of natural gas for space and water heating, as well as off-site GHG emissions from the generation of electricity consumed by the project.

Air pollutant emissions due to the project were calculated using the CalEEMod program (version 2013.2.2). To determine emissions with the project, the program was set to calculate emissions for a 70,000 square foot office on a 1 acre site. Default CalEEMod variables were used for the calculations except the trip generation rate. The traffic evaluation for the Project (Letter from Ms. Maria Manalili, PTP, Transportation Planner, Stantec Consulting Services Inc., "Proposed University Extension Classrooms (UEC) Project Traffic Evaluation," dated May 1, 2014) determined that the project would generate 184 additional daily trips. This trip generation rate was used to estimate vehicular GHG emissions due to the Project.

Operational emissions were calculated for the opening year of the project, 2017. Vehicular emissions are projected to decrease in future years (as projected by EMFAC2011). Therefore, emissions during the first year are the highest emissions from the project during its lifespan.

The appendix presents a summary of the CalEEMod inputs used to estimate the operational emissions. The CalEEMod input output files showing the specific data utilized in calculating the emissions due to the project are available upon request.

# 3.0 Estimate of Project Greenhouse Gas Emissions

Using the methodologies discussed in Section 2.2, greenhouse gas emissions associated with the project were calculated and are presented below. Emissions associated with construction activities are presented in Section 3.1. Operational emissions are presented in Section 3.2.

## 3.1 Construction Emissions

Using the methodologies described in Section 2.2.1, $CO_2$ emissions during construction of the project were calculated and are presented in Table 3. The total annual metric tons of $CO_2EQ$ emissions for each construction activity are presented.

**Table 3**
**Total Construction $CO_2$ Emissions**

| Activity | Annual Emissions (MT/Year) | | | |
|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_20$ | $CO_2EQ$ |
| Demolition | 57.6 | 0.01 | 0.00 | 57.9 |
| Grading | 42.9 | 0.01 | 0.00 | 43.1 |
| Building Construction (2014) | 227.8 | 0.05 | 0.00 | 228.8 |
| Building Construction (2015) | 390.4 | 0.08 | 0.00 | 392.1 |
| Building Construction (2016) | 66.5 | 0.01 | 0.00 | 66.8 |
| Painting | 6.6 | 0.00 | 0.00 | 6.6 |
| **Total Emissions** | **791.8** | **0.17** | **0.00** | **795.3** |
| **Project Life Average Annual Construction Emissions*** | **26.4** | **0.01** | **0.00** | **26.5** |

*Based on 30 Year Project Life Per SCAQMD Significance Thresholds

Table 3 also shows the project lifetime average annual construction emissions. The SCAQMD GHG guidance recommends that construction emissions be amortized over a 30-year project lifetime and added to the operational emissions to determine significance. This is done in the next section.

## 3.2 Operational Emissions

The impact of the proposed project is measured against the net increase in emissions that will result from the implementation of the project. Using the methodologies described in Section 2.2, the greenhouse GHG emissions associated with the project were calculated. The results of this analysis are presented in Table 4. Table 4 presents the total project $CO_2$ emissions estimated for the opening year of the project (2017). The annualized construction emissions are added to the operational emissions to give the total increase in annualized emissions due to the project.

**Table 4**
**Annual Project $CO_2$ Emissions**

| Activity | Annual Emissions (MT/yr) $CO_2$ | $CH_4$ | $N_20$ | $CO_2EQ$ |
|---|---|---|---|---|
| Vehicular Emissions | 238.4 | 0.01 | 0.00 | 238.6 |
| Natural Gas Combustion | 35.8 | 0.00 | 0.00 | 36.0 |
| Electricity | 312.9 | 0.01 | 0.00 | 314.1 |
| Landscaping | 0.0 | 0.0 | 0.0 | 0.0 |
| Consumer Products | 0.0 | 0.0 | 0.0 | 0.0 |
| Architectural Coatings | 0.0 | 0.0 | 0.0 | 0.0 |
| Municipal Waste | 13.2 | 0.8 | 0.0 | 29.6 |
| Water | 74.5 | 0.4 | 0.0 | 86.3 |
| **Total Emissions** | **674.9** | **1.2** | **0.0** | **704.7** |
| Annualized Construction Emissions | 26.4 | 0.0 | 0.0 | 26.5 |
| **Total Annual Project Emissions** | **701.3** | **1.2** | **0.0** | **731.2** |
| | | **Screening Threshold:** | | **3,000** |
| | | **Exceed Threshold?** | | **No** |

## 3.3 Impacts From Project

The analysis presented above shows that the net increase in GHG emissions due to the project are below the SCAQMD suggested screening level significance threshold of 3,000 metric tons per year. Thus, no project specific mitigation measures are required to construct the project. Additionally, as discussed in Section 1.5.4, UCI implements a climate action plan, which is compliant with AB 32 (described in Section 1.5.2,), and policies contained in the University of California Policy on Sustainable Practices to further reduce GHG emissions on the campus. The proposed project would also incorporate project relevant specific policies contained in these plans. Therefore, the project will not considerably contribute to significant cumulative impacts associated with global climate change due to GHG emissions or interfere with California's ability to achieve its GHG reduction goals.

## 4.0 References

California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, December 2006.

Edmund G. Brown, Jr., Attorney General, State of California, *Comments on Draft Environmental Impact Report for Coyote Valley Specific Plan*, June 19, 2007.

Michael Hendrix et. al., *Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, Association of Environmental Professionals, Revised Draft April 27, 2007.

University of New South Wales, Sydney Australia Recycled Organics Unit (ROU), *Life Cycle Inventory and Life Cycle Assessment for Windrow Composting Systems*, 2007

State of California, *Climate Change Portal*, http://www.climatechange.ca.gov/index.html.

United Nations Statistics Division, *Environment Indicators: Greenhouse Gas Emissions*, http://unstats.un.org/unsd/ENVIRONMENT/air_greenhouse_emissions.htm.

United Nations Framework Convention on Climate Change, *National Greenhouse Gas Inventory Data for the Period 1990–2006 and Status of Reporting*, November 17, 2008.

United Nations Framework Convention on Climate Change, *Sixth compilation and synthesis of initial national communications from Parties not included in Annex I to the Convention*, October 25, 2005.

U.S. Environmental Protection Agency, *The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts*, April 2007.

U.S. Environmental Protection Agency, *Climate Change*, http://epa.gov/climatechange/index.html.

U.S. Environmental Protection Agency, *AP 42, Fifth Edition Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, http://www.epa.gov/ttn/chief/ap42/.

U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005*, April 15, 2007.

California Air Resource Board, *Climate Change Proposed Scoping Plan*, October 2008.

California Air Resource Board, *Staff Proposal-Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the CEQA*, December 2008.

California Air Resource Board, *Preliminary Draft Staff Proposal- Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the CEQA*, October 24,2008.

SCAQMD, *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*, December 5, 2008

State of California Department of Water Resources (DWR), *Climate Change Adaptation Strategies for California's Water*, October 2008

# Appendix

**CalEEMod Operational Input Summary**

# CalEEMod Input Summary - Land Use & Vehicular Trips

## Project Characteristics

| | |
|---|---|
| **File Name:** | UCI_UNEX.xls |
| **Project:** | UCI UNEX Expansion |
| **Year:** | 2017 |
| **Size:** | 1.0 Acres |
| **Population:** | 0 |
| **Location:** | ORA |
| **Climate Zone:** | 8 |
| **Urbanization:** | Urban |
| **Wind Speed:** | 2.2 m/s |
| **Precipitation:** | 30 days/year |
| **Utility:** | Southern California Edison |
| **$CO_2$:** | 630.89 lb/MWhr |
| **$CH_4$:** | 0.029 lb/MWhr |
| **$N_2O$:** | 0.006 lb/MWhr |

## Land Use Information

| | | |
|---|---|---|
| **Category:** | Commercial | 0 |
| | General Office | 0 |
| **Land Use:** | Building | |
| **Units:** | 70 1000sqft | |
| **Lot Size:** | 1.0 Acres | 0.0 Acres |
| **Bulding Size** | 70,000 sq. ft. | 0 sq. ft. |
| **Population:** | 0 | 0 |

## Vehicle Miles Traveled

| **Daily** | **VMT** | **VMT** | **Total** |
|---|---|---|---|
| Home-Work: | 0 | 0 | 0 |
| Home-Shop | 0 | 0 | 0 |
| Home-Other | 0 | 0 | 0 |
| Comm-Cust: | 616 | 0 | 616 |
| Comm-Work: | 837 | 0 | 837 |
| Comm-NonWork: | 200 | 0 | 200 |
| **Total:** | **1,654** | **0** | **1,654** |
| | | | |
| **Annual** | **603,745** | **0** | 603,745 |

# CalEEMod Input Summary - Land Use & Vehicular Trips

**File Name:** UCI_UNEX.xls
**Project:** UCI UNEX Expansion

## Trip Generation

| **Trip Rate** | | | |
|---|---|---|---|
| Weekday: | 2.67 / 1000sqft | / | |
| Saturday: | 2.67 / 1000sqft | / | |
| Sunday: | 2.67 / 1000sqft | / | |
| **Daily Trips:** | | | **Total** |
| Weekday: | 187 | 0 | 187 |
| Saturday: | 187 | 0 | 187 |
| Sunday: | 187 | 0 | 187 |
| Average: | 187 | 0 | 187 |

## Trip Type

| **Trip Purpose** | | |
|---|---|---|
| Primary: | 77% | 0% |
| Diverted: | 19% | 0% |
| Pass By: | 4% | 0% |
| **Origin-Destination** | | |
| Home-Work: | 0% | 0% |
| Home-School: | 0% | 0% |
| Home-Office: | 0% | 0% |
| Comm-Cust: | 48% | 0% |
| Comm-Work: | 33% | 0% |
| Comm-NonWork: | 19% | 0% |

## Trip Length

| **Trip Length Basis** | | |
|---|---|---|
| Home-Work: | 0.00 | 0.00 |
| Home-School: | 0.00 | 0.00 |
| Home-Office | 0.00 | 0.00 |
| Comm-Cust | 8.40 | 0.00 |
| Comm-Work | 16.60 | 0.00 |
| Comm-NonWork | 6.90 | 0.00 |
| **Modeled Trip Length** | | |
| Home-Work: | 0.00 | 0.00 |
| Home-School: | 0.00 | 0.00 |
| Home-Office: | 0.00 | 0.00 |
| Comm-Cust: | 6.87 | 0.00 |
| Comm-Work: | 13.57 | 0.00 |
| Comm-NonWork: | 5.64 | 0.00 |

# CalEEMod Input Summary - Operational Emissions

**File Name:** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Electicity and Natural Gas

| | General Office Building | 0 |
|---|---|---|
| **Electrical Use (kWhr/size/year)** | | |
| Title 24: | 6 | 0 |
| Non-Title 24: | 5 | 0 |
| Lighting: | 5 | 0 |
| **Total:** | **16** | **0** |
| **Natural Gas (kBTU/size/year)** | | |
| Title 24: | 9 | 0 |
| Non-Title 24: | 1 | 0 |
| **Total:** | **10** | **0** |

## Water & Wastewater

| | General Office Building | 0 |
|---|---|---|
| **Water Use (gal/yr)** | | |
| Indoor: | 12,441,362 | 0 |
| Outdoor: | 7,625,351 | 0 |
| **Total:** | **20,066,713** | **0** |
| **Electricity Intensity (kWhr/Mgal)** | | |
| Supply: | 9,727 | 0 |
| Supply Treat: | 111 | 0 |
| Distribute: | 1,272 | 0 |
| Waste Treat: | 1,911 | 0 |
| **Total:** | **11,638** | **0** |
| **Waste Disposal** | | |
| Septic Tank: | 10.3% | 0.0% |
| Aerobic: | 87.5% | 0.0% |
| Anerobic | | |
| *Lagoon:* | *2.2%* | *0.0%* |
| *w/ Combust:* | *100.0%* | *0.0%* |
| *w/ Cogen:* | *0.0%* | *0.0%* |

## Architectural Coatings

| | Interior | Exterior |
|---|---|---|
| **Residential** | | |
| Size: | 0 sq. ft. | 0 sq. ft. |
| Rate: | 50 g/L | 100 g/L |
| **Commercial** | | |
| Square Feet: | 105,000 sq. ft. | 35,000 sq. ft. |
| Emission Factor: | 250 g/L | 250 g/L |
| | **Reapplication Rate** | **10.0%** |

# CalEEMod Input Summary - Operational Emissions

**File Name:** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Fireplace

| | General Office Building | 0 |
|---|---|---|
| **Number of Units With:** | | |
| Wood: | 0 | 0 |
| Gas: | 0 | 0 |
| Propane: | 0 | 0 |
| None: | 0 | 0 |
| **Use** | | |
| Hrs/day: | 0.00 | 0.00 |
| Days/Year: | 0 | 0 |
| Wood Mass: | 0 | 0 |

## Wood Stoves

| | General Office Building | 0 |
|---|---|---|
| **Number of Units With:** | | |
| Conventional: | 0 | 0 |
| Catalytic: | 0 | 0 |
| Non-Catalytic: | 0 | 0 |
| Pellet: | 0 | 0 |
| **Use** | | |
| Days/Year: | 0.00 | 0.00 |
| Wood Mass: | 0 | 0 |

## Consumer Products

| | |
|---|---|
| Emission Factor: | 1.98E-05 g VOC/sqr ft |

## Landscape Equipment

| Snow Days | Summer Days |
|---|---|
| 0 | 250 |

# CalEEMod Input Summary - Operational Mitigation

**File** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Land Use Mitigation

| | |
|---|---|
| **Project Setting** | |
| 0 | |
| **Land Use** | |
| -- | **Increased Density** |
| -- | DU Per Acre |
| -- | Jobs/Acre |
| -- | **Increase Diversity** |
| -- | **Improve Walkability** |
| -- | Intersections/Square Mile |
| -- | **Improve Destination Accessibility** |
| -- | Dist. To Downtown Job Center (mi) |
| -- | **Increase Transit Accessibility** |
| -- | Dist. To Transit Station (mi) |
| -- | **Integrate Below Market Rate Housing** |
| -- | # of Units Below Market Rate |
| **Neighborhood Enhancements** | |
| -- | **Improve Pedestrian Network** |
| -- | |
| -- | **Provide Traffic Calming Measures** |
| -- | % of Streets With Improvement |
| -- | % Intersections With Improvement |
| -- | **Implement NEV Network** |
| **Parking Policy/Pricing** | |
| | **Limit Parking Supply** |
| -- | % Reduction in Spaces |
| -- | **Unbundle Parking Costs** |
| -- | Monthly Parking Cost ($) |
| -- | **On-Street Market Pricing** |
| -- | % Increase in Price |
| **Transit Improvement** | |
| -- | **Provide BRT System** |
| -- | % Lines BRT |
| -- | **Expand Transit Network** |
| -- | % Increase in Transit Coverage |
| -- | **Increase Transit Frequency** |
| -- | Implementation Level |
| -- | % Reduction in Headway |

## Energy Mitigation

| | |
|---|---|
| **Building Energy** | |
| -- | **Exceed Title 24** |
| -- | % Improvement |
| -- | **Install Energy Efficient Lighting** |
| -- | % Improvement |
| **Alternative Energy** | |
| -- | **Onsite Renewable Energy** |
| -- | Total kWH |
| -- | kWH Generated |
| -- | % of Use Generated |
| -- | % of Use |

## Appliance Mitigation

| | |
|---|---|
| 30% | Clothes Washer |
| 15% | Dish Washer |
| 50% | Fan |
| 15% | Refrigerator |

# CalEEMod Input Summary - Operational Mitigation

**File** UCI_UNEX.xls

**Project:** UCI UNEX Expansion

## Commute Mitigation

| | |
|---|---|
| **Commute Trips** | |
| -- | **Implement Trip Reduction Program** |
| -- | % Employees Eligible |
| -- | Type |
| -- | **Implement Transit Subsidy** |
| -- | % Employees Eligible |
| -- | Daily Subsidy Amount($) |
| -- | **Implement Employee Parking "Cash Out"** |
| -- | % Employees Eligible |
| -- | **Workplace Parking Charge** |
| -- | % Employees Eligible |
| -- | Daily Parking Charge ($) |
| -- | **Encourage Telecommute & Alt Schedules** |
| -- | % Employees Work 9/80 |
| -- | % Employees Work 4/40 |
| -- | % Employees Telecommute 1.5 days |
| -- | **Market Commute Trip Reduction Program** |
| -- | % Employees Eligible |
| -- | **Employee Vanpool/Shuttle** |
| -- | % Employees Eligible |
| -- | % Vanpool Mode Share |
| -- | **Provide Ride Sharing Program** |
| -- | % Employees Eligible |
| **School Trips** | |
| -- | **Implement School Bus Program** |
| -- | % Families Using |

## Water Mitigation

| | |
|---|---|
| **Water Conservation Strategy** | |
| -- | **Apply Water Conservation Strategy** |
| -- | % Reduction Indoor |
| -- | % Reduction Outdoor |
| **Water Supply** | |
| -- | **Use Reclaimed Water** |
| -- | % Indoor Water use |
| -- | % Outdoor Water Use |
| -- | **Use Grey Water** |
| -- | % Indoor Water use |
| -- | % Outdoor Water Use |
| **Indoor Water Use** | |
| -- | **Install Low Flow Bathroom Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Kitchen Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Toilet Faucet** |
| -- | % Reduction in Flow |
| -- | **Install Low Flow Shower** |
| -- | % Reduction in Flow |
| **Outdoor Water Use** | |
| -- | **Turf Reduction** |
| -- | Turf Reduction Area (acres) |
| -- | % Reduction in Turf |
| -- | **Use Water Efficient Irrigation Systems** |
| -- | % Reduction |
| -- | **Water Efficient Landscape** |
| -- | MAWA (gal/yr) |
| -- | ETWU (gal/yr) |

## Municipal Waste Mitigation

| | |
|---|---|
| -- | **Institute Recycling and Composting Services** |
| -- | % Reduction in Waste Disposed |

# APPENDIX C

# TRAFFIC ANALYSIS

**Stantec Consulting Services Inc.**
38 Technology Drive, Suite 100, Irvine CA 92618-5312

May 12, 2014

**Attention: Richard Demerjian**
750 University Tower
Irvine, CA 92697-2325

Dear Mr. Demerjian,

**Proposed University Extension Classrooms (UEC) Project Traffic Evaluation**

Stantec Consulting Inc. (Stantec) has carried out a traffic evaluation for the proposed University Extension Classroom (UEC) Building project located on the University of California, Irvine campus (hereby referred to here as "proposed project").

The proposed project would house UCI's University Extension (UNEX) International Program (IP), English as a Second Language Program and support uses. The proposed project would construct an approximately 70,000 gross square feet facility. The proposed facility would provide 46,000 assignable square feet of space, including instructional space, distance learning center, and administrative space to serve the UNEX programs. The facility is planned to be constructed in the north end of existing Parking Lot 17A which is located between East Peltason Drive and Adobe Circle Road. The attached Exhibit shows the location of the project site and the local circulation system.

The proposed project is anticipated to add approximately 490 part-time students to the program's approximately 126 existing part time students, for a total of approximately 616 part-time students. Additionally, the proposed project would add approximately 48 new faculty and staff employees to the approximately 163 existing employees, for a total of approximately 211 faculty and staff.

According to the Project Description, the UNEX-IP program includes a residential component; therefore a majority of enrolled students utilizing the new facility would reside in University-provided apartments in the local community. Travel to and from the campus would be made via existing UCI shuttle services, OCTA bus service, bicycle and other alternative transportation modes since the students do not drive personal vehicles. The UCI shuttle and OCTA bus stop serving the project site is located on Campus Drive approximately 1,000 feet north of the project site. The new faculty and staff are anticipated to commute to the facility and therefore would potentially result in a limited number of new vehicle trips to the campus. Faculty and staff commuters will park in the existing Anteater Parking Structure or Parking Lot 17A. Sufficient capacity to meet these faculty and staff parking needs are available within these parking facilities. The project also includes the construction of a new pedestrian bridge over East Peltason Drive.

It should be noted that the building space for the proposed project and the faculty/staff population served by the project are within the development program and population forecasts

assumed in the UCI Long Range Development Plan (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 update of the LRDP (May 2007).

As noted above, the UNEX-IP program will include a residential component and practically all of the students are anticipated to use alternative modes of transportation rather than personal vehicles. As a worse-case scenario, this traffic evaluation assumes that out of the additional 490 part-time students, 10 percent of those students will result in new vehicle trip to the campus.

The peak hour trip rates and resulting trip generation are summarized in the following tables:

**Table 1: ADT Trip Rates for Students and Faculty**

| Category | Unit | Rate | Notes: |
|---|---|---|---|
| 1. Student | person | 1.9 | person trips/commute |
| 2. Faculty | person | 1.9 | person trips/commute |

Source: UCI LRDP Update 2007

**Table 2: Peak Hour Trip Rates (Percent of ADT)**

| | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|
| Description | Inbound | Outbound | Inbound | Outbound |
| Academic | 8.0% | 0.7% | 2.0% | 7.5% |

Source: UCI Main Campus Traffic Model (UCIMCTM)

**Table 3: Project Trip Generation**

| | | AM Peak Hour | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| Category | Amount | Inbound | Outbound | Inbound | Outbound | ADT |
| 1. Student | 49 | 7 | 1 | 2 | 7 | 93 |
| 2. Faculty | 48 | 7 | 1 | 2 | 7 | 91 |
| **Total** | | **15** | **1** | **4** | **14** | **184** |

As can be seen from the table above, the proposed project will generate very few additional vehicle trips (16 AM peak hour trips and 18 PM peak hour trips), which when combined with UCI's overall trip generation would not be anticipated to be noticeable on the campus or surrounding roads and intersections.

**Proposed University Extension Classrooms (UEC) Project Traffic Evaluation**

In review of the project description and estimated trip generation, we feel that there is not a substantial amount of trips to warrant a full project traffic analysis. The trip increases are negligible, especially in the AM and PM peak hours, as far as traffic conditions are concerned.

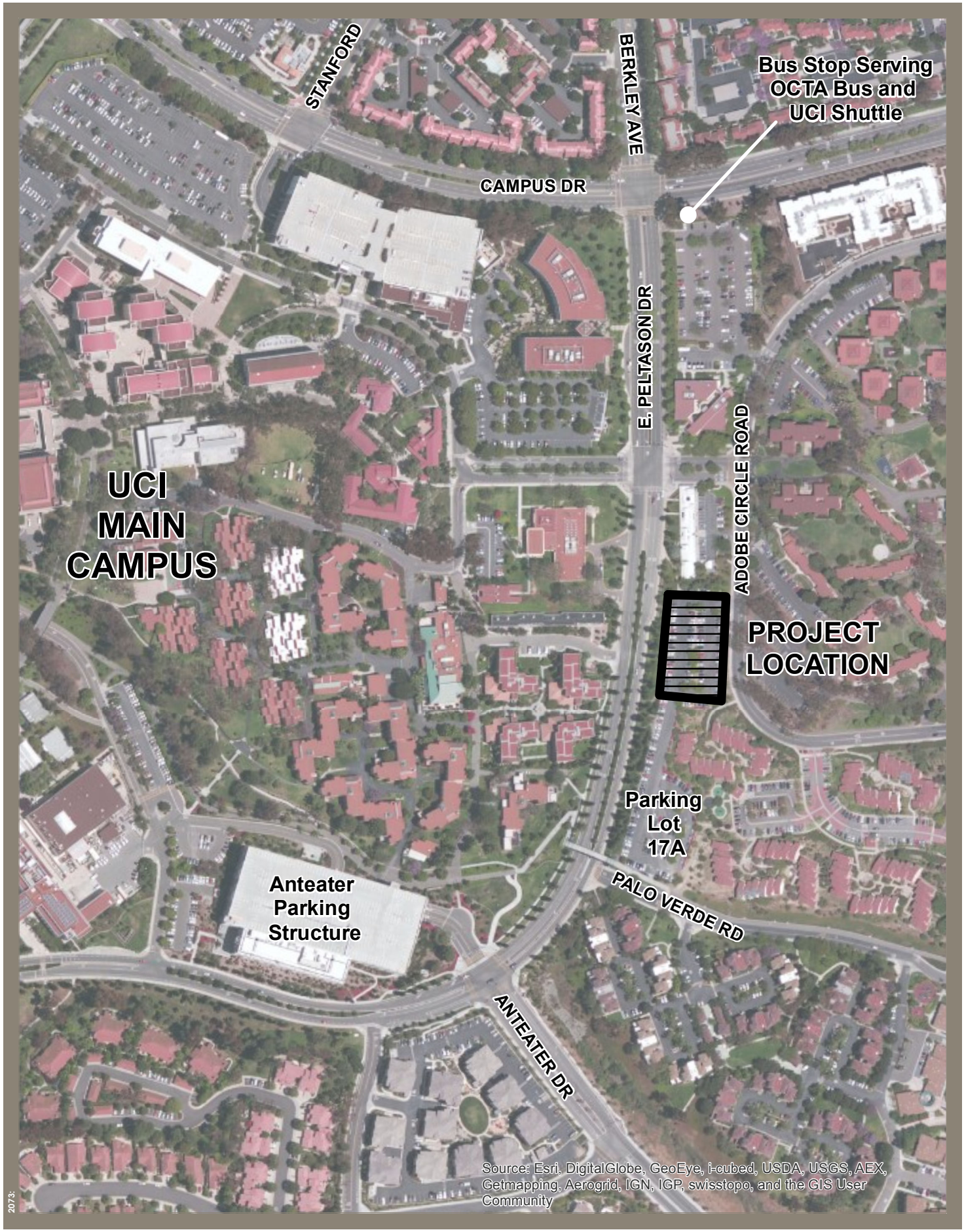
Regards,

**STANTEC CONSULTING SERVICES INC.**

Maria Manalili, PTP
Transportation Planner
Phone: (949) 923-6072
Maria.Manalili@stantec.com

Attachment: Exhibit 1: Proposed Project Location

v:\2073\uci\uci_unexprogram.docx




Stantec

N

**Exhibit 1**

*Proposed Project Location*

# APPENDIX D
# PUBLIC REVIEW/RESPONSE TO COMMENTS

**UCI University Extension Classroom Building Project**

# Draft Initial Study
# Public Review/Response to Comments

**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 July 11, 2014 through August 10, 2014. 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 July 11, 2014 (affidavit of publication included in this section).

**Comments and Responses**

Written comments were submitted by the public agencies identified below. These letters, followed by responses to comments in each, are presented on the pages following the Draft IS/MND distribution list.

| Commenting Agency | Correspondence Date |
|---|---|
| City of Irvine | August 13, 2014 |
| State of California, Governor's Office of Planning & Research | August 15, 2014 |

Community Development cityofirvine.org

City of Irvine, One Civic Center Plaza, P.O. Box 19575, Irvine, California 92623-9575 (949) 724-6000

August 13, 2014

Mr. Matthew Deines
Senior Planner
University of California, Irvine
Office of Environmental Planning and Sustainability
750 University Tower
Irvine, CA 92697-2325

Via: USPS and email: mdeines@uci.edu

**Subject: Review of the UCI University Extension Classroom Building Mitigated Negative Declaration (MND)**

Dear Mr. Deines:

City of Irvine staff has reviewed the above-referenced project and has the following comments:

1. The project description includes a discussion of the removal of student housing that was originally planned for the site per the UCI Long Range Development Plan (LRDP) in order to provide the proposed University Extension Classroom (UEC). However, the amount of student housing being replaced is not described. Clarify if the replaced student housing will be relocated elsewhere on-campus, and will this relocation be consistent with the LRDP.

2. The traffic evaluation included as part of the draft MND discusses an increase of 16 AM peak hour and 18 PM peak hour trips resulting from the proposed project. This trip generation is based on the assumption that the project will add 48 new faculty and staff, and 490 additional students. Of the 490 additional students, a "worse-case scenario" of ten percent of the students will commute to and from campus in a vehicle. Clarify how this ten percent was derived. Also, clarify if this is a percentage based on the existing University Extension International Program.

PRINTED ON RECYCLED PAPER

Thank you for the opportunity to review and comment on the University Extension Classroom Building MND. We would appreciate the opportunity to review any further information regarding this project as the planning process proceeds. If you have any questions, I can be reached by telephone at 949-724-6314 or at dlaw@cityofirvine.org.

Sincerely,

David R. Law, AICP
Senior Planner

cc: Sun-Sun Murillo, Supervising Transportation Analyst (via email)
Bill Jacobs, Principal Planner (via email)

**City of Irvine**

Response:

The project will not result in the removal of student housing and will not impact UCI's ability to fully implement the student housing goals and program identified in the 2007 UCI Long Range Development Plan (LRDP). The remaining land areas allocated for Student Housing in the LRDP provide adequate land area for the campus to fully implement the student housing program of 17,637 student beds described in the LRDP with implementation of the UNEX Classroom Project.

The estimate that approximately 10% of University Extension International Students will commute to the campus via single occupant vehicle is based on the experience of UNEX professional staff responsible for facility planning and housing accommodations for IP students. As international students visiting the campus for short term learning programs, the vast majority of IP students do not have access to private automobiles and rely on alternative transportation to commute to campus from the local community. UNEX staff has estimated that alternative transportation use by IP students currently exceeds 90%, but the figure of 90% was used in the project traffic analysis to provide a conservative estimate of traffic demand.

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

August 12, 2014

Matt Deines
University of California, Irvine
750 University Tower
Irvine, CA 92697-2325

Subject: UCI University Extension Classroom Building
SCH#: 2014071040

Dear Matt Deines:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on August 11, 2014, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

# Document Details Report
# State Clearinghouse Data Base

**SCH#** 2014071040
**Project Title** UCI University Extension Classroom Building
**Lead Agency** University of California, Irvine

**Type** MND Mitigated Negative Declaration

**Description** The proposed project would construct an approximately 70,000 gsf, 5-6 story high classroom facility on the University of California,.Irvine campus. The proposed University Extension Classroom (UEC) building would serve UCI's University Extension (UNEX) International Program, English as a Second Language program, which currently utilizes space in other campus buildings, and provide space for UNEX support uses including a distance learning center and administrative space. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road.

## Lead Agency Contact

**Name** Matt Deines
**Agency** University of California, Irvine
**Phone** 949 824 4929 **Fax**
**email**
**Address** 750 University Tower
**City** Irvine **State** CA **Zip** 92697-2325

## Project Location

**County** Orange
**City** Irvine
**Region**
**Lat / Long** 33° 39' 8.59" N / 117° 50' 46.12" W
**Cross Streets** E. Peltason Drive / Pereira Drive
**Parcel No.**
**Township** **Range** **Section** **Base**

## Proximity to:

**Highways** SR 73
**Airports**
**Railways**
**Waterways** San Diego Creek
**Schools** Four IUSD
**Land Use**

**Project Issues** Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Other Issues

**Reviewing Agencies** Resources Agency; California Coastal Commission; Department of Fish and Wildlife, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 12; Air Resources Board; Regional Water Quality Control Board, Region 8; Department of Toxic Substances Control; Native American Heritage Commission

**Date Received** 07/11/2014 **Start of Review** 07/11/2014 **End of Review** 08/11/2014

**State of California, Governor's Office of Planning and Research**

This correspondence confirms completion of the State Clearinghouse review process for the Draft IS/MND. No state agencies submitted comments through the Clearinghouse.

UNIVERSITY OF CALIFORNIA, IRVINE

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

Environmental Planning and Sustainability

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

July 10, 2014

State of California
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95812- 3044

**NOTICE OF COMPLETION – MITIGATED NEGATIVE DECLARATION**

**Project Title:** University Extension Classroom 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 CD copies of the proposed Mitigated Negative Declaration/Initial Study and 15 paper copies of the issue summary for this project at the University of California, Irvine.

The proposed project would construct an approximately 46,000 assignable square foot (ASF) (70,000 gross square foot (GSF)), 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The proposed University Extension Classroom (UEC) building would serve UCI's University Extension (UNEX) International Program (IP), English as a Second Language program, which currently utilizes space in other campus buildings, and provide space for UNEX support uses including a distance learning center and administrative space. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. The project site would encompass approximately 1 acre.

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 Environmental Planning and Sustainability.

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, July 11, 2014 through August 10, 2014.

Sincerely,

Matt Deines
Senior Planner

# 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:** UCI University Extension Classroom Building

Lead Agency: University of California, Irvine | Contact Person: Matt Deines

Mailing Address: | Phone: 949.824.4929

City: Irvine | Zip: 92697-2325 | County: Orange

**Project Location:** County: Orange | City/Nearest Community: Irvine

Cross Streets: E. Peltason Drive/Pereira Drive | Zip Code: 92697-2325

Longitude/Latitude (degrees, minutes and seconds): 33 ° 39 ′ 8.59 ″ N / 117 ° 50 ′ 46.12 ″ W | Total Acres: 1

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 ☐ Early Cons ☐ Neg Dec ☑ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other:

**Local Action Type:**

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☑ Other: Design Approval

**Development Type:**

☐ Residential: Units | Acres
☐ Office: Sq.ft. | Acres | Employees
☐ Commercial: Sq.ft. | Acres | Employees
☐ Industrial: Sq.ft. | Acres | Employees
☑ Educational: 70,000 square feet
☐ Recreational:
☐ Water Facilities: Type | MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type | MW
☐ Waste Treatment: Type | MGD
☐ Hazardous Waste: Type
☐ Other:

**Project Issues Discussed in Document:**

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

**Present Land Use/Zoning/General Plan Designation:**

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

The proposed project would construct an approximately 70,000 gross square foot (GSF)), 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The proposed University Extension Classroom (UEC) building would serve UCI's University Extension (UNEX) International Program (IP), English as a Second Language program, which currently utilizes space in other campus buildings, and provide space for UNEX support uses including a distance learning center and administrative space. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road.

*Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.*

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with 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 |
| _____ | California Highway Patrol | _____ | Office of Public School Construction |
| X | Caltrans District # 12 | X | Parks & Recreation, Department of |
| X | 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 July 11, 2014 Ending Date August 10, 2014

**Lead Agency (Complete if applicable):**

Consulting Firm: _____
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: University of California, Irvine
Address: 750 University Tower
City/State/Zip: Irvine, CA 92697-2325
Phone: 949.824.4929

**Signature of Lead Agency Representative:** _____ **Date:** _____

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

UNIVERSITY OF CALIFORNIA, IRVINE

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Environmental Planning and Sustainability

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

July 10, 2013

**NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION**

Project Title: UNIVERSITY EXTENSION CLASSROOM BUILDING
Project Location: University of California, Irvine
Lead Agency: University of California
County: Orange

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the University Extension Classroom Building at the University of California, Irvine 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 an approximately 46,000 assignable square foot (ASF) (70,000 gross square foot (GSF)) 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. The project site would encompass approximately 1 acre. The Initial Study is available for review at: http://www.ceplanning.uci.edu/current_projects.html. Background material that has been incorporated into this document is available for review at the UCI Office of Environmental Planning and Sustainability by appointment (see address below) during regular business hours.

A 30-day public review period will commence on July 11, 2014 and extend through August 10, 2014. Written comments may be submitted to: Matthew Deines, Senior Planner, Office of Environmental Planning and Sustainability, University of California, Irvine, 750 University Tower, Irvine, California 92697-2325. Comments may also be submitted via email to mdeines@uci.edu. Your response may be sent at the earliest possible date, but no later than 5:00 p.m. on August 10, 2014. If you have any questions regarding the project, please contact (949) 824-4929.

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,

Matt Deines
Senior Planner

## Matthew Deines

**From:** Richard G. Demerjian
**Sent:** Thursday, July 10, 2014 5:00 PM
**To:** Chancellor UC Irvine; Wendell C. Brase; Richard E. Orr; Peter Bowler (pabowler@uci.edu); Thomas A. Parham; chair@uci.edu; Marc A Gomez; Rebekah Gladson; Ramona Agrela; Meredith Michaels; Michael Arias; John Scharf; rrude@uci.edu; Associated Graduate Students President; president@asuci.uci.edu; Diane Fields Geocaris; Drew Chesen (Drew.Chesen@unx.uci.edu); Brian Pratt; Daniel J. Dooros; Janet C. Mason; John Hemminger (UCI)
**Cc:** Matthew Deines
**Subject:** Notice of Avaialbility - UNEX Classroom Project Draft Initial Study/Mitigated Negative Declaration
**Attachments:** UNEX_ISMND7-2-14.pdf; UNEX_NOI newspaper.doc

Colleagues

I am attaching a copy of a Notice of Completion and an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed University Extension Classroom Project. The University is considering adoption of an IS/MND for approval of this project in compliance with the California Environmental Quality Act (CEQA). Implementation of the proposed project would construct an approximately 46,000 assignable square foot (ASF) (70,000 gross square foot (GSF)) 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The Project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. The project site would encompass approximately 1 acre.

As described in the attached Notice, the 30-day public review period for the IS/MND will commence on July 11, 2014 and extend through August 10, 2014. Please contact me if you have questions or would like additional information regarding these documents.

Sincerely,

Richard

Richard Demerjian
Director
Office of Environmental Planning and Sustainability
University of California, Irvine
Office: 949-824-7058
Cell: 949-280-9619
Email: rgdemerj@uci.edu

## 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 November 19, 1905, 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:

**July 11, 2014.**

"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: July 11, 2014**

Signature

**The Orange County Register**
**625 N. Grand Ave.**
**Santa Ana, CA 92701**
**(714) 796-2209**

## PROOF OF PUBLICATION

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

**UNIVERISTY EXTENSION CLASSROOM BUILDING**

The University of California is considering the adoption of an Initial Study/Mitigated Negative Declaration for the approval of the University Extension Classroom Building at the University of California, Irvine 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 an approximately 46,000 assignable square foot (ASF) (70,000 gross square foot (GSF)) 5-6 story high classroom facility on the University of California, Irvine (UCI) campus. The UEC project would be constructed adjacent to the Student Health Center II building on the north end of Parking Lot 17A, which is located between East Peltason Drive and Adobe Circle Road. The project site would encompass approximately 1 acre. The Initial Study is available for review at: http://www.ceplanning.uci.edu/current_projects.html. Background material that has been incorporated into this document is available for review at the UCI Office of Environmental Planning and Sustainability by appointment (see address below) during regular business hours.

A 30-day public review period will commence on July 11, 2014 and extend through August 10, 2014. Written comments may be submitted to: Matthew Deines, Senior Planner, Office of Environmental Planning and Sustainability, University of California, Irvine, 750 University Tower, Irvine, California 92697-2325. Comments may also be submitted via email to mdeines@uci.edu. Your response may be sent at the earliest possible date, but no later than 5:00 p.m. on August 10, 2014. If you have any questions regarding the project, please contact (949) 824-4929.

Published: Orange County Register July 11, 2014. R-1117 9940638

# UNEX CLASSROOM BUILDING PROJECT
## Draft IS/MND 30-day Review Distribution List
## 7/30/2014

**NOC Overnight Delivery (15 Draft IS/MND CDs/15 NOI's and summaries attached individually)**

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

**IS/MND Regular Mail (Paper copy of Draft IS/MND)**

Mr. Brad Werdick
UCOP
1111 Franklin Street, 6th Floor
Oakland, CA 94607

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

**Certified Mail (Paper document copy)**

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

**NOI via Certified Mail (CD copy of Draft IS/MND)**

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

**NOI via Certified Mail (Link to electronic version of Draft IS/MND provided)**

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

California Dept. of Fish & Wildlife
1416 9th St., 12th Floor
Sacramento, CA

CA Dept. of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630

Santa Ana Regional Water Quality Control Board
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
915 Wilshire Blvd
Los Angeles, CA 90017

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
PO Box 54153
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
2177 Salk Ave. Suite 250
Carlsbad, CA 92008-7385

Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618-3304

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

**NOI Via UCI Email (Link to electronic version of Draft IS/MND provided)**

Interim Vice Chancellor

Jorge Ancona
Executive Director - UC Irvine Alumni Association

Director Janet Mason
Capital Planning

Vice Chancellor Wendell Brase
Administrative & Business Services

Thomas A. Parham, Ph.D.
Interim Vice Chancellor, Student Affairs

Vice Chancellor Planning and Budget
Meredith Michaels

Counsel to the Chancellor
Diane Fields Geocaris

Academic Senate
Alan Barbour

Executive Vice Chancellor
Michael Gottfredson
C/O Mr. Michael Arias

Director Richard Orr
Campus Asset Management

Interim Assistant Vice Chancellor
Facilities Management
Marc A. Gomez

Director of Campus Operations
Design & Construction Services
Gary Krekemeyer

Open Space Reserve Committee
C/O Dept. of Ecology & Evolutionary Biology
Prof. Peter Bowler

Associate Vice Chancellor
Design & Construction Services
Rebekah Gladson

Vice Chancellor Research & Graduate Studies
John Hemminger

Dan Dooros
Associate Vice Chancellor, Student Affairs

Ramona Agrela
Associate Chancellor
Chancellor's Office

UNEX
Bob Rude
Drew Cheesen

President, ASUCI

President, AGS

**Paper Copies of Draft IS/MND**

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

UCI Archives
Main Library
Attn: Michelle Light
ZOT 8100

**Orange County Register**

Otto Baten (Current Contact)
obaten@ocregister.com
714-796-6751
Note: Paper typically needs 3-4 days' notice before publication

# APPENDIX E
# MITIGATION MONITORING PROGRAM

**UNIVERSITY EXTENSION CLASSROOM BUILDING PROJECT**

**MITIGATION MONITORING AND REPORTING PROGRAM - 2014**

| | Mitigation Measure | Responsible Party | Mitigation Timing | Monitoring and Reporting Procedure | Compliance Notes |
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| ***Aesthetics*** | | | | | |
| **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. | CEP | Prior to project design approval[(1)] | | **Prior to start of construction provide documentation confirming that project complies**. |
| **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:<br><br>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;<br>ii. Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and<br>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. | CEP | During design development | CEP to confirm and document policy and guideline compliance | **Provide exterior lighting plan to Environmental Planning and Sustainability for approval per measure.** |
| ***Air Quality*** | | | | | |
| **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.<br><br>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. | CEP | During environmental review | CEP to review and approve air quality assessment | **Completed** |
| **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 Best Management Practices | D&CS | Prior to commencement of construction activities and | D&CS to develop and implement plan<br><br>CEP to confirm and | **Prior to initiating construction, provide section of construction contract demonstrating i-xx compliance.** |

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| | (BMPs):<br><br>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.<br>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.<br>iii. Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities.<br>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.<br>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.<br>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.<br>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.<br>viii. Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites.<br>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.<br>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.<br>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.<br>xii. Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes.<br>xiii. Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as electric or natural gas-powered equipment or biofuel.<br>xiv. Heavy construction equipment shall use low $NO_x$ diesel fuel to the extent that it is readily available at the time of construction.<br>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.<br>xvi. The construction contractor shall develop a construction traffic management plan that includes the | | during construction | monitor | |

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| | following:<br>• Scheduling heavy-duty truck deliveries to avoid peak traffic periods<br>• Consolidating truck deliveries<br>xvii. Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers.<br>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.<br>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.<br>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. | | | | |
| ***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:<br>i. Perform appropriate technical analyses;<br>ii. File any resulting reports with the South Coastal Information Center; and<br>iii. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American. | D&CS / CEP | During construction | On-site construction supervisor to notify CEP who will stop/direct work | **Include Environmental Planning and Sustainability in pre-construction meeting, provided with archaeologist contract, notified of survey schedule, and provide d with reports as required.** |
| **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 | D&CS / CEP | During construction and at time of find | Qualified consultant to notify CEP and D&CS who will | **Include Environmental Planning and Sustainability in pre-construction meeting, provided with paleontologist contract, notified of survey schedule,** |

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| | 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. | | | stop/direct work | **and provided reports as required.** |
| **Cul-4B** | If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented. | CEP | At time of find | CEP to retain documentation that procedures were followed | **See 4A** |
| **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:<br>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);<br>ii. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and<br>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. | CEP | When resource determined to be significant | CEP to retain documentation that procedures were followed | **See 4A** |
| **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. | D&CS/PTS | Prior to construction | D&CS to record Fire Marshal notification and notify CEP | **Will this be applicable?** |
| ***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:<br>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.<br>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. | D&CS / CEP | Prior to project design approval[(1)] | D&CS to incorporate into project design, and submit study to CEP for use completing environmental analysis | **Prior to initiating construction, provide Environmental Planning and Sustainability with copy of drainage plan demonstrating compliance with i and ii.** |
| **Hyd-2B** | Prior to project design approval for future projects that implement the 2007 LRDP and would result in land | D&CS/EH&S | Prior to project | D&CS to confirm | **Prior to initiating construction,** |

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| | 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.<br><br>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.<br>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.<br>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.<br>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. | / CEP | design approval[(1)] | incorporation in construction documents<br><br>Notification to CEP and EH&S<br><br>E&HS/CEP to confirm implementation by contractor | **provide Environmental Planning and Sustainability with copy of plan demonstrating compliance.** |
| ***Noise*** | | | | | |
| **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:<br><br>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.<br>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.<br>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.<br>iv. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise.<br>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 | D&CS / CEP | Prior to construction | D&CS to confirm incorporation in construction documents<br><br>CEP notification | **Prior to construction, provide Environmental Planning and Sustainability with section of constriction document demonstrating that project is in compliance** |

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| | facilities), as feasible.<br>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.<br>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.<br>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-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. | D&CS /CEP/PTS | Prior to construction | D&CS to incorporate in construction documents and provide to CEP and PTS<br><br>CEP to confirm review | **Will this be applicable?** |