UCI

FINAL

TIERED INITIAL STUDY &

MITIGATED NEGATIVE DECLARATION

Classroom Building

July 2016

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1.0 PROJECT INFORMATION

1.1 Project Title

Classroom Building

1.2 Lead Agency Name and Address

University of California, Irvine
Office of Environmental Planning and Sustainability
380 University Tower, Irvine, CA 92697-2325

1.3 Contact Person and Phone Number

Richard Demerjian, Director
(949) 824-7058

1.4 Project Location

The University of California, Irvine (UCI) is located in the city of Irvine, Orange County, California approximately four miles inland from the Pacific Ocean (see Exhibit 1). The proposed project site is located between Ring Road and Inner Ring Road in the Academic Core (see Exhibit 2).

1.5 Custodian of the Administrative Record

University of California, Irvine
Office of Environmental Planning and Sustainability
380 University Tower, Irvine, CA 92697-2325

1.6 Documents Incorporated by Reference

The University of California, Irvine Long Range Development Plan (LRDP, UCI, 2007) is a comprehensive land use plan that guides the growth of the campus through horizon year 2026. It provides policies and guidelines to support key academic and student life goals, identifies development objectives, delineates campus land uses, and estimates new building space needed to support project program expansion.

The Long Range Development Plan Environmental Impact Report (LRDP EIR, PBS&J, 2007) analyzes potential environmental impacts associated with the implementation of the 2007 LRDP pursuant to CEQA Guidelines Sections 15152 and 15168. This document is used to tier subsequent environmental analysis, including this Initial Study/Mitigated Negative Declaration (IS/MND), for campus development.

Exhibit 1-1
Regional Location

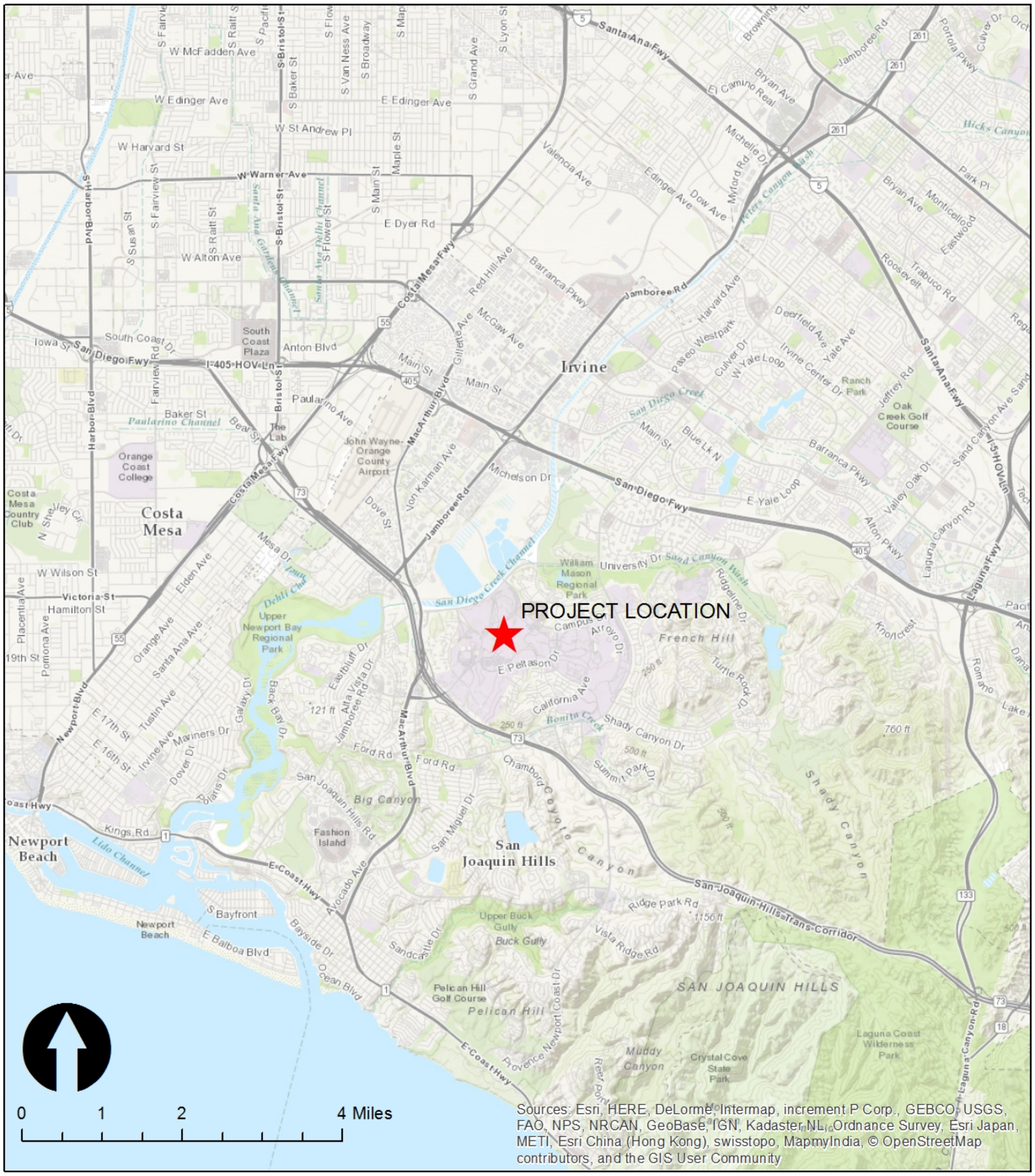


Exhibit 1-2
Project Location

2.0 PROJECT DESCRIPTION

2.1 Description of Project

The Classroom Building project (proposed project) would construct a three-story, 72,318-gross-square-foot (GSF) structure on a 1.2-acre site on the University of California, Irvine (University) campus (see Exhibit 2-1). The structure would include office space to be utilized by the Office of Information Technology (OIT) and the Learning and Academic Resource Center (LARC) and 1,260 classroom seats, including active learning lecture halls, flat-floor active learning classrooms, computer lab, and general assignment classrooms..

The existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. Service drives on either side of Ring Mall, on the north side of the project site, would be removed and realigned as part of the proposed project. A new 40-foot-wide pedestrian radial mall would be constructed southwest and parallel to the new classroom building to allow connectivity from Aldrich Park, between the Inner Ring Road and Ring Mall. As described in the 2007 LRDP, a new bicycle path to the northeast, connecting Ring Mall to Inner Ring Road, would also be constructed.

Per the UC Sustainable Practices Policy, the proposed project would meet or exceed LEED Silver equivalency and the California Green Building Standards Code (Cal Green). The project would incorporate measures resulting in significant energy savings, construction waste reduction, recycled material use, and water conservation. Such features would include an overall energy efficiency that exceeds California Title 24 criteria by at least 20%. To achieve this goal, the project would include building features such as high-performance glazing, insulation and radiant barrier, high reflectance roofing materials, high efficiency natural gas water heaters, energy efficient lighting, Energy Control Systems, efficient exhaust fans, and high efficiency air conditioning equipment where applicable.

2.2 Project Phasing and Site Development

Project construction is anticipated to begin in September 2016 and would occur over 23 months. Demolition would occur within the first month of construction and grading and hauling over the first three. Total estimated on-site earth movement would be approximately 3,000 cubic yards. Demolition of the project site includes the existing on-site 3,000 GSF modular, hardscaping, and ornamental trees. No pile driving or excavation of sedimentary rock other than topsoils would occur.

Exhibit 2-1
Site Plan

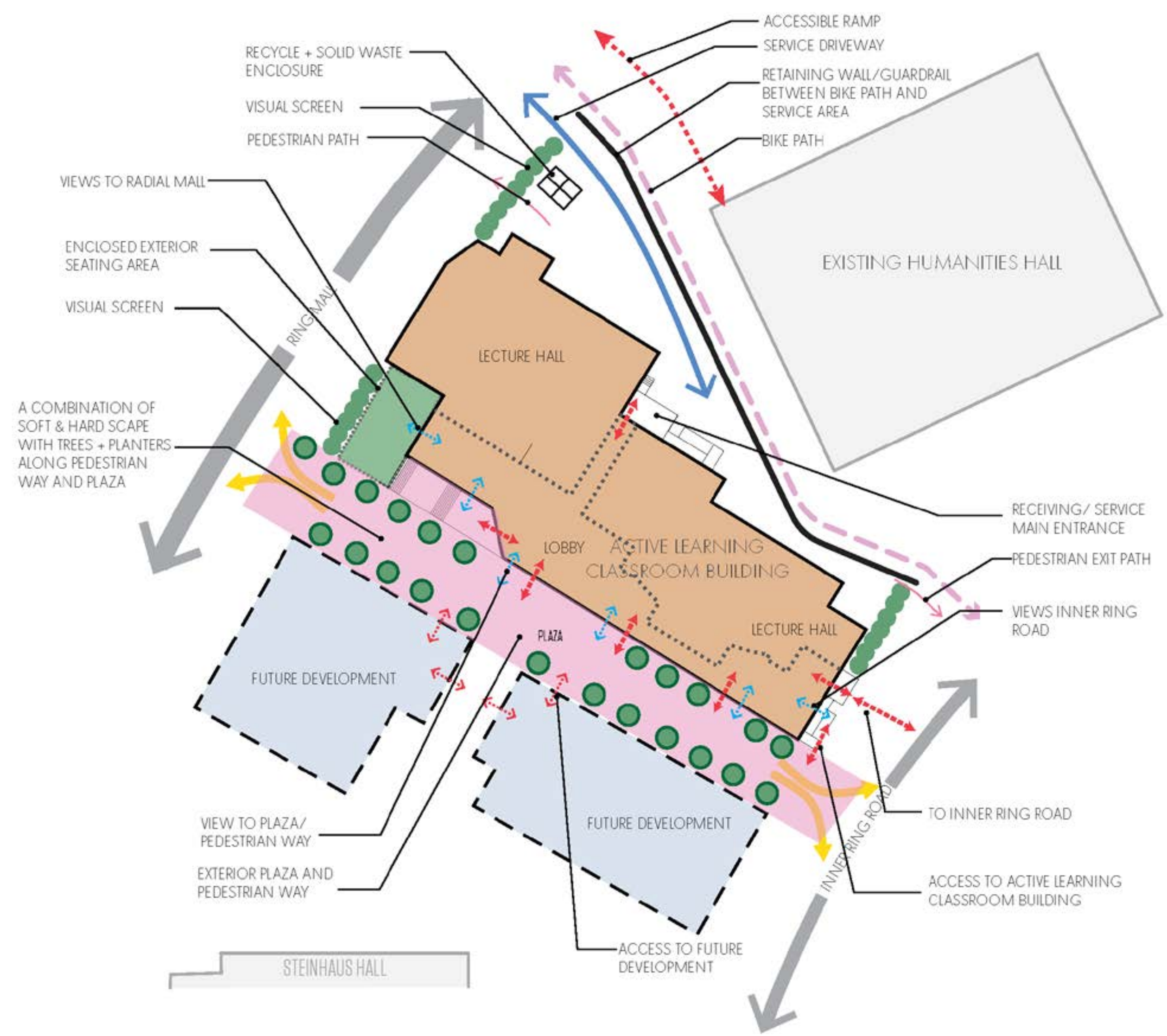
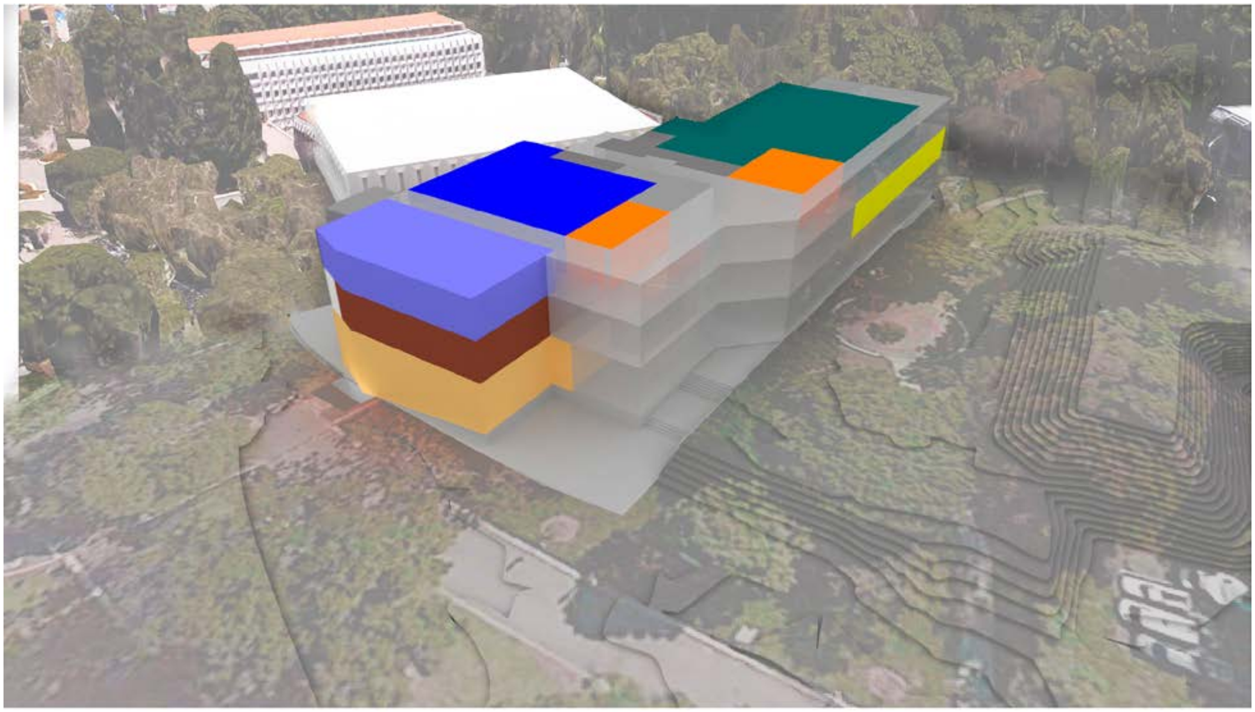
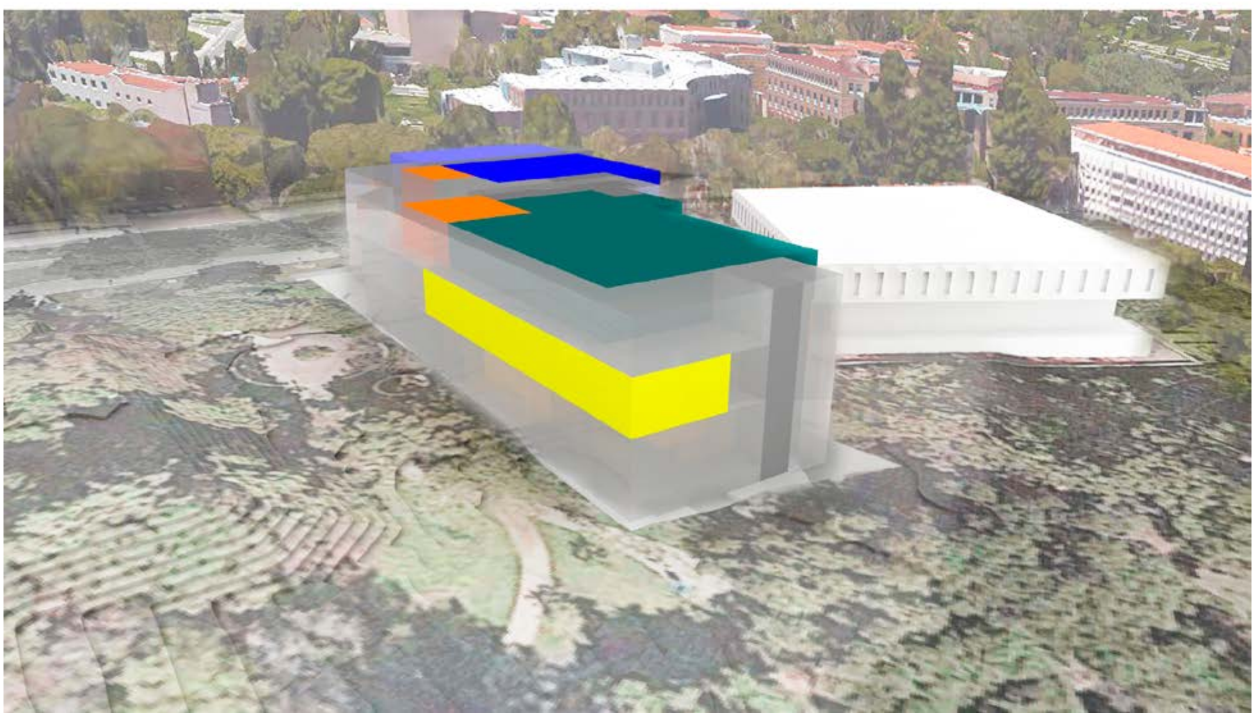


Exhibit 2-2
Conceptual Massing





Appropriate acoustical and visual buffers, as determined during the final design stage, would be utilized during constriction to minimize potential project related aesthetic and/or noise impact to existing sensitive receptors.

2.2.1 Access

A construction staging plan has not been completed at this time; however, staging would occur adjacent to the project site in an existing construction staging yard. Site access and haul routes during construction would be through West Peltason Drive and Bison Avenue.

Operational vehicle access would occur via West Peltason Drive and Mesa Road. Lot 7 to the north of the project site, which connects to the internal campus roadway network, would be utilized for staff and visitor parking.

2.2.2 Utilities

A finalized stormwater drainage plan has not been completed at this time because the project is design-build; however, existing hydrology patterns on the site would be maintained to the extent practical as determined during the project's final design stage. Storm drains are anticipated to run along the northeast, southwest, and southeast sides of the structure with a storm drain line connecting to an existing storm drain southeast of the project site.

New water, electrical, and telecommunications lines would be installed to connect to existing stubs along Ring Road. A domestic water line that runs northwest-to-southeast through Founders' Court would be removed.

2.3 Environmental Setting and Surrounding Land Uses

The project site is located on a previously developed piece of land in the Academic Core of the campus; prior grading has occurred on-site during 1963 to 1965 for development of Founders' Court and adjacent buildings. The project site lies between pedestrian walkways, Ring Road and Inner Ring Road. It is surrounded by on-campus educational uses and open space, Humanities Gateway to the north; Humanities Hall to the east; Founders' Court, Aldrich Park, and Steinhaus Hall to the south; and the Greenhouse to the west (see Exhibits 2-3 and 2-4).

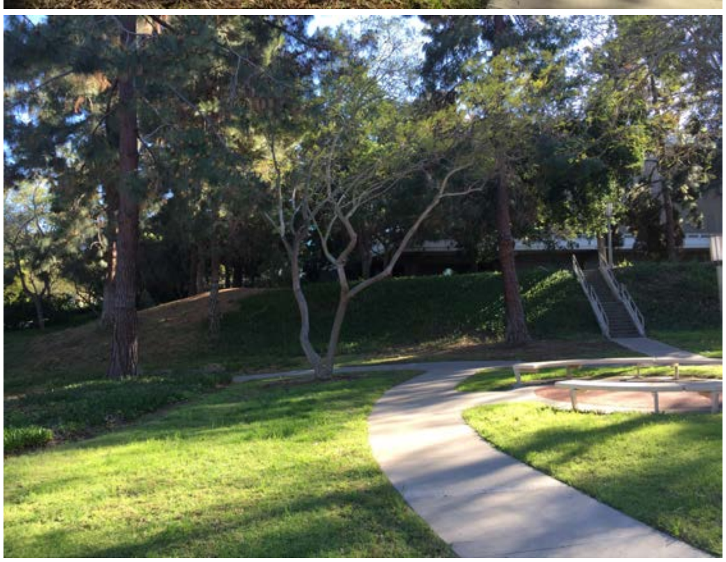
2.4 Consistency with the LRDP

As designated in the 2007 LRDP, the project site is located within the Academic Core and and is designated as Academic and Support Services. This designation allows for the construction of classroom building space and related support infrastructure. The proposed project would not increase on-campus population; therefore, it would be within the population envelope analyzed in the 2007 LRDP EIR. Therefore, the proposed project is consistent with the 2007 LRDP.

Exhibit 2-3
Project Views

View 1: West portion of site boundary looking east toward project site and Humanities Hall.

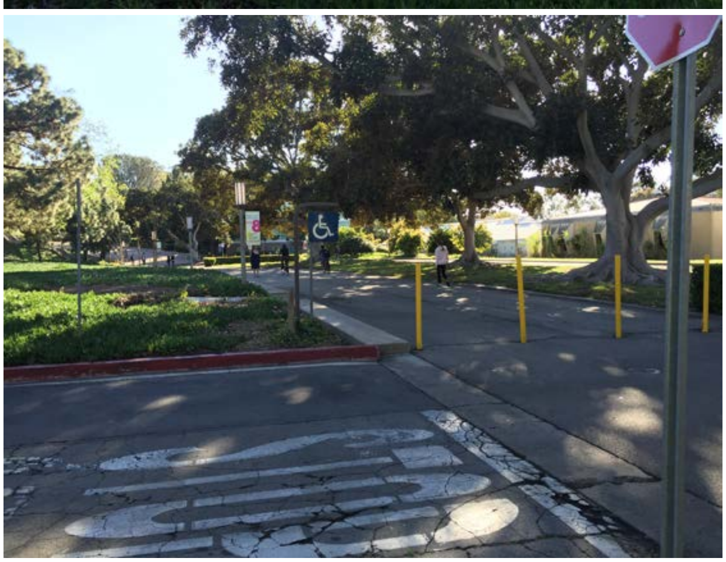
View 2: Middle of project site looking north toward the Greenhouse.



View 3: West portion of site boundary looking southwest toward Founders' Court and Steinhaus Hall.

View 4: North boundary of project site looking south toward the project site.

View 5: South boundary of project site looking south toward Aldrich Park.



View 6: North boundary of project site looking southwest down Ring Road.

Exhibit 2-4
Adjacent Land Uses

2.5 Discretionary Approval Authority and Other Public Agencies Whose Approval Is Required

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 UCI Chancellor would consider approval of the proposed project.

3.0 DETERMINATION

On the basis of the initial study that follows:

	I find that the proposed project meets the criteria for the Section 15332 In-Fill Development Project Class 32 exemption and is CATEGORICALLY EXEMPT from the provisions of CEQA.
	I find that the proposed project WOULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	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.

5.12.16

Signature　　　　Date

Printed Name　　　　For

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

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

- **"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.
- **"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.
- **"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.
- **"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 EIR. The project impact is less than significant without the incorporation of LRDP or project-level mitigation.
- **"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).

4.1 Aesthetics

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

Discussion

Aesthetics issues are discussed in Section 4.1 of the 2007 LRDP EIR.

a) Scenic Vista: No Impact

There are no identified scenic vistas surrounding the project site or anywhere else on campus (LRDP EIR, page 4.1-6). Furthermore, the project site is located within the Academic Core, which has been previously been built-out with compatible uses, mainly consisting of academic buildings and support structures. Therefore, the proposed project would not affect a scenic vista and no impact would occur. No mitigation is required.

b) Scenic Resources within a State Scenic Highway: No Impact

The California Scenic Highway Mapping System indicated that no Officially Designated State

Scenic Highway is located within proximity to the project site.[1] The closest Eligible State Scenic Highway – Not Officially Designated, Pacific Coast Highway, is located approximately three miles southwest. Therefore, the proposed project would not affect scenic resources within a state highway and no impact would occur. No mitigation is required.

c) Visual Character: No Impact

As discussed in 4.1(a), the proposed project is located in the Academic Core, which mainly consists of academic buildings and support structures. The construction of an educational facility would be compatible with the existing uses. Therefore, the proposed project would not significantly impact the surrounding visual character and no impact would occur. No mitigation is required.

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

The proposed project includes outdoor lighting to provide safe levels of illuminations for pedestrians, such as exterior building mounted fixtures. This would increase the ambient lighting levels from its previously state, which included only a modular building. However, all outdoor lighting would be designed in accordance with mitigation measure Aes-2A and a lighting plan would be approved during pre-construction in accordance with mitigation measure Aes-2B. Therefore, with implementation of LRDP EIR mitigation measures Aes-2A and Aes-2B, potential impacts due to the creation of light and glare would be reduced to a less than significant level.

Mitigation Measures

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:

- 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;

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[1] http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed April 3, 2016.

- Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and
- Shielding 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.

4.2 Air Quality

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X		
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)?			X		
d) Expose sensitive receptors to substantial pollutant concentrations?				X	
e) Create objectionable odors affecting a substantial number of people?				X	

Discussion

Air quality issues are discussed in Section 4.2 of the 2007 LRDP EIR. A project-specific Air

Quality Assessment was prepared by Michael Baker International, Inc. and is included as Appendix A.

a) Air Quality Management Plan Consistency: No Impact

On December 7, 2012, the South Coast Air Quality Management District (SCAQMD) Governing Board approved the 2012 Air Quality Management Plan (AQMP), which outlines its strategies for meeting the National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ and ozone. According to the SCAQMD's 2012 AQMP, two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

- Would the project result in an increase in the frequency or severity of existing air quality violations?

Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in 4.2(b) below, localized concentrations of CO, NO_X, PM_{10}, and $PM_{2.5}$ would be less than significant during project operations. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations. Because reactive organic gases (ROGs) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

- Would the project cause or contribute to new air quality violations?

As discussed in 4.2(b) below, operations of the proposed project would result in emissions that would be below the SCAQMD operational thresholds. Therefore, the proposed project would not have the potential to cause or affect a violation of the ambient air quality standards.

- Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

The proposed project would result in less than significant impacts with regard to localized concentrations during project operations. Therefore, the proposed project would not delay the timely attainment of air quality standards or 2012 AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and Southern California Association of Governments (SCAG) air quality policies, it is important to recognize that air quality planning within the South Coast Air Basin (Basin) focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Therefore, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2012 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2012 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

- Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?

In the case of the 2012 AQMP, several sources of data form the basis for the projections of air pollutant emissions including: UCI's *2007 Long Range Development Plan* (LRDP), SCAG's *Growth Management* Chapter of the *Regional Comprehensive Plan* (RCP), and SCAG's *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS also provides socioeconomic forecast projections of regional population growth. The LRDP designates the site as Academic and Support. According to the LRDP, the Academic and Support areas permit classrooms; instructional and research laboratories; undergraduate, graduate, and professional schools and programs; and ancillary support facilities such as administrative facilities, libraries, performance and cultural facilities, clinical facilities, research institutes, conference facilities, and services supporting academic operations. Other permitted uses in this category include food service, recreation, parking, utility infrastructure, and other support uses. The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles, therefore complies with the site's intended use. The project would serve existing students, faculty/staff and would not increase enrollment or vehicle trips. Additionally, the project would be consistent with the City's General Plan and UCI's LRDP and assumed emissions for the project site, since no change in the site's land use designation is proposed. Therefore, the project is generally consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the RCP. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the cities; these are used by SCAG in all phases of implementation and review. As SCAQMD incorporated these same projections into the 2012 AQMP, it can be concluded that the project would be consistent with the projections. As a result, the project would not exceed growth assumptions within the City's General Plan or UCI's LRDP. Therefore, the project would be consistent with the 2012 AQMP and a less than significant impact would occur.

- Would the project implement all feasible air quality mitigation measures?

Compliance with all feasible emission reduction measures identified by the SCAQMD would be required as identified in 4.2(b) and 4.2(c) below. As such, the proposed project would meet this AQMP consistency criterion.

- Would the project be consistent with the land use planning strategies set forth in the AQMP?

The project is consistent with the LRDP land use designations for the site. Compliance with emission reduction measures identified by the SCAQMD would be required as identified in 4.2(b) and 4.2(c) below. As such, the proposed project meets this AQMP consistency criterion.

In conclusion, the determination of 2012 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet State and federal air quality standards. Also, the proposed project would be consistent with the goals and policies of the AQMP for control of fugitive dust. Therefore, the proposed project would also be consistent with the 2012 AQMP and no impact would occur. No mitigation is required.

b) Air Quality Standards: Less Than Significant Impact with Project-level Mitigation Incorporated

SHORT-TERM CONSTRUCTION

Short-term air quality impacts are predicted to occur during grading and construction operations associated with implementation of the proposed project. Temporary air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from grading and building construction; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

Construction activities would include demolition, grading, building construction, paving, and architectural coating. Site grading could require approximately 3,000 cubic yards of soil export. Project construction equipment would include excavators, graders, dozers, scrapers, and tractors/loaders/backhoes during grading; rough terrain forklifts, generators, tractors/loaders/backhoes, and welders during building construction; pavers, paving equipment, and rollers during paving; and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod). Table 4.2-1, Short-Term (Construction) Emissions, presents the anticipated daily short-term construction emissions.

Table 4.2-1
Short-Term (Construction) Emissions

Emissions Source	Pollutant (pounds/day) [1, 2]					
	ROG[3]	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2016						

Unmitigated Emissions	2.97	28.50	22.32	0.03	5.90	3.61
Mitigated Emissions	2.97	28.50	22.32	0.03	3.00	2.03
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded After Mitigation?	**No**	**No**	**No**	**No**	**No**	**No**
2017						
Unmitigated Emissions	2.68	21.31	15.15	0.02	10.70	4.74
Mitigated Emissions	2.68	21.31	15.15	0.02	6.53	2.85
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded After Mitigation?	**No**	**No**	**No**	**No**	**No**	**No**
2018						
Unmitigated Emissions	26.28	13.33	14.70	0.02	1.29	0.95
Mitigated Emissions	26.28	13.33	14.70	0.02	1.19	0.93
SCAQMD Thresholds	75	100	550	150	150	55
Is Threshold Exceeded After Mitigation?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
1. Emissions were calculated using CalEEMod, as recommended by the SCAQMD.
2. The reduction/credits for construction emission mitigations are based on mitigation included in CalEEMod and as typically required by the SCAQMD. The mitigation includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.
3. Both ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.

Refer to Appendix A, *Air Quality Emissions Data*, for assumptions used in this analysis.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10}

(particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. Fine Particulate Matter ($PM_{2.5}$) is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and SO_X combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Mitigation measure AQ-1 would require implementation of Best Management Practices (BMPs) during construction, including, but not limited to, dust control techniques (i.e., daily watering), a traffic management plan, and adherence to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), to reduce PM_{10} and $PM_{2.5}$ concentrations. These are standard dust control measures that the SCAQMD requires for all projects. As indicated in Table 4.2-1, total PM_{10} and $PM_{2.5}$ emissions would be below the SCAQMD threshold with the implementation of mitigation measure AQ-1. Therefore, particulate matter impacts during construction would be reduced to a less than significant level.

ROG Emissions[1]

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. Architectural coatings were also quantified with CalEEMod based upon the size of the buildings.

The highest concentration of ROG emissions would be generated during the application of architectural coatings on the building. As required by law, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating. Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. As shown in Table 4.2-1, project construction would not result in an exceedance of ROG emissions during any years of construction. Therefore, impacts due to ROG emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the

[1] ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.

equipment is used, and emissions from trucks transporting materials to and from the site. Standard SCAQMD regulations, such as maintaining construction equipment in proper tune, shutting down equipment when not in use for extended periods of time, and implementing SCAQMD Rule 403 would be adhered to. As noted in Table 4.2-1, construction equipment exhaust would not exceed SCAQMD thresholds. Therefore, impacts would be less than significant.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, federal, and international agencies and was identified as a toxic air contaminant by the California Air Resources Board in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. Therefore, there would be no impact due to naturally occurring asbestos.

Construction Odors

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Additionally, odors generated during construction activities would be temporary. Therefore, construction odors would be less than significant.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Construction would occur over a six-month period with the greatest emissions being generated during the initial stages of construction. Additionally, the greatest amount of ROG emissions would typically occur during the final stages of development due to the application of architectural coatings.

CalEEMod allows the user to input mitigation measures such as watering the construction area to limit fugitive dust. Mitigation measures that were input into CalEEMod allow for certain reduction credits and result in a decrease of pollutant emissions. Reduction credits are based upon studies developed by CARB, SCAQMD, and other air quality management districts throughout California, and were programmed within CalEEMod. As indicated in Table 4.2-1, CalEEMod calculates the reduction associated with recommended mitigation measures.

Therefore, as depicted in Table 4.2-1, construction emissions would be less than significant with implementation of project-level mitigation measure AQ-1.

LONG-TERM OPERATIONAL EMISSIONS

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

As the proposed project would serve the existing student population and faculty at the UCI campus, no new vehicle trips would be added to the circulation network. As a result, Table 4.2-2, Long-Term Air Emissions, presents the anticipated area source and energy source emissions only. As shown in Table 4.2-2, unmitigated emissions generated by area and energy sources associated with the proposed project would not exceed established SCAQMD regional thresholds.

Table 4.2-2
Long-Term Air Emissions

Source	Estimated Emissions (pounds/day) [1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	1.98	0.00	0.13	0.00	0.00	0.00
Energy Sources	0.04	0.32	0.27	0.00	0.02	0.02
Total Emissions	**2.02**	**0.32**	**0.40**	**0.00**	**0.02**	**0.02**
SCAQMD Threshold	55	55	550	150	150	55
Is Threshold Exceeded? (Significant Impact)	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
1. Based on CalEEMod modeling results, worst-case seasonal emissions for area and energy emissions have been modeled.

Source: Refer to Appendix A, *Air Quality Emissions Data*, for assumptions used in this analysis.

Area Source Emissions

Area source emissions would be generated due to an increased demand for consumer products, architectural coating, and landscaping. As shown in Table 4.2-2, unmitigated area source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed project. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.2-2, unmitigated energy source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Conclusion

As indicated in Table 4.2-2, unmitigated operational emissions from the proposed project would not exceed SCAQMD thresholds. If stationary sources, such as backup generators, are installed on-site, they would be required to obtain the applicable permits from SCAQMD for operation of such equipment. The SCAQMD is responsible for issuing permits for the operation of stationary sources in order to reduce air pollution, and to attain and maintain the national and California ambient air quality standards in the Basin. Backup generators would be used only in emergency situations, and would not contribute a substantial amount of emissions capable of exceeding SCAQMD thresholds. Therefore, with implementation of project-level mitigation measure AQ-1, operational air quality impacts would be reduced to a less than significant level.

c) Cumulatively Considerable Net Increase of Any Criteria Pollutants: Less Than Significant Impact with Project-level Mitigation Incorporated

With respect to the proposed project's construction-related air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the 2012 AQMP pursuant to Federal Clean Air Act mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements, and implement all feasible mitigation measures (see AQ-1). Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the proposed project would comply with adopted 2012 AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects throughout the Basin, which would include related projects.

As discussed previously, the proposed project would not result in long-term air quality impacts, as emissions would not exceed the SCAQMD adopted operational thresholds. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, with implementation of project-level mitigation measure AQ-1, cumulative operational impacts associated with implementation of the proposed project would be reduced to a less than significant level.

d) Sensitive Receptors: Less Than Significant Impact

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The closest on-campus sensitive receptors near the project site include surrounding classrooms and Aldrich Park. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction and operations impacts (area sources only). The CO hotspot analysis following the LST analysis addresses localized mobile source impacts.

LOCALIZED SIGNIFICANCE THRESHOLDS (LST)

LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST screening lookup tables for one, two, and five-acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project is located within Source Receptor Area (SRA) 20, Central Orange County Coastal.

Construction

The SCAQMD guidance on applying CalEEMod to LSTs specifies the amount of acres a particular piece of equipment would likely disturb per day. Based on the SCAQMD guidance on applying CalEEMod to LSTs, the project would disturb at most 1.2 acres of land per day. Therefore, the LST threshold for one acre was utilized for the construction LST analysis. The closest sensitive receptors to the project site are surrounding classrooms and Aldrich Park adjacent to the project site. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive uses are adjacent to the project site, the lowest available LST values for 25 meters were used. Table 4.2-3, Localized Significance of Construction Emissions, shows the localized unmitigated and mitigated construction-related emissions. It is noted that the localized emissions presented in Table 4.2-3 are less than those in 4.2(b) Table 4.2-1 above because localized emissions include only on-site emissions (i.e., from construction equipment and fugitive dust), and do not include off-site emissions (i.e., from hauling activities). As seen in Table 7, mitigated on-site emissions would not exceed the LSTs for SRA 20.

Operations

For project operations, the one-acre threshold was conservatively utilized, as the project site is approximately 1.2 acres. As the nearest sensitive uses are adjacent to the project site, the most conservative LST values for 25 meters were used. As seen in Table 4.2-4, Localized Significance of Operational Emissions, project-related operational area source emissions would be negligible and would be below the LSTs. Therefore, operational LST impacts would be less than significant.

Table 4.2-3
Localized Significance of Construction Emissions

Source	**Pollutant (pounds/day)[1]**			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
2016				
Total Unmitigated On-Site Emissions[2,3]	28.26	21.50	5.68	3.54
Total Mitigated On-Site Emissions[2,3]	28.26	21.50	2.82	1.97
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***
2017				
Total Unmitigated On-Site Emissions[3]	19.79	13.18	5.61	3.47
Total Mitigated On-Site Emissions[3]	19.79	13.18	2.75	1.90
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***
2018				
Total Unmitigated On-Site Emissions[4]	12.31	11.99	0.84	0.82
Total Mitigated On-Site Emissions[4]	12.31	11.99	0.84	0.82
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction, the distance to sensitive receptors, and the source receptor area (SRA 8).
2. The Demolition Phase represents the worst case scenario for NO_X and CO.
3. The Grading Phase represents the worst case scenario for PM_{10}, and $PM_{2.5}$.
4. The Building Construction Phase represents the worst case scenario for CO, PM_{10}, and $PM_{2.5}$.

Table 4.2-4
Localized Significance of Operational Emissions

Source	**Pollutant (pounds/day)1,2**

	NOX	CO	PM10	PM2.5
Area Source Emissions	0.00	0.13	0.00	0.00
Localized Significance Threshold2	92	647	1	1
Thresholds Exceeded?	No	No	No	No

Notes:
1. The proposed project does not include hearths.
2. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NOX, CO, PM10, and PM2.5. The Localized Significance Threshold was based on the total acreage, the distance to sensitive receptors, and the source receptor area (SRA 20).

CARBON MONOXIDE HOTSPOTS

Intersection Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

The City is located in the South Coast Air Basin (Basin), which is designated as an attainment/maintenance area for the federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the Federal Attainment Plan for Carbon Monoxide (CO Plan) for the SCAQMD's 2003 AQMP. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the

35-ppm 1-hr CO federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the vicinity of the project site as the project would not result in new vehicle trips (i.e., the new classroom building would serve the existing faculty/staff and student population). Therefore, impacts would be less than significant.

e) Objectionable Odors: Less than Significant Impact

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short-term in nature and cease upon project completion. Therefore, any impacts to existing adjacent land uses would be short-term and are less than significant. No mitigation is required.

Mitigation Measures

AQ-1: Prior to initiating 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 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:

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

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

xix. 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.

xx. 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.

xxi. 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.

4.3 Biological Resources

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) 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 Wildlife or U.S. Fish and Wildlife Service?			X		
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 Wildlife or US Fish and Wildlife Service?					X
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?					X

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					**X**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?					**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?					**X**

Discussion

Biological resources issues are discussed in Section 4.3 of the 2007 LRDP EIR.

a) Sensitive Species: Less than Significant Impact with Project-level Mitigation Incorporated

The project site is located within the Academic Core, a previously developed and urbanized area of the campus; however, Founders' Court would be modified and some existing ornamental vegetation would be removed.. Although this vegetation is not considered sensitive, bird species may occur during the nesting season, which are protected under the Migratory Bird Treaty Act (MBTA). Therefore, compliance with project-specific mitigation measure BIO-1 would reduce potential impacts to sensitive species to a less than significant level.

b) Riparian Habitat: No Impact

c) Wetlands: No Impact

The project site has been previously developed and is located in the built-out and urbanized Academic Core of the campus. Furthermore, biological surveys conducted for the 2007 LRDP EIR concluded that no riparian or wetland habitat exists on the project site (page 4.3-9). Therefore, the proposed project would not affect riparian or wetland habitats and no impact would occur. No mitigation is required.

d) Wildlife Corridors: No Impact

The 2007 LRDP EIR determined that the campus is bordered by mixed use, residential uses, and roadways with limited wildlife movement corridors in the vicinity. The project site is also more than a mile from drainage culverts that were placed under the State Route 73 (SR-73) Toll Road to support movement between the Bonita Canyon Wetland areas, San Joaquin Hills, and the Natural Community Conservation Plan Reserve System lands on the campus (LRDP EIR, page 4.3-47). Therefore, the proposed project would not interfere with wildlife corridors and no impact would occur. No mitigation is required.

e) Conflict with Applicable Policies: No Impact

There are no LRDP, State, or federal policies that apply to the Academic Core. Therefore, the proposed project would not conflict with policies protecting biological resources and no impact would occur. No mitigation is required.

f) Conflict with a Natural Community Conservation Plan or Habitat Conservation Plan: No Impact

The East Campus is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat conservation plan. Therefore, no impacts would occur. No mitigation is required.

Mitigation Measures

BR-1: If construction occurs during the nesting season (February 1 through August 31), pre-constructing surveys for active nests shall be performed within 30 days prior to the commencement of any clearing or grading activities at locations within 500 feet of the approved limits of disturbance where suitable nesting habitat exists. Construction activities within 300 feet of active nests shall be monitored by a qualified biologist until the biologist determines that the nest is no longer active. Construction may encroach within the 300-foot buffer only at the discretion of the biologist.

4.4 Cultural Resources

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?					X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X			
d) Disturb any human remains, including those interred outside of formal cemeteries?				X	
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?				X	

Discussion

Cultural resources issues are discussed in Section 4.4 of the 2007 LRDP EIR.

a) Historical Resources: No Impact

No historical resources exist on or adjacent to the project site (LRDP EIR, page 4.4-15). Therefore, impacts to historical resources would not occur. No mitigation is required.

b) Archaeological Resources: Project Impact Adequately Addressed in EIR

Recorded archaeological resources located within the UCI campus are summarized in Table 4.4-1 of the 2007 LRDP EIR. Four archaeological sites have been discovered and recorded in the Academic Core. Data and artifacts from both have been recovered and no further archaeological testing is required. To date, with extensive grading that occurred on-site from 1963 to 1965, there has been no evidence of any archaeological resources within or adjacent to the project limits. There is some possibility, however, that unknown archaeological remains could occur beneath the ground surface (LRDP EIR, page 4.4-4).

Earth moving activities could possibly uncover previously undetected archaeological remains associated with prehistoric cultures. A loss of a significant archaeological resource could result if such materials are not properly identified. Therefore, monitoring during grading by a qualified archaeologist through implementation of LRDP EIR mitigation measure Cul-1C would reduce impacts to archaeological resources to a less than significant level.

c) Paleontological Resources: Project Impact Adequately Addressed in EIR

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

Given the geological setting and recognized high sensitivity for vertebrate and invertebrate fossils in this area of the campus, excavation operations, such as trenching and/or tunneling that cut into geologic formations, might expose fossil remains. According to the 2007 LRDP EIR, any project involving excavation into either the Topanga Formation or the terrace deposits could have an adverse effect on paleontological resources. Therefore, implementation of LRDP EIR mitigation measures Cul-4A, Cul-4B, and Cul-4C would reduce impacts to paleontological resources to a less than significant level (LRDP EIR, page 4.4-20).

d) Human Remains: Less than Significant Impact

Human remains may be uncovered during earth moving activities associated with construction of the project. In the event that human remains are discovered during construction, UCI would comply with Section 7.50.5 of the California Health and Safety Code, which requires notification of the County Coroner to determine whether the remains are of forensic interest. If the Coroner, with the aid of a supervising archeologist, determines that the remains appear to be of a Native American, s/he would contact the Native American Heritage Commission (NAHC) for further investigation and proper recovery of the remains. Therefore, compliance with the California Health and Safety Code would reduce potential impacts to human remains to a less than significant level. No mitigation is required.

e) Tribal Cultural Resources: Less than Significant Impact

In accordance with AB 52, notification letters were mailed to the Gabrieleño Band of Mission Indians – Kizh Nation and Juaneño Band of Mission Indians – Acjachemen Nation on December 22, 2015. UCI received a letter on January 18, 2016 from the Gabrieleño Band of Mission Indians requesting that an affiliated Native American monitor be on-site during ground disturbance activities. UCI will continue to consult with the Gabrieleño Band of Mission Indians regarding their interest in an on-site tribal monitor.

As discussed in 4.4(b) above, there is no evidence of archaeological resources within or adjacent to the project site, which has been disturbed. For these reasons, UCI does not anticipate encountering tribal resources during construction of the project. Additionally, the implementation of LRDP EIR mitigation measure Cul-1C (hiring a qualified archaeologist to monitor ground-disturbing activities and to ensure the protection of any resources that may be discovered) would reduce any potentially significant impact to a less than significant impact, as described in the LRDP EIR. Therefore, impacts on tribal resources would be less than significant.

Mitigation Measures

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 archaeological 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:

a. Perform appropriate technical analyses;

b. File an resulting reports with South Coast Information Center; and

c. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.

Cul-4A: Prior to grading or excavation for future project that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontology 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 ay 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.

4.5 Geology and Soils

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) 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.				**X**	
ii) Strong seismic ground shaking?				**X**	
iii) Seismic-related ground failure, including liquefaction?				**X**	
iv) Landslides				**X**	
b) Result in substantial soil erosion or the loss of topsoil?				**X**	

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X	
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?				X	
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?					X

Discussion

Geology and soils issues are discussed in Section 4.5 of the 2007 LRDP EIR.

a) Expose People or Structures

i) - iv) Fault Rupture, Seismic Ground Shaking, Liquefaction, Landslides: Less than Significant Impact

No active or potentially active earthquake faults have been identified on the UCI campus through the State Alquist-Priolo Earthquake Fault Zoning Act program. A locally mapped fault trace, known as the "UCI Campus Fault" is located east of the project site. A Restricted Use Zone (RUZ) extending 50 feet beyond both sides of this fault has been established to protect new development near the fault (LRDP EIR, pages 4.5-8 through 9). The RUZ does not extend west into the project site.

The entire campus, like most of southern California, is located in a seismically active area, where strong ground shaking could occur during movements along any one of several faults in the region. An earthquake of magnitude 7.5 on the Richter scale could occur along the Newport-Inglewood Fault, the nearest major fault located approximately 4.5 miles southwest of the campus. Earthquakes along the San Andreas Fault, about 35 miles northeast of the campus could generate an 8.0 magnitude level of energy, and movement along the San Jacinto Fault, about 30 miles away, could release ground motion energy estimated at 7.5 on the Richter scale (LRDP EIR, page 4.5-2). The 2007 LRDP FEIR indicates that a majority of soils on the UCI campus are characterized as dense terraced deposits, which are unlikely to be subject to liquefaction. The 1997 and 1998 Seismic Hazard Zones Maps prepared by the California Geological Survey indicate that slopes in the South Campus area are not susceptible to potential earthquake-induced landslides (LRDP EIR, page 4.5-9).

Since the project site is not located within the RUZ or in the immediate vicinity of any known active faults, this project would have no impact involving a fault rupture (LRDP EIR, page 5.5-9). An earthquake along any number of local or regional faults could generate strong ground motions at the subject site that could dislodge objects from walls, ceilings, and shelves or even damage and destroy buildings and other structures. People residing in the proposed development could be exposed to these hazards. However, grading, foundation, and building structure elements would be designed to meet or exceed the California Building Code (CBC) seismic safety standards. In addition, UCI has adopted a number of programs and procedures to reduce the hazards from seismic shaking including through compliance with the UC Seismic Safety Policy. As such, compliance with these regulatory standards would ensure that hazards associated with seismically induced ground shaking are reduced to a less than significant level (LRDP EIR, page 4.5-9). Therefore, compliance with the CBC, the UC Seismic Safety Policy, and implementation of recommendations in a site-specific geotechnical investigation would reduce any potential hazards associated with liquefaction or landslides to a less than significant level (LRDP EIR, page 5.5-9). No mitigation is required.

b) Soil Erosion: Less than Significant Impact

As noted in the LRDP EIR, earth-disturbing activities associated with the project's installation would be temporary. The project would comply with the CBC, which regulates 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 EIR concluded that with implementation of these routine control measures potential construction-related erosion impacts would be less than significant (LRDP EIR, page 4.5-10). Therefore, impacts due to soil erosion would be less than significant. No mitigation is required.

c) Soil Instability: Less than Significant Impact

Although the proposed project site has been previously developed, if loose or compressible soil materials occur on site, they may be subject to settlement under increased loads, or due to an increase in moisture content from site irrigation or changes in drainage conditions. Typical measures to treat such unstable materials involve removal and replacement with properly compacted fill, compaction grouting, or deep dynamic compaction. A site-specific geotechnical investigation would be conducted and any recommendations therein implemented, in accordance with the CBC. Therefore, impacts associated with unstable materials would be reduced to a less than significant level. No mitigation is required.

d) Expansive Soils: Less than Significant Impact

Expansive topsoils are prevalent on campus and are generally a dark brown sandy clay, clayey sand, or lean clay, which can be detrimental to foundations, concrete slabs, flatwork, and pavement. Topsoil throughout the campus is highly expansive, ranging from 8 to 12% swell with an underlying material generally consisting of non-expansive to moderately expansive terrace deposits with a swell ranging from 0 to 8%.

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 geotechnical investigations and soils testing to be conducted as part of the routine final design process would determine the extent of any expansive or compressible soils that occur on the site. Therefore, adherence to the CBC would reduce impacts due to expansive soils to a less than significant level. No mitigation is required.

e) Septic Tanks or Alternative Waste Disposal Systems: No Impact

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). Therefore, the proposed project would not provide a sanitary waste disposal system and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures required.

4.6 Greenhouse Gas Emissions

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?					X

Discussion

In March 2010, the CEQA Guidelines were revised to require analysis of greenhouse gas (GHG) emissions. Because it was not required at the time the 2007 LRDP EIR was adopted, a GHG analysis was not included. GHG emissions are addressed in this section and uses a project-specific Greenhouse Gas Assessment prepared by Michael Baker International, Inc. (Appendix B).

a) Greenhouse Gas Emissions: Less than Significant Impact

Project-related GHG emissions would include emissions from direct and indirect sources. The proposed project would result in direct and indirect emissions of CO_2, N_2O, and CH_4, and would not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation. Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. Project GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), which relies on trip generation data, and specific land use information to calculate emissions. Table 4.6-1, Estimated Greenhouse Gas Emissions, presents the estimated CO_2, N_2O, and CH_4 emissions of the proposed project.

Table 4.6-1
Estimated Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total Metric Tons of CO_2eq
	Metric Tons/yr[1]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	
Direct Emissions						
• Construction (amortized over 30 years)	13.76	0.00	0.00	0.00	0.00	13.76
• Area Source	0.03	0.00	0.00	0.00	0.00	0.03
• Mobile Source	0.00	0.00	0.00	0.00	0.00	0.00
Total Mitigated Direct Emissions[3]	***13.76***	***0.00***	***0.00***	***0.00***	***0.00***	***13.76***
Indirect Emissions						
• Energy	365.28	0.02	0.50	0.00	0.00	365.80
• Water Demand	24.83	0.09	2.30	0.00	0.00	27.22
• Solid Waste Generation	47.64	2.82	70.50	0.00	0.00	120.96
Total Mitigated Indirect Emissions[3]	***437.75***	***2.93***	***73.30***	***0***	***0***	***513.98***
Total Mitigated Project-Related Emissions[3]	***527.77 $MTCO_2eq/yr$***					
Mitigated GHG Emissions Exceed Threshold?	***No***					

Notes:
1. Emissions calculated using CalEEMod.
2. CO_2 Equivalent values calculated using the EPA Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator, accessed March 15, 2016.
3. Totals may be slightly off due to rounding.

Project Design Features

It is noted that the GHG emissions calculated in CalEEMod, as shown Table 4.6-1, include project design features that would reduce project-related operational GHG emissions. The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story educational building on the UCI campus that would serve the existing UCI student and faculty population, and would provide pedestrian and bicycle connections to existing on-campus pedestrian/bicycle paths contiguous with the project site. The project would incorporate water conservation measures, such as low-flow faucets, toilets, use of reclaimed water, and water-efficient landscaping and irrigation systems. In addition, the project would meet or exceed the Leadership in Energy and Environmental Design (LEED) Silver rating, and utilize high-efficiency lighting and energy efficient appliances in compliance with the UC Sustainable Practices Policy.

Reduction measures applied in CalEEMod and accounted for in Table 4.6-1 from project design features include the following:

- Improved destination accessibility, as the project site is located within 0.30 miles of job center;
- Pedestrian connections to the off-site circulation network;
- Implement Trip Reduction Program;
- Employee Vanpool/Shuttle;
- Provide Ride Sharing Program;
- Low VOC paint;
- Water-efficient irrigation systems;
- 20 percent outdoor water usage reduction;
- Reclaimed water used for 100 percent of outdoor water use;
- Low-flow faucets, toilets, and showers;
- Install High-Efficiency Lighting.

Direct Project-Related Sources of Greenhouse Gases

- Construction Emissions. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.[1] As seen in Table 4.6-1, the proposed project would result in 412.80 $MTCO_2eq$, which represents 13.76 $MTCO_2eq$ per year when amortized over 30 years.
- Area Source. Area source emissions were calculated using CalEEMod and project-specific land use data. As noted in Table 4.6-1, the proposed project would not result in 0.03 $MTCO_2eq$ per year of area source GHG emissions.
- Mobile Source. As noted above, the project would not generate any new vehicle trips, as the new educational facility would be used by the existing UCI faculty and student population. Therefore, the project would not result in any mobile source emissions.

Indirect Project-Related Sources of Greenhouse Gases

- Energy Consumption. Energy consumption emissions were calculated using the CalEEMod model and project-specific land use data. Electricity would be provided to the

[1] The project lifetime is based on the standard 30 year assumption of the South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold,* October 2008.

project site via Southern California Edison (SCE). The project would indirectly result in 365.80 $MTCO_2eq$ per year due to energy consumption.

- Water Demand. The project operations would result in a demand of approximately 7.06 million gallons of water per year. Emissions from indirect energy impacts due to water supply would result in 27.22 $MTCO_2eq$ per year.

- Solid Waste. Solid waste associated with operations of the proposed project would result in 120.96 $MTCO_2eq$ per year.

Total Project-Related Sources of Greenhouse Gases

As depicted in Table 4.6-1, the project's GHG emissions would be 527.77 $MTCO_2eq$ per year and would not exceed the SCAQMD's 3,000 $MTCO_2eq$ per year GHG threshold. Therefore, impacts due to the generation of greenhouse gases would be less than significant. No mitigation is required.

b) Conflict with a Greenhouse Gas Plan, Policy, or Regulation: No Impact

UCI adopted a Climate Action Plan (CAP) in 2007 (updated in 2013) in cooperation with AB 32, and has guided an array of climate action protection strategies and projects to reduce UCI GHG emissions. The purpose of this CAP is to identify UCI's long-term vision and commitment to reduce its GHG emissions in support of the University of California Sustainability Practices Policy and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 40 percent from emissions levels or a total of 79,000 annual metric tons), and ultimately achieve climate neutrality (zero net emissions) by 2050. The CAP does not contain GHG thresholds. However, as the project-related GHG emissions are below the SCAQMD's 3,000 $MTCO_2eq$ per year threshold (in compliance with AB 32), the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, the proposed project would not conflict with a greenhouse gas plan, policy, or regulation and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.7 Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				**X**	
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?				**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?					**X**
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?					**X**

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X	
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?				X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		X			
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?				X	

Discussion

Hazards and hazardous materials issues are discussed in Section 4.6 of the 2007 LRDP EIR.

a) Transport, Use, Disposal of Hazardous Materials: Less than Significant Impact

b) Release of Hazardous Materials: Less than Significant Impact

Long-term hazards would most likely be storage, use and disposal of minor quantities of typical educational facilities hazardous materials, such as interior and exterior paints and cleaning supplies.

Temporary, short-term related hazards would be limited to transport, storage, use and disposal of fuels, solvents, paints and other coating materials used during construction. The contractor ensures responsibility, as part of the contract, that hazardous materials and waste are handled, stored, and disposed of in accordance with all applicable federal, State, and local laws and regulations and routine construction control measures (LRDP EIR, page 4.6-7). Significant hazards from materials stored within classroom buildings are considered unlikely.

Therefore, compliance with federal, State, and local regulation would reduce potential impacts from the release of hazardous materials to a less than significant level. No mitigation is required.

c) Proximity to Schools: No Impact

There are no schools located within one-quarter mile of the project site. Furthermore, as discussed in 4.7(a) and 4.7(b) above, the proposed housing project would not generate hazardous emissions or handle large quantities of hazardous materials. Therefore, the proposed project would not emit large hazardous emissions in proximity to a school and no impact would occur. No mitigation is required.

d) Hazardous Materials Sites: No Impact

The 2007 LRDP EIR concluded that there are no recorded hazardous sites on or within the immediate vicinity of the project site, and according to the UCI Office of Environmental Health and Safety, no other known hazardous materials exist on-site (LRDP EIR, page 4.6-32). Furthermore, review of the State Department of Toxic Substance Control[1] confirms there are no hazardous materials sites located on the project site. Therefore, there are no listed hazardous materials sites and no impact would occur. No mitigation is required.

e) Airport Land Use Plan: Less than Significant Impact

f) Private Airstrip: Less than Significant Impact

The closest airport, John Wayne Airport (JWA), is located three miles northwest of the project site. No private airstrips are located within the vicinity.

[1] http://geotracker.waterboards.ca.gov/. Accessed March 30, 2016.

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 (LRDP EIR, page 4.6-33). Therefore, impacts due to the proximity to an airport or private airstrip would be less than significant. No mitigation is required.

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

Construction-related road closures are not anticipated and would not obstruct access by emergency vehicles to the project site or nearby residential areas; however, if temporary road closures are deemed necessary by the contractor, compliance with LRDP EIR mitigation measure Haz-6A would ensure sufficient notification to the UCI Fire Marshall to allow coordination of emergency services that may be affected (LRDP EIR, page 4.6-34). Furthermore, the proposed project would follow UCI's Emergency Response Plan that addresses roles and responsibilities, communications, training, and procedures in order to respond to emergency situations. Therefore, with implementation of LRDP EIR mitigation measure Haz-6A, potential impacts to emergency response on or surrounding the campus would be reduced to a less than significant impact.

h) Wildland Fires: Less than Significant Impact

The proposed project site is located on a previously developed and urbanized area of the campus. The LRDP EIR indicated that areas prone to fire within the Academic Core are vegetation communities such as coastal sage scrub and grassland (4.6-35), none of which exist on or adjacent to the project site. Therefore, impacts due to wildlife would be less than significant. No mitigation is required.

Mitigation Measures

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

4.8 Hydrology and Water Quality

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Violate any water quality standards or waste discharge requirements?		**X**			
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)?					**X**
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?		**X**			
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		**X**			

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?		**X**			
f) Otherwise substantially degrade water quality?				**X**	
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?					**X**
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?					**X**
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?				**X**	
j) Inundation by seiche, tsunami, or mudflow?				**X**	

Discussion

Hydrology and water quality issues are discussed in Section 4.7 of the 2007 LRDP EIR.

a) Water Quality Standards: Project Impact Adequately Addressed in LRDP

EIR

The proposed project would potentially generate water quality impacts related to construction and post-construction conditions. Construction of the project could result in additional sources of polluted runoff through site clearing and grading, stockpiling of soils and materials, painting, concrete pouring, and asphalt surfacing (LRDP EIR, page 4.1-21). Site development would generate new sources of urban runoff from the project's impervious surfaces and landscaped areas. Runoff from the residential sites would be directed into a local storm drainage network.

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

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

Landscaping when installed could also result in water quality impacts due to the use of fertilizers. If fertilizers are discharged, they could adversely affect aquatic plants and animals downstream in receiving waters through a reduction in oxygen levels and an increase in eutrophication. Eutrophication is the process of over-enrichment of nutrients in a water body fostering an increase in biotic life that results in a significant loss of dissolved oxygen (LRDP EIR, page 4.7-21).

All construction activities would be carefully managed to prevent runoff containing soil and vegetation materials and construction wastes. In accordance with a Stormwater Pollution Prevention Plan (SWPPP) prepared to satisfy the conditions of the statewide General Construction Storm Water Permit storm water management practices would mitigate the project's construction related impacts to less than significant (LRDP EIR, page 4.7-22).

This project would not generate any point sources of wastewater or other liquid or solid water contaminants. All of the wastewater that would be generated would be discharged into a local sanitary sewer system that would convey the flows into Irvine Ranch Water District's (IRWD) regional wastewater collection and treatment system.

Implementation of the construction control measures to be specified in the project's SWPPP as required under the General Construction Storm Water Permit program, and installation/maintenance of the post-construction BMPs to be specified in the project's water quality management plan would ensure that runoff from the developed site does not violate any water quality standards. Potential impacts to San Diego Creek related to the project's post-construction activities would be reduced to below a level of significance with implementation of LRDP EIR mitigation measure Hyd-2A and Hyd-2B.

Therefore, in compliance with the storm water permits described above and implementation of LRDP EIR mitigation measures Hyd-2A and Hyd-2B, construction and post construction impacts would be reduced to a less than significant level.

b) Groundwater: No Impact

UCI does not use groundwater and instead obtains water provided by IRWD. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the EIR was not required (LRDP EIR, page 4.7-27). Therefore, the proposed project would not affect groundwater tables and no impact would occur. No mitigation is required.

c) Erosion On or Off-site: Project Impact Adequately Address in LRDP EIR

Features that control run-off volumes and durations to minimize or eliminate erosion and siltation would be depicted on final construction plans. All slopes would be fully landscaped and energy dissipaters and other control devices will be incorporated as needed. Drainage control measures would be implemented during rough grading to ensure that discharge volumes and durations are controlled on newly graded channels. Strategies such as desiltation basins, rip-rap, sandbag chevrons, straw waddles, etc. would be incorporated into the project's SWPPP both during and after grading. Therefore, potential erosion or siltation impacts during and following construction would be reduced to less than significant level through compliance with the conditions of the General Construction Storm Water Permit and LRDP EIR mitigation measures Hyd-2A and 2B. Therefore, impacts due to erosion would be reduced to a less than significant level.

d) Substantially Alter Drainage Pattern: Project Impact Adequately Address in LRDP EIR

The project site is located within a developed and urbanized area of the campus; however, a portion of the project site is developed with landscaped and pervious surfaces. This would be developed with impervious surfaces that may increase the rate and amount of runoff. To avoid significant flooding impacts on or off site the proposed storm drainage system would be designed in accordance with the drainage criteria set forth in LRDP EIR mitigation measure Hyd-1A. The drainage system would be built to maintain or reduce the peak runoff from 25-year and 100-year storm events. Additional hydrological analysis would be conducted as part of the final design process to specify all primary and secondary drainage control facilities required to satisfy flood control criteria. Therefore, with implementation of Hyd-1A, impacts to the alteration of the drainage pattern would be reduced to a less than significant level.

e) Drainage System Capacity/Substantial Additional Polluted Runoff: Project Impact Adequately Address in LRDP EIR

As stated in Section 2.0, Project description, construction of the project would include a storm water drainage system in order to address the increase in impermeable surfaces as part of the development of project site. The on-site drainage system, as discussed in 4.8(d), would be designed to provide sufficient capacity to manage the level of water runoff anticipated upon completion of construction and a plan would be finalized during the design phase. Therefore, with implementation of Hyd-1A, impacts due to additional polluted runoff would be less than significant. No mitigation is required.

f) Substantially Degrade Water Quality: Less than Significant Impact

Refer to the previous responses to items 7a-7e. There are no other project elements that would affect the water quality of the site or its surroundings. Therefore, in compliance with the NPDES, impacts to water quality would be less than significant. No mitigation is required.

g) Place Housing with a 100-year Flood Hazard Area: No Impact

The campus, including the project site, is located in a FEMA Flood Zone X. This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the EIR was not required (LRDP EIR, page 4.7-27). Therefore, the proposed project would not place housing within a 100-year flood hazard area no impact would occur. No mitigation is required.

h) Place Structures within a 100-year Flood Hazard Area: No Impact

Because there are no 100-year flood hazard areas on the UCI campus, the proposed 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 EIR was not required (LRDP EIR, page 4.7-27). Therefore, the proposed project would not place structures in a 100-year flood hazard area no impact would occur. No mitigation is required.

i) Expose People or Structures to a Significant Risk Involving Flooding: Less than Significant Impact

Because the project site is not within a levee or dam inundation area, the proposed project would not expose people or structures to risk due to flooding. The LRDP EIR determined that it is unlikely that flooding because of dam or levee failure would have an effect on the campus due to its height above mean sea level (msl). This issue was adequately addressed in the 2007 LRDP Initial Study and further analysis in the EIR was not required (LRDP EIR, page 4.7-27). Therefore, impacts due to exposure of people or structures to flooding would be less than significant. No mitigation is required.

j) Seiche, Tsunami, or Mudflow: Less than Significant Impact

UCI is located approximately three miles from the Pacific Ocean and sufficient evacuation notice would be provided by the West Coast and Alaska Tsunami Warning Center in the occurrence of a tsunami. The site is not located in an area threatened by potential seiche conditions and is relatively flat, which is unconducive to mudflows (LRDP EIR, pages 4.7-24 through 25). Therefore, impacts due to exposure of people or structures to seiche, tsunami, or mudflow would be less than significant. No mitigation is required.

Mitigation Measures

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:

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.

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.

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

- Proper storage, use, and disposal of construction materials.
- Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter.
- Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.
- Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures.

- Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures.
- Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures).
- Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping.
- Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.

Hyd-2B: Prior to project design approval for future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or more, the UCI shall ensure that the projects include the design features listed below, or their equivalent, in addition to those listed in mitigation measure Hyd-1A. Equivalent design features may be applied consistent with applicable MS4 permits (UCI's Storm Water Management Plan) at that time. All applicable design features shall be incorporated into project development plans and construction documents; shall be operational at the time of project occupancy; and shall be maintained by UCI.

- 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.
- Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment.
- 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.
- 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.

4.9 Land Use and Planning

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Physically divide an established community?					**X**
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?					**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?					**X**

Discussion

Land use and planning issues are discussed in Section 4.8 of the 2007 LRDP EIR.

a) Divide an Established Community: No Impact

The proposed project site is designated in the 2007 LRDP as Academic and Support Services and is surrounded by on-campus uses. Humanties Gateway lies to the north; Humanties Hall to the east; Founders' Court, Aldrich Park, and Steinhaus Hall to the south; and the Greenhouse to the west of the project site.

The proposed project would not affect the land use pattern of the surrounding community, either on or off campus. No streets would be built or removed, and no existing pedestrian or bicycling trail connections would be eliminated. The proposed project would complement the existing uses by constructing a consistent and similarly designed education facility on the campus and provide pedestrian and bicycle linkages to the existing network. Therefore, the proposed project would not divide an established community and no impact would occur. No mitigation is required.

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

The applicable land use plan is the 2007 LRDP and the University is the only agency with land use jurisdiction over projects located on the campus. As stated above, the project site is designated Academic and Support Services in the 2007 LRDP, which allows for development of classrooms and related support infrastructure. Therefore, the proposed project is consistent with the LRDP land use and no impact would occur. No mitigation is required.

c) Conflict with an Applicable Conservation Plan: No Impact

The Academic Core, including the project site, is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other land conservation plan. Therefore, the proposed project would not conflict with an applicable conservation plan and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.10 Noise

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project 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?					**X**
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		**X**			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				**X**	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		**X**			
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					**X**

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?					X

Discussion

Noise issues are discussed in Section 4.9 of the 2007 LRDP EIR.

a) Noise Standards: No Impact

The LRDP EIR uses the State of California Land Use Compatability for Community Noise Environment to address potential noise impacts (page 4.9-7). The land use categories of both schools and office building have a "normally acceptable" range of 50 to 70 dB CNEL. As discussed in the 2007 LRDP EIR, the primary increase in noise levels on and off campus would be through the increase in traffic (page 4.9-24). However, as discussed in Section 4.14, Transportation and Traffic, because the proposed project would not increase population, it would not increase the total traffic generated by the campus.

Table 4.9-4 in the 2007 LRDP FEIR provides the existing traffic noise levels and estimated LRDP's implementation levels along UCI's roadway segments. The nearest roadway to the project site, Mesa Road, has 59 dBA CNEL at 50 feet from the centerline, which is under the regulated 70 dB CNEL for office uses. The proposed project site is located approximately 700 feet from Mesa Road, and not within 60 dBA CNEL contour (LRDP EIR, page 4.9-16). Therefore, the proposed project would not conflict with a noise standard and no impact would occur. No mitigation is required.

b) Groundborne Vibration: Project Impact Adequately Addressed in the LRDP EIR

The long-term operation of the proposed project, a classroom building, would not involve railroads or substantial heavy truck operations that would generate ground-borne vibration that could be felt at surrounding uses. Therefore, the proposed project would not cause long-term vibration impacts at surrounding uses and no impact would occur.

As stated in Section 2.0, Project Description, construction of the proposed project would require the use of demolition equipment; however, pile driving would not be necessary. Construction may create a nuisance level of vibration-generated noise to existing sensitive receivers in the surrounding educational facilities. Therefore, with implementation of LRDP EIR Noi-2A, which implements standard construction noise measures, impacts due to groundborne vibration would be reduced to a less than significant level.

c) Permanent Ambient Noise: Less than Significant Impact

The proposed project would construct a new building in the Academic Core, adjacent to existing development. Existing ambient noise sources in the immediate vicinity of the project site include occasional vehicular traffic from the existing Parking Lot 7 and pedestrian traffic.

As discussed in Section 4.14, Transportation and Traffic, the proposed project would not result in an increase in population and would not increase off-campus traffic volumes. Instead, it would insignificantly alter traffic volumes in the immediate area on-campus. Due to the relatively small volume of traffic expected to be associated with the operation of the project, which preexists elsewhere on-campus, related traffic noise is not expected to result in substantial permanent increase in ambient noise levels in the project vicinity.

Noise associated with indoor activities of a classroom building would be similar to the existing uses surrounding the project site. 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. Therefore, impacts to permanent ambient noise levels would less than significant. No mitigation is required.

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

Project construction, as stated in the LRDP EIR (page 4.9-31) is projected to require conventional construction techniques and standard equipment such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous trucks. Specialized construction activities that generate unusually loud and repetitive noise such as pile driving would not be required to complete the project. A range of truck types would 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 would likely be required during the grading phase.

Construction related truck traffic would comply with the City of Irvine's Designated and Restricted Truck Routes. Sensitive uses within 500 feet of the project site include classroom space in Humanities Gateway, Humanities Hall, Steinhaus Hall, and Qureshey Research Laboratory.

As indicated in the LRDP EIR, 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 6dB per doubling of distance from the source, and project construction activities would be expected to be audible in the immediate area (LRDP EIR, page 4.9-32). Therefore, LRDP EIR mitigation measure Noi-2A would limit construction operations to daytime hours, require proper equipment maintenance and muffling devices, and place restrictions on weekend construction activities, which would reduce temporary noise impacts to a less than significant level.

e) Public Airport Noise: No Impact

As discussed in the 2007 LRDP EIR (page 4.9-33), the nearest airport, John Wayne, 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. No mitigation is required.

f) Private Airport Noise: No Impact

There are no private airstrips in the vicinity of the campus. Therefore, the proposed project would not be subject to excessive noise levels due to a private airport and no impact would occur. No mitigation is required.

Mitigation Measures

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 amto 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.

4.11 Population and Housing

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?					**X**
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?					**X**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?					**X**

Discussion

Population and housing issues are discussed in Section 4.10 of the 2007 LRDP EIR.

a) Induce Substantial Population Growth: No Impact

The proposed project would construct an educational building that would be utilized by existing on-campus faculty and students. No additional hiring of faculty or staff is anticipated with the construction of the proposed project nor would it increase the student population. Therefore, the proposed project would not induce population growth and no impact would occur. No mitigation is required.

b) Displace Existing Housing: No Impact

c) Displace a Substantial Number of People: No Impact

The proposed project would not displace any housing or people because the site currently houses a modular building used for educational purposes and an open space area known as Founders' Court. No housing exists on or adjacent to the site. Therefore, the proposed project would not displace people or require replacement housing elsewhere and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.12 Public Services

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project 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?					X
b) Police protection?					X
c) Schools?					X
d) Parks?				X	
e) Other public facilities?					X

Discussion

Public service issues are discussed in Section 4.11 of the 2007 LRDP EIR.

a) Fire Protection: No Impact

Fire protection and emergency response services to the campus are provided by the Orange County Fire Authority (OCFA). OCFA Fire Station #4, located north of the campus on the corner of California and Harvard Avenues, is the primary responder serving the campus. The station was built in 1966 and there are no plans for its expansion. According to an analysis conducted by OCFA in November 2006, this station has adequate capacity to accommodate existing demand on the main campus. The capacity of service for Station #4, as determined by OCFA, is approximately 3,500 calls per year. During 2005, UCI generated 668 calls or 30 percent of the station's calls. UCI employs a State Fire Marshal whom is responsible for the campus fire prevention practices and provides services such as plan review and construction inspections.

As discussed in Section 4.11, Population and Housing, the proposed project would not increase campus population and would not would result in an increased need for fire services. The project site is located within a five travel minute coverage area by OCFA. Fire Station #4 has a reliability of 83 percent where a unit is on-site within seven minutes and 20 seconds.[1] This is within the standard adopted by OCFA, where a unit should on-site within seven minutes and 20 seconds for 80 percent of emergency calls. Furthermore, the UCI Fire Marshal reviews and approves all development plans or each new campus project in accordance with California building and fire codes (LRDP EIR, page 4.11-7). Therefore, the proposed project would not require the need for new fire protection facilities and no impact would occur. No mitigation is required.

b) Police Protection: No Impact

The UCI Police Department (UCIPD) is located in the Public Services building on the East Campus approximately 0.5-mile east of the project site. The UCIPD provides all police services (all patrol, investigation, crime prevention education, and related law enforcement duties) for the campus (LRDP EIR, page 4.11-3).

The proposed project would not directly increase on-campus population that would result in a significant increase in the demand for police department services. Therefore, there proposed project would not require the construction of new police facilities and no impact would occur. No mitigation is required.

c) Schools: No Impact

The Irvine Unified School District (IUSD) provides kindergarten through grade 12 (-12) public education services for school age children residing on or near the UCI campus. As discussed above and in Section 4.11, Population and Housing, the proposed project would not increase campus population. Therefore, the proposed project would not require the need for new off-campus educational facilities and no impact would occur. No mitigation is required.

d) Parks: Less than Significant Impact

The proposed project includes a new pedestrian radial mall and bicycle trail that would link to the campus trail network. As discussed in previous sections, the project site does not contain any significant agricultural, biological, or cultural resources; therefore, the proposed trails would not affect such resources. Therefore, impacts due to the development of new radial mall and bicycle trail would be less than significant. No mitigation is required.

e) Other Public Facilities: No Impact

As discussed above and in Section 4.11, Population and Housing, the proposed project would not directly induce population growth. Furthermore, public facilities, such as libraries, exist on-campus and would not result in the need for the construction of new facilities within the

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[1] http://www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC_FINAL.pdf. Accessed March 2, 2016.

surrounding community. Therefore, no impact to other public facilities would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.13 Recreation

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

Discussion

Recreation issues are discussed in Section 4.12 of the 2007 LRDP EIR.

a) Physically Deteriorate Existing Facilities: Less than Significant Impact

As discussed in Section 4.11, Population and Housing, the proposed project would not increase faculty, staff, or student populations on the campus nor would it trigger new demand for recreational facilities on or off campus. Furthermore, the 2007 LRDP EIR assumed that the current level of maintenance of the Anteater Recreation Center (ARC) would continue and that substantial deterioration of the facility would not occur (page 4.12-5). Therefore, impacts to recreational facilities would be less than significant. No mitigation is required.

b) Construction of Recreational Facilities: Less than Significant

The proposed project would include a new pedestrian radial and bicycle trail that would link to the existing campus trail network. As discussed in other sections of this document, the project site does not contain any significant agricultural, biological, or cultural resources; therefore, neither the proposed radial or bicycle trail would impact these resources. Therefore, impacts due to the construction of recreational facilities would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.14 Transportation/Traffic

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) 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?				X	
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?					X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?					X

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X	
e) Result in inadequate emergency access?				X	
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?					X

Discussion

Transportation and traffic issues are discussed in Section 4.13 of the 2007 LRDP EIR. This analysis is based on the traffic study prepared by Austin-Foust Associates, Inc. (now Stantec Consulting Services, Inc.) in 2007. In addition, a 2016 project-level memo was prepared by Stantec Consulting Services, Inc. (Appendix C).

a) Performance of the Circulation System: Less than Significant Impact

The proposed Classroom Building on the UCI main campus would replace a 3,000 square-foot modular building with an approximately 75,052 square-foot, three-story building. The new building would include 1,260 classroom and lecture hall seats and 26 offices/cubicles. Parking Lot 7 would provide parking for faculty/staff and visitors. The nearest parking for students and additional faculty/staff would be Mesa Parking Structure (MPS) on Mesa Road.

The new Classroom Building would not result in an increase in the campus population of faculty, staff, or students. Because the project would not increase the campus population, potential traffic impacts from the project are concentrated in the immediate area of the site location.

The trip generation is based on the number of students likely to attend classes at the new building, number of faculty in relation to that number of students, number of faculty/staff in the offices/cubicles, and the amount of students and faculty/staff driving to the campus. It was assumed that approximately 56 percent of the classroom and lecture hall seats would be in use during the typical AM, mid-day, and PM peak hours; therefore, approximately 706 students would attend classes or lectures at the new building during the peak hours. It was further assumed in the calculations, based on information in the UCI Main Campus Traffic Model (MCTM), that half of the students are commuters although UCI's annual AQMD ridership survey revealed that UCI commuter students have an average vehicle occupancy of 1.6 persons per vehicle. The total number of students driving to classes for the proposed project during the peak hours would be approximately 221 students.

Based on the number of students, approximately 28 faculty members are estimated during the peak hours, and based on the number of offices/cubicles, 26 faculty/staff members are estimated. The UCI MCTM includes factors that estimate approximately 85 percent of faculty/staff members are commuters with vehicle occupancy of 1.1 persons per vehicle.

The trips generated by the proposed project are summarized in Table 4.14-1. As this table shows, the project would generate approximately 263 AM and PM peak hour trips and approximately 243 mid-day peak hour trips. The majority of these trips would be concentrated on-campus in the vicinity of the proposed project. This is a conservatively high estimate based on assumptions about the amount of commuter students and faculty/staff, vehicle occupancy, and preference for parking locations. Students and faculty/staff may park in other lots on-campus depending on the location of other classes during the day. Since there is no increase in the amount of students or faculty/staff on-campus as a result of the proposed Classroom Building, impacts of the off-campus trips on the arterial streets surrounding the UCI campus are accounted for in the LRDP traffic analysis.

Table 4.14-1
Trip Generation Summary

Land Use	Amount	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Proposed Project										
Classroom Building	1,260 Seat									
Students		202	19	221	99	122	221	46	175	221
Faculty		20	2	22	10	12	22	5	17	22
Office	26 Office	18	2	20	Nom.	Nom.	Nom.	4	16	20
Vehicle Total		**240**	**23**	**263**	**109**	**134**	**243**	**55**	**208**	**263**

The nearest parking lot to the proposed project is Lot 7, which provides reserved parking for UCI faculty and staff. A total of 242 spaces are provided in Lot 7 for faculty/staff vehicles (AR Permit), with 231 standard spaces, 7 handicap spaces, and 4 motorcycle spaces. There are an additional 11 spaces for campus services vehicles. Counts of vehicles in Parking Lot 7 were conducted throughout the day on March 10, 2016 to determine the existing level of parking demand in Lot 7. The parking lot counts reveal that the parking lot was approximately 90 percent full during the peak demand (1:00 PM) when 222 regular vehicles (i.e., non-campus services vehicles) were present. Therefore, approximately 20 spaces are available in Lot 7 during the peak demand. Overflow parking for faculty/staff was assumed to be in Mesa Parking Structure (MPS).

The nearest on-campus intersection to the parking for the proposed project is Mesa Road and West Peltason Drive. This on-campus intersection was evaluated for possible traffic impacts. Peak hour count data was collected at the intersection of Mesa Road and West Peltason Drive on a typical weekday in March 2016 while winter session classes were underway. Mesa Road at West Peltason Drive is a four-legged signalized intersection. The existing intersection capacity utilization (ICU) value was calculated, and the intersection is currently operating at level of service (LOS) A during the AM, mid-day, and PM peak hour (actual ICU calculation sheets are attached). The intersection currently experiences very light bicycle traffic (i.e., fewer than five bikes in all directions during the AM, mid-day, and PM peak hour) and a moderate level of pedestrian activity (50 to 100 pedestrians across West Peltason Drive) during the peak hours.

The amount of vehicular traffic attracted by the proposed project would result in a maximum of 243 new vehicles parking in the MPS. The number of new vehicles parking in MPS could be lower since some students and faculty/staff may park in other parking lots on campus. Pedestrians from MPS would cross West Peltason Drive at the Mesa Road intersection. In addition, students from Mesa Court residences might attend classes at the proposed project; however, the majority of these pedestrians currently cross West Peltason Drive at the Mesa Road intersection. The proposed project could increase the number of pedestrians crossing West Peltason Drive by approximately 380 to 450 pedestrians during the peak hours. The project is expected to increase the amount of vehicles and pedestrians at the intersection of Mesa Road and West Peltason Drive during the AM, mid-day, and PM peak hour. This traffic was added to the existing volumes, and the resulting existing-plus-project ICU calculated. The ICU calculations include a factor to account for pedestrians crossing the street at the intersection.

The amount of peak hour traffic generated by the proposed project would have no significant impact on the on-campus intersection, which would operate at LOS A or B even with the conservative assumptions made regarding vehicle traffic. Therefore, impacts to the off-campus circulation system and the on-campus intersections would be less than significant. No mitigation is required.

b) Conflict with Congestion Management Program: No Impact

The nearest elements of the Orange County Congestion Management Plan (CMP) highways and arterials network are Jamboree Road and MacArthur Boulevard, located approximately 2.5 miles and 2 miles from the southeast corner of the campus (Culver Drive/Campus Drive intersection). CMP monitoring is conducted at the intersections of Jamboree Road/I-405 northbound and southbound ramps and at Jamboree Road/ MacArthur Boulevard (LRDP FEIR VI page 4.13-23). The proposed project would not increase on-campus population. Therefore, it would not conflict with the CMP and no impact would occur. No mitigation is required.

c) Air Traffic Patterns: No Impact

The proposed project site is located approximately 1.5 miles southeast of JWA. The Initial Study prepared for the 2007 LRDP concluded that the campus is not situated under the Preferred Arrival or Departure Tracks associated with the airport and that future campus buildings would not penetrate the 100:1 Imaginary Surface for designated flight patterns (LRDP EIR VII page 25). Therefore, the proposed project would not affect air traffic patterns and no impact would occur. No mitigation is required.

d) Hazards Due to a Design Feature: Less than Significant Impact

All of the project's transportation network would be designed in accordance with the same standards applied to other elements of the campus transportation network and would have no unique aspects not anticipated in the LRDP EIR.

The project does not require any alterations to existing streets or highways; only the realignment of a preexisting service road. The 2007 LRDP EIR determined no impacts would occur from hazards due to design features or incompatible uses, which was addressed in the LRDP Initial Study (LRDP EIR, page 4.13-61). Therefore, impacts due to potential hazards of a design feature would be less than significant. No mitigation is required.

e) Inadequate Emergency Access: Less than Significant Impact

Project construction would not require complete closure of any adjacent streets; however, a service road would be realigned to the north and south of Ring Road as part of the proposed project. Emergency access by fire protection crews, ambulances, police crews, or other emergency vehicles would be maintained for the active construction zones and surrounding land uses and all closures would be reviewed by the UCI Fire Marshal. Therefore, with review of the proposed project by the UCI Fire Marshal, impacts related to emergency access would be less than significant. No mitigation is required.

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

UCI administers an extensive program of Transportation Demand Management (TDM) measures that encourage commuters to use alternate modes of transportation, including walking, bicycling, carpooling, vanpooling, and riding the UCI shuttle, other local shuttle systems, train, or bus. With these measures, UCI has been successful in achieving an average vehicle ridership higher than the AQMD regional goal (LRDP EIR, page 4.13-58). The proposed project would comply with the UC Sustainable Practices Policy, which requires each campus to incorporate alternative means of transportation to, from, and within each campus to improve the quality of life on campus and in the surrounding community. The proposed project would directly implement this policy by constructing a pedestrian radial pathway and expanding the on-campus bicycle trail network through planned linkages identified in the 2007 LRDP Circulation Element. Therefore, project effects involving alternative transportation plans, policies and programs would be beneficial and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.15 Utilities and Service Systems

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?					X
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?				X	
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?				X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X	

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X	
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X	
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?					X

Discussion

Utilities and service systems issues are discussed in Section 4.14 of the 2007 LRDP EIR.

a) Regional Water Quality Control Board Wastewater Treatment Requirements: No Impact

Wastewater from the proposed project would be discharged to the campus' sanitary sewer network, which conveys flows to the Irvine Ranch Water District (IRWD) wastewater treatment system. Wastewater from the UCI campus is treated at the Michelson Water Reclamation Plant (MWRP), which provides a tertiary level of treatment, in accordance with the wastewater treatment standards enforced by the Santa Ana Regional Water Quality Control Board (RWQCB).

Wastewater flows from the proposed educational facility would consist of the same kinds of chemical composition found in toilets, sinks, and shower outflows that are typical of institutional development uses throughout the IRWD service area. No new kinds of wastewater collection or treatment systems or processes would be required to adequately dispose of project wastewater.

Furthermore, in compliance with the General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), the campus implements a Stormwater Management Plan and all contractors must comply with UCI's Stormwater Pollution Prevention Best Management Practices (BMPs). A project-specific Stormwater Pollution Prevention Plan (SWPPP), in compliance with the RWQCB, would be completed prior to the start of construction.

Therefore, the proposed project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board and no impact would occur. No mitigation is required.

b) Construction of New Water or Wastewater Treatment Facilities or Expansion of Existing Facilities: Less than Significant Impact

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

Construction impacts would occur as part of the general site development phase while all street and utility improvements are installed. No alterations to existing main line facilities would be required to provide adequate potable or irrigation water flows to this project, or to provide sufficient sanitary sewer service. Therefore, construction of these components would not result in the construction of new or expansion of water or wastewater treatment facilities and impacts would be less than significant. No mitigation is required.

c) Stormwater Drainage Facilities: Less Than Significant Impact

A finalized stormwater drainage plan has not been completed at this time because the project is design-build; however, existing hydrology patterns on the site would be maintained to the extent practical as determined during the project's final design stage. Storm drains are anticipated to run along the northeast, southwest, and southeast sides of the structure with a storm drain line connecting to an existing storm drain southeast of the project site. However, the project is not anticipated to require the construction of stormwater drainage facilities off the project site. Furthermore, wastewater runoff and stormwater facilities are regulated by the MS4 requirements, which would be incorporated into the project. Therefore, in compliance with the MS4 permit, impacts due to stormwater drainage facilities would be less than significant. No mitigation is required.

d) Water Supplies: Less than Significant Impact

IRWD has developed an Urban Water Management Plan (UWMP, 2005) which projects district-wide water supply availability and demand through 2030. IRWD staff in consultation with UCI reviewed projected water service demand related to implementation of the 2007 LRDP for consistency with the UWMP and concluded that water supply reliability would not be compromised (LRDP EIR, page 4.14-17). Because the proposed project is consistent with the LRDP EIR, this conclusion presumes that irrigation needs throughout the campus will continue to be fully met through reclaimed water supplies. Furthermore, the proposed project would not increase on-campus population.

Although implementation of the 2007 LRDP would result in less than significant impacts to water supply, UCI continues to cooperatively and continually work with IRWD to reduce domestic water demand on campus consistent with UCI sustainability goals, as follows:

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

Therefore, because the proposed project's domestic and reclaimed water demand is consistent with the projections developed for the 2007 LRDP EIR and anticipated in the UWMP forecasts, impacts would be less than significant. No mitigation is required.

e) Wastewater Capacity: Less than Significant Impact

The MWRP currently treats up to 18 million gallons per day (mgd) of wastewater. An additional upgrade to 33 mgd is scheduled to be completed in 2025. IRWD forecast a total service area demand for wastewater treatment of 26.11 mgd by 2025, including the projected increase associated with full implementation of the 2007 LRDP. Because the proposed project is consistent with the LRDP EIR as discussed in the Project Description, with the 33-mgd upgrade, the MWRP would have sufficient capacity to accommodate the anticipated sewage generation, along with wastewater generated throughout the rest of the IRWD service area. Therefore, the impact to wastewater treatment capacity would be less than significant (LRDP EIR, pages 4.14-12 through 13). No mitigation is required.

f) Landfill Capacity: Less than Significant Impact

As of June 30, 2013, Orange County Waste & Recycling estimated remaining airspace capacity at approximately 52 million tons with an expected closure in the year 2053. The Olinda Landfill and Prima Deshecha Landfill also serve the County of Orange, which are utilized if the Frank R. Bowerman Landfill reaches daily capacity. Olinda Landfill permits 8,000 tons daily with an expected closure in 2030; Prima Deshecha Landfill is scheduled to close in 2067 and permits 4,000 tons daily.

Orange County Waste & Recycling and the three landfills are in compliance with the California Integrated Waste Management Act of 1989 (AB 939), which requires each jurisdiction to maintain 15 years of solid waste disposal capacity. Therefore, based on available landfill capacity, impacts would be less than significant. No mitigation is required.

g) Solid Waste Regulations: No Impact

UC is not subject to Assembly Bill 939 or other local agency regulations pertaining to solid waste management; nonetheless, the UC Sustainable Practices Policy has been adopted requiring campuses to undertake aggressive programs to reduce solid waste generation and disposal (LRDP EIR, 4.14- 20). 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. Therefore, the proposed project would not violate solid waste regulations and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures required.

4.16 Mandatory Findings of Significance

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				**X**	
b) 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 probably future projects?)				**X**	

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

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

As discussed under Section 4.1 through 4.13, no significant environmental impacts were identified in the responses to questions regarding project effects. The project site does not contain, support, or connect to any sensitive biological resources nor does it adversely affect any such resources. There are no historic resources on this undeveloped site and in the unexpected event that a prehistoric or archaeological resource is discovered during grading, compliance with LRDP EIR mitigation measures Cul-1C, Cul-4A, Cul-4B, and Cul-4C would reduce impacts to a less than significant level.

b) Cumulatively Considerable Impacts: Less Than Significant Impact

Long-term environmental consequences resulting from the cumulative effect of completing development through implementation of the 2007 LRDP were thoroughly evaluated in the 2007 LRDP EIR. As discussed in the project description, the project is consistent with the LRDP land use policies. No new or increased severity of impacts beyond what was anticipated in the 2007 LRDP EIR have been identified as a result of the analysis completed for this Initial Study. As discussed in Sections 4.1 through 4.13, project level impacts have been determined to be less than significant, no impact, or mitigated to a less than significant level. Therefore, the proposed project would not result in cumulatively considerable impacts.

c) Direct or Indirect Effects on Humans: Less Than Significant Impact

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

5.0 PREPARERS

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APPENDIX A

Air Quality Assessment

AIR QUALITY ASSESSMENT

UCI Classroom Building Project

PREPARED BY:

Michael Baker INTERNATIONAL

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AIR QUALITY ASSESSMENT

for the

UCI Classroom Building Project

University of California, Irvine

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April 11, 2016

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SYMBOLS, ABBREVIATIONS, AND ACRONYMS

AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
EPA	U.S. Environmental Protection Agency
FCAA	Federal Clean Air Act
hp	horsepower
HVAC	heating, ventilation, and air conditioning
I-4	Environmental Justice Enhancement Initiative
lbs	pounds
LOS	level of service
LSTs	Localized Significance Thresholds
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
PST	Pacific Standard Time
RCP	Regional Comprehensive Plan
RH	relative humidity
ROG	Reactive Organic Gasses
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Community Strategy
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	Source receptor Area
$\mu g/m^3$	micrograms per cubic meter
VMT	vehicle miles traveled
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

The purpose of this Air Quality Assessment is to evaluate potential short- and long-term air quality impacts resulting from implementation of the proposed University of California, Irvine (UCI) Classroom Building Project ("project" or "proposed project").

The proposed project is located approximately 670 feet to the southeast of the West Peltason Drive and Mesa Road intersection, on the UCI campus, in the City of Irvine, California. The project site is located approximately 1.86 miles south of Interstate 405 (405), and 0.90-mile east of State Route 73 (SR-73). The project site currently consists of a modular building and an open space area referred to as Founders' Court, and is situated between Ring Road and Inner Ring Road.

The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles. The project would provide a new bicycle path between Ring Road to the north/northwest and Inner Ring Road to the south/southwest, and would modify the accessible pedestrian path from Parking Lot 7 to the north/northwest to the project site. Vehicle service roads to the north and south of Ring Road would be realigned as part of the proposed project.

<u>Temporary Impacts</u>. Mitigated construction emissions from project implementation would not exceed established annual South Coast Air Quality Management District (SCAQMD) thresholds.

<u>Long-Term Impacts</u>. The analysis has demonstrated that project implementation would result in less than significant long-term regional and localized air quality impacts. Carbon monoxide hot-spots impacts would also be less than significant. The proposed project would result in less than significant impacts for all long-term operational emissions.

<u>Cumulative Impacts</u>. The proposed project would not result in long-term air quality impacts, as emissions would not exceed the SCAQMD adopted operational thresholds. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. The project would not result in significant operational emissions of criteria pollutants.

1.0 INTRODUCTION

The purpose of this Air Quality Assessment is to evaluate potential short- and long-term air quality impacts resulting from implementation of the proposed University of California, Irvine (UCI) Classroom Building Project ("project" or "proposed project") on the UCI campus.

1.1 PROJECT LOCATION

The proposed project is located approximately 670 feet to the southeast of the West Peltason Drive and Mesa Road intersection, on the UCI campus, in the City of Irvine, California. The project site is located approximately 1.86 miles south of Interstate 405 (405), and 0.90-mile east of State Route 73 (SR-73); refer to Exhibit 1, *Regional Vicinity*. The project site currently consists of a modular building and an open space area referred to as Founders' Court, and is situated between Ring Road and Inner Ring Road; refer to Exhibit 2, *Site Vicinity*.

1.2 PROJECT DESCRIPTION

The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles. The project would provide a new bicycle path between Ring Road to the north/northwest and Inner Ring Road to the south/southwest, and would modify the accessible pedestrian path from Parking Lot 7 to the north/northwest to the project site. Vehicle service roads to the north and south of Ring Road would be realigned as part of the proposed project.

Project Site

UCI CLASSROOM BUILDING PROJECT • AIR QUALITY ASSESSMENT

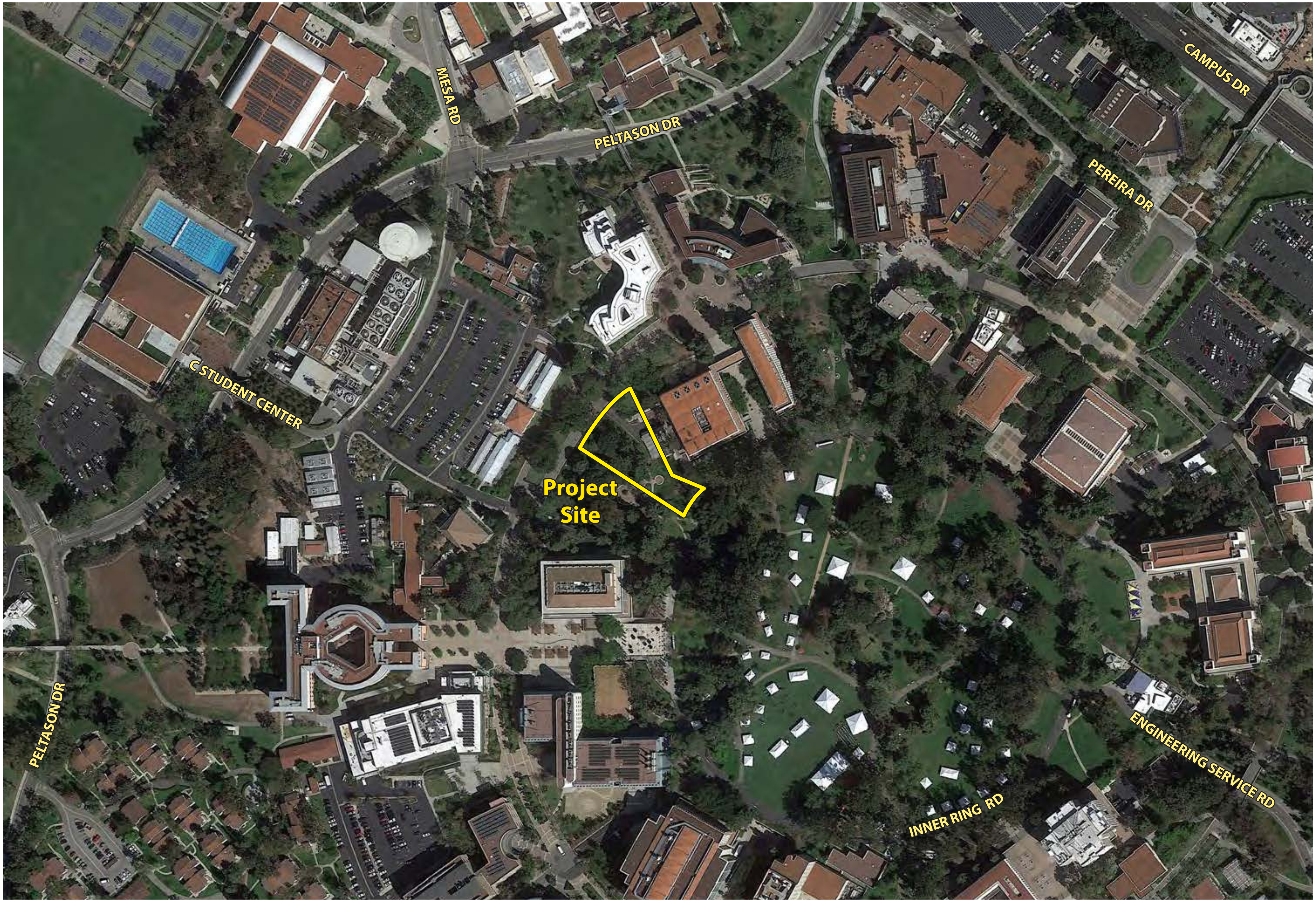
Regional Vicinity

Exhibit 1

not to scale

Michael Baker INTERNATIONAL

03/21/16 JN152595-21602 MAS



Source: Aerial - Google Earth Pro, March 2016

Michael Baker INTERNATIONAL

not to scale

03/21/16 JN152595-21602 MAS

UCI CLASSROOM BUILDING PROJECT • AIR QUALITY ASSESSMENT

Site Vicinity

Exhibit 2

2.0 ENVIRONMENTAL SETTING

The California Air Resources Board (CARB) divides the State of California into 15 air basins that share similar meteorological and topographical features. The project site lies within the northwestern portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

CLIMATE

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

The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100°F in recent years.

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O_3) observed during summer months in the

Basin. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the project is located offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

The City of Irvine (City) experiences average high temperatures of up to 83 degrees (˚) Fahrenheit (F) during the month of August, and average low temperatures of 47 ˚F during the month of December. The City experiences approximately 14.42 inches of precipitation per year, with the most precipitation occurring in the month of February.[1]

[1] U.S. Climate Data, *Climate Irvine - California*, http://www.usclimatedata.com/climate/irvine/california/united-states/usca2494, accessed on March 10, 2016.

3.0 STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

3.1 AMBIENT AIR QUALITY STANDARDS

CARB and the U.S. Environmental Protection Agency (EPA) establish ambient air quality standards for major pollutants at thresholds intended to protect public health. The standards for some pollutants are based on other values such as protection of crops or avoidance of nuisance conditions. Table 1, *State and National Ambient Air Quality Standards and Attainment Status*, summarizes the State California Ambient Air Quality Standards (CAAQS) and the Federal National Ambient Air Quality Standards (NAAQS).

CARB designates all areas within the State as either attainment (having air quality better than the CAAQS) or nonattainment (having a pollution concentration that exceeds the CAAQS more than once in three years). Likewise, the EPA designates all areas of the U.S. as either being in attainment of the NAAQS or nonattainment if pollution concentrations exceed the NAAQS. Because attainment/nonattainment is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the State and national standards differ, an area could be classified as attainment for the Federal standard of a pollutant while it may be nonattainment for the State standard of the same pollutant. Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. The attainment status of SCAQMD for CAAQS and NAAQS for the area where the proposed project is located is shown in Table 1 and is discussed in more detail below under "Ambient Air Monitoring."

3.2 AMBIENT AIR MONITORING

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet aboveground level; therefore, air quality is often referred to in terms of ground-level concentrations. The project site is located within Source Receptor Area (SRA) 20, Central Orange County Coastal. The closest air monitoring station to the project site is the Costa Mesa – Mesa Verde Drive Monitoring Station. Local air quality data from 2012 to 2014 is provided in Table 2, *Summary of Air Quality Data*. This table lists the monitored maximum concentrations and number of exceedances of Federal/State air quality standards for each year.

Ozone. Ozone (O_3) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" ozone) layer extends upward from about ten to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B). "Bad" ozone is a photochemical pollutant, and needs volatile organic compounds (VOCs), Nitrogen Oxides (NO_X) and sunlight to form; therefore, VOCs and NO_X are

Table 1
State and National Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California		Federal	
		Standard	Attainment Status	Standards	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m³)	**Nonattainment**	N/A	N/A
	8 Hours	0.070 ppm (137 μg/m³)	N/A	0.070 ppm (137 μg/m³)	**Extreme Nonattainment**
Particulate Matter (PM_{10})	24 Hours	50 μg/m³	**Nonattainment**	150 μg/m³	Attainment
	Annual Arithmetic Mean	20 μg/m³	**Nonattainment**	N/A[6]	N/A
Fine Particulate Matter ($PM_{2.5}$)[5]	24 Hours	No Separate State Standard		35 μg/m³	**Nonattainment**
	Annual Arithmetic Mean	12 μg/m³	**Nonattainment**	12.0 μg/m³	**Nonattainment**
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Attainment/Maintenance
	8 Hours	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Attainment/Maintenance
Nitrogen Dioxide (NO_2)[6]	1 Hour	0.18 ppm (339 μg/m³)	**Nonattainment**	100 ppb (188 μg/m³)	Unclassified/Attainment
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	**Nonattainment**	0.053 ppm (100 μg/m³)	Attainment/Maintenance
Sulfur Dioxide (SO_2)[7]	1 Hour	0.25 ppm (655 μg/m³)	Attainment	75 ppb (196 μg/m³)	N/A
	3 Hours	N/A	N/A	N/A	N/A
	24 Hours	0.04 ppm (105 μg/m³)	Attainment	0.14 ppm	Unclassified/Attainment
	Annual Arithmetic Mean	N/A	N/A	0.030 ppm (for certain areas)	N/A
Lead (Pb)[8, 9]	30 days average	1.5 μg/m³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 μg/m³	Attainment
Visibility-Reducing Particles[10]	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	**No Federal Standards**	
Sulfates	24 Hour	25 μg/m³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Unclassified		
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 μg/m³)	N/A		

μg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10} and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 mg/m³ 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.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m³ to 12.0 μg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m³, as was the annual secondary standard of 15 μg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On June 2, 2010, a new 1-hour SO_2 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 SO_2 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.
8. CARB 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.
9. National lead standard, rolling 3-month average: final rule signed October 15, 2008.
10. In 1989, CARB 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.

Source: California Air Resources Board and U.S. Environmental Protection Agency, October 1, 2015.

Table 2
Summary of Air Quality Data

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration[3]	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3)[1] (1-hour)	0.09 ppm for 1 hour	NA[6]	2012 2013 2014	0.090 ppm 0.095 0.096	0/0 1/0 1/0
Ozone (O_3)[1] (8-hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2012 2013 2014	0.076 ppm 0.084 0.080	1/1 2/1 6/4
Carbon Monoxide (CO)[1] (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2012 2013 2014	2.09 ppm 2.44 2.68	0/0 0/0 0/0
Carbon Monoxide (CO)[1] (8-hour)	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2012 2013 2014	1.71 ppm NA NA	0/0 NA/NA NA/NA
Nitrogen Dioxide (NO_2)[1]	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2012 2013 2014	0.074 ppm 0.076 0.060	0/0 0/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[2, 4]	No Separate Standard	35 $\mu g/m^3$ for 24 hours	2012 2013 2014	27.6 $\mu g/m^3$ 28.0 25.0	NA/[6] NA/[6] NA/[6]
Particulate Matter (PM_{10})[2, 4, 5]	50 $\mu g/m^3$ for 24 hours	150 $\mu g/m^3$ for 24 hours	2012 2013 2014	37.0 $\mu g/m^3$ 51.0 41.0	0/0 0/0 0/0

Source: Aerometric Data Analysis and Measurement System (ADAM), summaries from 2012 to 2014, http://www.arb.ca.gov/adam.

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable; * = data not available.

Notes:
1. Data collected from the Costa Mesa – Mesa Verde Drive Monitoring Station located at 2850 Mesa Verde Drive, Costa Mesa, California 92626.
2. Data collected from the Mission Viejo – 2601 Via Pera Monitoring Station located at 26081 Via Pera, Mission Viejo, CA 92691.
3. Maximum concentration is measured over the same period as the California Standards.
4. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
5. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
6. The Federal standard was revoked in June 2005.

ozone precursors. VOCs and NO_X are emitted from various sources throughout the City. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight.

Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems (such as forests and foothill plant communities) and damages agricultural crops and some man-made materials (such as rubber, paint, and plastics). Societal costs from ozone damage include increased healthcare costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause headaches, dizziness, and unconsciousness.

Nitrogen Dioxide. Nitrogen oxides (NO_X) are a family of highly reactive gases that are a primary precursor to the formation of ground-level O_3, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO_2 can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than ten microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate the lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (SB 25).

Fine Particulate Matter ($PM_{2.5}$). Due to increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the EPA announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards.

On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Reactive Organic Gases and Volatile Organic Compounds. Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

3.3 SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Table 3, *Sensitive Receptors*, lists the distances and locations of sensitive receptors within the project vicinity. The distances depicted in Table 3 are based on the distance from the project site to the outdoor activity area of the closest receptor.

Table 3
Sensitive Receptors

Type	Name	Distance from Project Site (feet)[1]	Direction from Project Site	Location
Residential	Residential Uses	1,032	North	North of the West Peltason Drive and California Avenue/Anteater Drive intersection.
		2,019	East	Northwest corner of the Campus Drive and East Peltason Drive intersection.
		1,508	East/Southeast	East of the Ring Road and Engineering Service Road intersection.
		1,883	South/Southeast	South of the East Peltason Drive and Los Trancos Drive intersection.
		1,015	Southwest	Northeast corner of the Bison Avenue and West Peltason Drive intersection.
Schools	The Chicago School of Professional Psychology – Irvine Campus	2,186	Northeast	4199 Campus Drive.
Places of Worship	Bethel Korean Church	4,100	Northeast	18700 Harvard Avenue.
Hospitals	UC Irvine Health Gottschalk Medical Plaza - Medical Center	1,420	West	1 Medical Plaza Drive.
Parks/Recreational Areas	Mesa Court Field	2,360	North	South of the Campus Drive and University Drive intersection.
	Stanford Park	2,405	North	Approximately 600 feet southeast of the University Drive and Campus Drive intersection.
	Aldrich Park	Adjoining	East/Southeast	South of Inner Ring Road.

Note:
1. Distances are measured from the exterior project boundary only and not from individual construction areas within the interior of the project site.

4.0 REGULATORY SETTING

4.1 FEDERAL

Air quality is federally protected by the Clean Air Act and its amendments. Under the Federal Clean Air Act (FCAA), the EPA developed the primary and secondary NAAQS for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The Clean Air Act requires each state to prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the Clean Air Act. If a state fails to correct these planning deficiencies within two years of federal notification, the EPA is required to develop a federal implementation plan for the identified nonattainment area or areas. The provisions of 40 CFR Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states.

4.2 STATE

In 1988, the California Clean Air Act (CCAA) was adopted and led to the establishment of CAAQS for the same major pollutants as the NAAQS and standards for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. There are currently no NAAQS for these latter pollutants. CARB is responsible for enforcing air pollution regulations in California. The CCAA requires all air pollution control districts in California to endeavor to achieve and maintain state ambient air-quality standards by the earliest practicable date and to develop plans and regulations specifying how they will meet this goal.

4.3 REGIONAL

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The *2012 Air Quality Management Plan* (2012 AQMP), which was adopted in December 2012, proposes policies and measures to achieve federal and state standards for improved air quality in the South Coast Air Basin and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under the South Coast Air Quality Management District's (SCAQMD's) jurisdiction. The AQMP relies on a regional and multi-level partnership of governmental agencies at the federal, State, regional, and local level. These agencies (EPA, CARB, local governments, Southern California Association of Governments [SCAG], and the SCAQMD) are the primary agencies that implement the AQMP programs. The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2012 Regional

Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts.

The 2012 AQMP addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2012 AQMP highlights the reductions and the interagency planning necessary to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act. The primary task of the 2012 AQMP is to bring the Basin into attainment with federal health-based standards. It is noted that the SCAQMD is currently in the process of developing the 2016 AQMP, which is a comprehensive and integrated plan primarily focused on addressing the ozone and $PM_{2.5}$ standards. The 2016 AQMP will incorporate the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy, and updated emission inventory methodologies for various source categories.

4.4 LOCAL

University of California, Irvine

<u>Environmental Health and Safety Department</u>

UCI's Environmental Health and Safety (EH&S) Department is responsible for implementing UCI's Clean Air Program which assesses and facilitates UCI's compliance with air quality laws and regulations. In addition to the permitting programs required by California law and SCAQMD rules, UCI is required to implement a federal operating permit program, which meets federal EPA regulations adopted pursuant to Title V of the FCAA Amendments. Title V Program activities include assisting with SCAQMD Permit to Operate administration; monitoring, record keeping, and reporting activities; and developing regulatory programs and informational guidelines to ensure the campus remains in compliance with State and federal regulations.

Several different departments at UCI are involved with this program. Academic department chairs and directors are responsible for reporting new air emission sources to EH&S and maintaining records. Facilities Management and Design and Construction Services provide building and renovation plans to EH&S for review and also report new air emission sources to EH&S. Parking and Transportation Services, while not directly involved with the Clean Air Program, reduce air emissions by implementing the Alternative Transportation Program to reduce vehicular traffic and associated emissions.

5.0 POTENTIAL AIR QUALITY IMPACTS

CEQA THRESHOLDS

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the State *CEQA Guidelines*, as amended. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact Statement AQ-1);
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impact Statement AQ-2);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O_3 precursors) (refer to Impact Statement AQ-3);
- Expose sensitive receptors to substantial pollutant concentrations (refer to Impact Statement AQ-4);
- Create objectionable odors affecting a substantial number of people (refer to Impact Statement AQ-5);

Based on these standards and thresholds, the effects of the proposed project have been categorized as either a "less than significant impact" or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts.

AIR QUALITY THRESHOLDS

Under CEQA, the SCAQMD is an expert commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the FCAA, the SCAQMD has adopted federal attainment plans for O_3 and PM_{10}. The SCAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

The *CEQA Air Quality Handbook* also provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries. If the SCAQMD thresholds are exceeded, a potentially significant impact could result. However, ultimately the lead agency determines the thresholds of significance for impacts. If a project proposes development in excess of the established thresholds, as outlined in Table 4, *South Coast Air Quality Management District Emissions Thresholds*, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 4
South Coast Air Quality Management District Emissions Thresholds

Phase	Pollutant (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55
Source: South Coast Air Quality Management District, CEQA Air Quality Handbook, November 1993.						

Local Carbon Monoxide Standards

In addition, the significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards, as follows:

- If the project causes an exceedance of either the State one-hour or eight-hour CO concentrations, the project would be considered to have a significant local impact.

- If ambient levels already exceed a State or federal standard, then project emissions would be considered significant if they increase one-hour CO concentrations by 1.0 ppm or more, or eight-hour CO concentrations by 0.45 ppm or more.

Localized Significance Thresholds

Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated July 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_X, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors.

Cumulative Emissions Thresholds

The SCAQMD's 2012 AQMP was prepared to accommodate growth, meet State and Federal air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. According to the SCAQMD *CEQA Air Quality Handbook*, project-related emissions that fall below the established construction and operational thresholds should be considered less than significant unless there is pertinent information to the contrary. If a project exceeds these emission thresholds, the SCAQMD *CEQA Air Quality Handbook* states that the significance of a project's contribution to cumulative impacts should be determined based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

AQ-1 CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN?

Level of Significance Before Mitigation: *Potentially Significant Impact.*

On December 7, 2012, the SCAQMD Governing Board approved the 2012 AQMP, which outlines its strategies for meeting the NAAQS for $PM_{2.5}$ and ozone. The 2012 AQMP was forwarded to CARB for inclusion into the California State Implementation Plan (SIP) in January 2013. Subsequently, the 2012 AQMP was submitted to the EPA as the 24-hour $PM_{2.5}$ SIP addressing the 2006 $PM_{2.5}$ NAAQS and as a limited update to the approved 8-hour ozone SIP. The 1-hour ozone attainment demonstration and vehicle miles traveled (VMT) emissions offset demonstration was submitted through CARB to the EPA. According to the SCAQMD's 2012 AQMP, two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) *Would the project result in an increase in the frequency or severity of existing air quality violations?*

   Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in Impact Statement AQ-2, below, localized concentrations of CO, NO_X, PM_{10}, and $PM_{2.5}$ would be less than significant during project operations. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations. Because reactive organic gases (ROGs) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.

b) *Would the project cause or contribute to new air quality violations?*

As discussed in Impact Statement AQ-2, operations of the proposed project would result in emissions that would be below the SCAQMD operational thresholds. Therefore, the proposed project would not have the potential to cause or affect a violation of the ambient air quality standards.

c) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

The proposed project would result in less than significant impacts with regard to localized concentrations during project operations. As such, the proposed project would not delay the timely attainment of air quality standards or 2012 AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2012 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2012 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

In the case of the 2012 AQMP, several sources of data form the basis for the projections of air pollutant emissions including: UCI's *2007 Long Range Development Plan* (LRDP), SCAG's *Growth Management* Chapter of the *Regional Comprehensive Plan* (RCP), and SCAG's *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS also provides socioeconomic forecast projections of regional population growth. The General Plan Land Use Map designates the project site as "Educational Facilities", and the LRDP designates the site as Academic and Support. According to the LRDP, the Academic and Support areas permit classrooms; instructional and research laboratories; undergraduate, graduate, and professional schools and programs; and ancillary support facilities such as administrative facilities, libraries, performance and cultural facilities, clinical facilities, research institutes, conference facilities, and services supporting academic operations. Other permitted uses in this category include food service, recreation, parking, utility infrastructure, and other support uses. The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles, therefore complies with the site's intended use. The project would serve existing students, faculty/staff and would not increase enrollment or vehicle trips. Additionally, the project would be consistent with the City's General Plan and UCI's LRDP and assumed emissions for the project site, since no change in the site's land use designation is proposed. Thus, the project is generally consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the RCP. The population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the cities; these are used by SCAG in all phases of implementation and review. As SCAQMD incorporated these same projections into the 2012 AQMP, it can be concluded that the project would be consistent with the projections. As a result, the project would not exceed growth assumptions within the City's General Plan or UCI's LRDP. Therefore, the project would be consistent with the 2012 AQMP and a less than significant impact would occur.

b) *Would the project implement all feasible air quality mitigation measures?*

Compliance with all feasible emission reduction measures identified by the SCAQMD would be required as identified in Impact Statement AQ-2 and AQ-3. As such, the proposed project would meet this AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The project is consistent with the LRDP land use designations for the site, and would serve to implement various LRDP policies. Compliance with emission reduction measures identified by the SCAQMD would be required as identified in Impact Statement AQ-2 and Impact Statement AQ-3. As such, the proposed project meets this AQMP consistency criterion.

In conclusion, the determination of 2012 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet State and federal air quality standards. Also, the proposed project would be consistent with the goals and policies of the AQMP for control of fugitive dust. As discussed above, the proposed project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the 2012 AQMP.

Mitigation Measures: Refer to Mitigation Measures AQ-1, below.

Level of Significance After Mitigation. *Less Than Significant Impact.*

AQ-2 VIOLATE ANY AIR QUALITY STANDARDS OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION?

Level of Significance Before Mitigation: *Potentially Significant Impact.*

SHORT-TERM CONSTRUCTION

Short-term air quality impacts are predicted to occur during grading and construction operations associated with implementation of the proposed project. Temporary air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from grading and building construction; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

Construction activities would include demolition, grading, building construction, paving, and architectural coating. Site grading could require approximately 3,000 cubic yards of soil export. Project construction equipment would include excavators, graders, dozers, scrapers, and tractors/loaders/backhoes during grading; rough terrain forklifts, generators, tractors/loaders/backhoes, and welders during building construction; pavers, paving equipment, and rollers during paving; and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod). Refer to Appendix A, *Air Quality Emissions Data*, for the CalEEMod outputs and results. Table 5, *Short-Term (Construction) Emissions*, presents the anticipated daily short-term construction emissions.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Table 5
Short-Term (Construction) Emissions

Emissions Source	Pollutant □pounds/day□ □□□					
	ROG□	NOX	CO	SO□	PM□□	PM□□
□□□□						
Unmitigated Emissions	2.97	28.50	22.32	0.03	5.90	3.61
Mitigated Emissions	2.97	28.50	22.32	0.03	3.00	2.03
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***
□□□□						
Unmitigated Emissions	2.68	21.31	15.15	0.02	10.70	4.74
Mitigated Emissions	2.68	21.31	15.15	0.02	6.53	2.85
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***
□□□□						
Unmitigated Emissions	26.28	13.33	14.70	0.02	1.29	0.95
Mitigated Emissions	26.28	13.33	14.70	0.02	1.19	0.93
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Emissions were calculated using CalEEMod, as recommended by the SCAQMD.
2. The reduction/credits for construction emission mitigations are based on mitigation included in CalEEMod and as typically required by the SCAQMD. The mitigation includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.
3. Both ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.

Refer to Appendix A, *Air Quality Emissions Data*, for assumptions used in this analysis.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. Fine Particulate Matter ($PM_{2.5}$) is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and SO_X combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Mitigation Measure AQ-1 would require the project Applicant and/or Contractor to implement construction emissions Best Management Practices (BMPs) during construction, including, but not limited to, dust control techniques (i.e., daily watering), a traffic management plan, and adherence to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), to reduce PM_{10} and $PM_{2.5}$ concentrations. It is noted that the BMPs required in Mitigation Measure AQ-1 are applicable measures from LRDP EIR Mitigation Measure Air-2B. These are standard dust control measures that the SCAQMD requires for all projects. As indicated in Table 5, total PM_{10} and $PM_{2.5}$ emissions would be below the SCAQMD threshold with the implementation of Mitigation Measure AQ-1. Therefore, particulate matter impacts during construction would be less than significant.

ROG Emissions[2]

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. Architectural coatings were also quantified with CalEEMod based upon the size of the buildings.

The highest concentration of ROG emissions would be generated during the application of architectural coatings on the building. As required by law, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – Architectural Coating.[3] Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. As shown in Table 5, project construction would not result in an exceedance of ROG emissions during any years of construction. Therefore, impacts would be less than significant in this regard.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Standard SCAQMD regulations, such as maintaining all construction equipment in proper tune, shutting down equipment when not in use for extended periods of time, and implementing SCAQMD Rule 403. As noted in Table 5, construction equipment exhaust would not exceed SCAQMD thresholds. Therefore, impacts are less than significant in this regard.

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[2] ROGs and VOCs are subsets of organic gases that are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Although they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis.

[3] South Coast Air Quality Management District, *Regulation XI Source Specific Standards*, http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=15, accessed on March 11, 2016.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, federal, and international agencies and was identified as a toxic air contaminant by CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there would be no impact in this regard.

Construction Odors

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Additionally, odors generated during construction activities would be temporary. Therefore, construction odors are not considered to be a significant impact.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Construction would occur over a 23 month period with the greatest emissions being generated during the initial stages of construction. Additionally, the greatest amount of ROG emissions would typically occur during the final stages of development due to the application of architectural coatings.

CalEEMod allows the user to input mitigation measures such as watering the construction area to limit fugitive dust. Mitigation measures that were input into CalEEMod allow for certain reduction credits and result in a decrease of pollutant emissions. Reduction credits are based upon studies developed by CARB, SCAQMD, and other air quality management districts throughout California, and were programmed within CalEEMod. As indicated in Table 5, CalEEMod calculates the reduction associated with recommended mitigation measures.

As depicted in Table 5, construction emissions would be less than significant with implementation of Mitigation Measure AQ-1. Thus, construction related air emissions would be less than significant.

LONG-TERM OPERATIONAL EMISSIONS

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

As the proposed project would serve the existing student population and faculty at the UCI campus, no new vehicle trips would be added to the circulation network. As a result, Table 6, *Long-Term Air Emissions*, presents the anticipated area source and energy source emissions only. As shown in Table 6, unmitigated emissions generated by area and energy sources associated with the proposed project would not exceed established SCAQMD regional thresholds.

Table 6
Long-Term Air Emissions

Source	Estimated Emissions (pounds/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	1.98	0.00	0.13	0.00	0.00	0.00
Energy Sources	0.04	0.32	0.27	0.00	0.02	0.02
Total Emissions	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Is Threshold Exceeded? (Significant Impact)	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
1. Based on CalEEMod modeling results, worst-case seasonal emissions for area and energy emissions have been modeled.

Source: Refer to Appendix A, *Air Quality Emissions Data*, for assumptions used in this analysis.

Area Source Emissions

Area source emissions would be generated due to an increased demand for consumer products, architectural coating, and landscaping. As shown in Table 6, unmitigated area source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed project. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 6, unmitigated energy source emissions from the proposed project would not exceed SCAQMD thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Conclusion

As indicated in Table 6, unmitigated operational emissions from the proposed project would not exceed SCAQMD thresholds. If stationary sources, such as backup generators, are installed on-site, they would be required to obtain the applicable permits from SCAQMD for operation of such equipment. The SCAQMD is responsible for issuing permits for the operation of stationary sources in order to reduce air pollution, and to attain and maintain the national and California ambient air quality standards in the Basin. Backup generators would be used only in emergency situations, and would not contribute a substantial amount of emissions capable of exceeding SCAQMD thresholds. Thus, operational air quality impacts would be less than significant.

Mitigation Measures:

AQ-1 Prior to initiating 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 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. 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.

(Mitigation Measure AQ-1 correlates with Mitigation Measure Air-2B in the 2007 LRDP EIR).

Level of Significance After Mitigation. *Less than Significant Impact.*

AQ-3 RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE REGION IS NONATTAINMENT FOR FEDERAL OR STATE STANDARDS?

Level of Significance Before Mitigation: *Potentially Significant Impact.*

With respect to the proposed project's construction-related air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the 2012 AQMP pursuant to Federal Clean Air Act mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements, and implement all feasible mitigation measures (Mitigation Measure AQ-1). Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the proposed project would comply with adopted 2012 AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects throughout the Basin, which would include related projects.

As discussed previously, the proposed project would not result in long-term air quality impacts, as emissions would not exceed the SCAQMD adopted operational thresholds. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.

Mitigation Measures: Refer to Mitigation Measure AQ-1.

Level of Significance After Mitigation. *Less Than Significant Impact.*

AQ-4 EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS?

Level of Significance Before Mitigation: *Potentially Significant Impact.*

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The closest on-campus sensitive receptors near the project site include surrounding classrooms and Aldrich Park adjacent the project site. In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction and operations impacts (area sources only). The CO hotspot analysis following the LST analysis addresses localized mobile source impacts.

LOCALIZED SIGNIFICANCE THRESHOLDS (LST)

LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST screening lookup tables for one, two, and five acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project is located within Source Receptor Area (SRA) 20, Central Orange County Coastal.

Construction

The SCAQMD guidance on applying CalEEMod to LSTs specifies the amount of acres a particular piece of equipment would likely disturb per day. Based on the SCAQMD guidance on applying CalEEMod to LSTs, the project would disturb at most 1.2 acres of land per day. Therefore, the LST threshold for one acre was utilized for the construction LST analysis. The closest sensitive receptors to the project site are surrounding classrooms and Aldrich Park adjacent to the project site. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive uses are adjacent to the project site, the lowest available LST values for 25 meters were used. Table 7, *Localized Significance of Construction Emissions*, shows the localized unmitigated and mitigated construction-related emissions. It is noted that the localized emissions presented in Table 7 are less than those in Table 5 because localized emissions include only on-site emissions (i.e., from construction equipment and fugitive dust), and do not include off-site emissions (i.e., from hauling activities). As seen in Table 7, mitigated on-site emissions would not exceed the LSTs for SRA 20.

Operations

For project operations, the one-acre threshold was conservatively utilized, as the project site is approximately 1.2 acres. As the nearest sensitive uses are adjacent to the project site, the most conservative LST values for 25 meters were used. As seen in Table 8, *Localized Significance of Operational Emissions*, project-related operational area source emissions would be negligible and would be below the LSTs. As such, operational LST impacts would be less than significant in this regard.

Table 7
Localized Significance of Construction Emissions

Source	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
[illegible]				
Total Unmitigated On-Site Emissions[2,3]	28.26	21.50	5.68	3.54
Total Mitigated On-Site Emissions[2,3]	28.26	21.50	2.82	1.97
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***
[illegible]				
Total Unmitigated On-Site Emissions[3]	19.79	13.18	5.61	3.47
Total Mitigated On-Site Emissions[3]	19.79	13.18	2.75	1.90
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***
[illegible]				
Total Unmitigated On-Site Emissions[4]	12.31	11.99	0.84	0.82
Total Mitigated On-Site Emissions[4]	12.31	11.99	0.84	0.82
Localized Significance Threshold[1]	*92*	*647*	*4*	*3*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction, the distance to sensitive receptors, and the source receptor area (SRA 8).
2. The Demolition Phase represents the worst case scenario for NO_X and CO.
3. The Grading Phase represents the worst case scenario for PM_{10}, and $PM_{2.5}$.
4. The Building Construction Phase represents the worst case scenario for CO, PM_{10}, and $PM_{2.5}$.

Table 8
Localized Significance of Operational Emissions

Source	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Area Source Emissions	0.00	0.13	0.00	0.00
Localized Significance Threshold[2]	*92*	*647*	*1*	*1*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Note:
1. The proposed project does not include hearths.
2. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the total acreage, the distance to sensitive receptors, and the source receptor area (SRA 20).

CARBON MONOXIDE HOTSPOTS

Intersection Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

The City is located in the South Coast Air Basin (Basin), which is designated as an attainment/maintenance area for the federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for the SCAQMD's 2003 AQMP. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hr CO federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the vicinity of the project site as the project would not result in new vehicle trips (i.e., the new classroom building would serve the existing faculty/staff and student population). Therefore, impacts would be less than significant in this regard.

Mitigation Measures: Refer to Mitigation Measure AQ-1.

Level of Significance After Mitigation. *Less Than Significant Impact.*

AQ-5 CREATE OBJECTIONABLE ODORS AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE?

Level of Significance Before Mitigation: *Less Than Significant Impact.*

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short-term in nature and cease upon project completion. Any impacts to existing adjacent land uses would be short-term and are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance After Mitigation. *Less Than Significant Impact.*

6.0 REFERENCES

6.1 LIST OF PREPARERS

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Ryan Chiene, Environmental Analyst
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6.2 DOCUMENTS

1. ATKINS, *University of California, Irvine, 2007 Long Range Development Plan Environmental Impact Report*, November 2007.

2. City of Irvine, *City of Irvine General Plan*, Supp. No. 9, July 2015.

3. City of Irvine, *Municipal Code*, codified through Ordinance No. 15-02, adopted April 28, 2015.

4. City of Irvine, *CEQA Manual*, May 2012.

5. South Coast Air Quality Management District, *2012 Air Quality Management Plan*, December 7, 2012.

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8. South Coast Air Quality Management District, *Regulation XI Source Specific Standards*, http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=15, accessed on March 11, 2016.

9. U.S. Climate Data, *Climate Irvine - California*, http://www.usclimatedata.com/climate/irvine/california/united-states/usca2494, accessed on March 10, 2016.

6.3 WEB SITES/PROGRAMS

California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM)*, summaries from 2012 to 2014, http://www.arb.ca.gov/adam.

Environ International Corporation and the South Coast Air Quality Management District, *California Emissions Estimator Model (CalEEMod) Version 2013.2.2*, 2013.

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APPENDIX A: AIR QUALITY DATA

UCI Classroom
Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	1,286.00	Student	1.20	75,052.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project dettails

Construction Phase - Construction phasing

Off-road Equipment - No cranes

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Site acreage

Demolition -

Vehicle Trips - Building will serve existing students and faculty - no new trips added

Construction Off-road Equipment Mitigation - per SCAQMD

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	200.00	303.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	66.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	PhaseEndDate	9/30/2016	10/1/2016
tblConstructionPhase	PhaseEndDate	4/2/2018	5/1/2018
tblConstructionPhase	PhaseStartDate	3/2/2018	4/1/2018
tblGrading	AcresOfGrading	24.75	1.20
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LandUseSquareFeet	236,363.54	75,052.00
tblLandUse	LotAcreage	5.43	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.30	0.00
tblVehicleTrips	WD_TR	2.38	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.9665	28.5033	22.3163	0.0266	4.7305	1.7482	5.8955	2.5366	1.6361	3.6084	0.0000	2,673.8871	2,673.8871	0.6361	0.0000	2,687.2446
2017	2.6818	21.3097	15.1472	0.0244	9.6122	1.0883	10.7005	3.7349	1.0013	4.7361	0.0000	2,185.7392	2,185.7392	0.4479	0.0000	2,195.1451
2018	26.2769	13.3295	14.6973	0.0244	0.4327	0.8530	1.2857	0.1162	0.8330	0.9492	0.0000	2,163.0593	2,163.0593	0.4111	0.0000	2,171.6930
Total	**31.9252**	**63.1425**	**52.1608**	**0.0754**	**14.7754**	**3.6895**	**17.8817**	**6.3877**	**3.4704**	**9.2937**	**0.0000**	**7,022.6855**	**7,022.6855**	**1.4951**	**0.0000**	**7,054.0827**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.9665	28.5033	22.3163	0.0266	1.8320	1.7482	2.9969	0.9622	1.6361	2.0339	0.0000	2,673.8871	2,673.8871	0.6361	0.0000	2,687.2446
2017	2.6818	21.3097	15.1472	0.0244	5.4444	1.0883	6.5327	1.8489	1.0013	2.8501	0.0000	2,185.7392	2,185.7392	0.4479	0.0000	2,195.1451
2018	26.2769	13.3295	14.6973	0.0244	0.3376	0.8530	1.1906	0.0929	0.8330	0.9259	0.0000	2,163.0593	2,163.0593	0.4111	0.0000	2,171.6930
Total	**31.9252**	**63.1425**	**52.1608**	**0.0754**	**7.6139**	**3.6895**	**10.7202**	**2.9039**	**3.4704**	**5.8099**	**0.0000**	**7,022.6855**	**7,022.6855**	**1.4951**	**0.0000**	**7,054.0827**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.47**	**0.00**	**40.05**	**54.54**	**0.00**	**37.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Energy	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.0105**	**0.3210**	**0.4017**	**1.9300e-003**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0248**	**0.0248**		**383.9478**	**383.9478**	**8.1200e-003**	**7.0300e-003**	**386.2989**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Energy	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.0105**	**0.3210**	**0.4017**	**1.9300e-003**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0248**	**0.0248**		**383.9478**	**383.9478**	**8.1200e-003**	**7.0300e-003**	**386.2989**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2016	10/1/2016	5	22	
2	Grading	Grading	10/2/2016	1/2/2017	5	66	
3	Building Construction	Building Construction	1/3/2017	3/1/2018	5	303	
4	Paving	Paving	4/1/2018	5/1/2018	5	22	
5	Architectural Coating	Architectural Coating	5/2/2018	8/2/2018	5	67	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,578; Non-Residential Outdoor: 37,526 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	0	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	32.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1342	0.0000	0.1342	0.0203	0.0000	0.0203			0.0000			0.0000
Off-Road	2.9066	28.2579	21.4980	0.0245		1.7445	1.7445		1.6328	1.6328		2,487.1296	2,487.1296	0.6288		2,500.3343
Total	**2.9066**	**28.2579**	**21.4980**	**0.0245**	**0.1342**	**1.7445**	**1.8788**	**0.0203**	**1.6328**	**1.6531**		**2,487.1296**	**2,487.1296**	**0.6288**		**2,500.3343**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0124	0.1814	0.1461	4.7000e-004	0.0111	2.6400e-003	0.0137	3.0400e-003	2.4300e-003	5.4700e-003		47.0637	47.0637	3.4000e-004		47.0708
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0641	0.6722	1.6700e-003	0.1453	1.0200e-003	0.1463	0.0385	9.4000e-004	0.0395		139.6938	139.6938	6.9400e-003		139.8395
Total	**0.0599**	**0.2454**	**0.8183**	**2.1400e-003**	**0.1564**	**3.6600e-003**	**0.1601**	**0.0416**	**3.3700e-003**	**0.0449**		**186.7575**	**186.7575**	**7.2800e-003**		**186.9103**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0497	0.0000	0.0497	7.5300e-003	0.0000	7.5300e-003			0.0000			0.0000
Off-Road	2.9066	28.2579	21.4980	0.0245		1.7445	1.7445		1.6328	1.6328	0.0000	2,487.1296	2,487.1296	0.6288		2,500.3343
Total	**2.9066**	**28.2579**	**21.4980**	**0.0245**	**0.0497**	**1.7445**	**1.7943**	**7.5300e-003**	**1.6328**	**1.6403**	**0.0000**	**2,487.1296**	**2,487.1296**	**0.6288**		**2,500.3343**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0124	0.1814	0.1461	4.7000e-004	8.9000e-003	2.6400e-003	0.0115	2.5000e-003	2.4300e-003	4.9300e-003		47.0637	47.0637	3.4000e-004		47.0708
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0641	0.6722	1.6700e-003	0.1125	1.0200e-003	0.1135	0.0305	9.4000e-004	0.0314		139.6938	139.6938	6.9400e-003		139.8395
Total	**0.0599**	**0.2454**	**0.8183**	**2.1400e-003**	**0.1214**	**3.6600e-003**	**0.1250**	**0.0330**	**3.3700e-003**	**0.0363**		**186.7575**	**186.7575**	**7.2800e-003**		**186.9103**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5410	0.0000	4.5410	2.4855	0.0000	2.4855			0.0000			0.0000
Off-Road	1.9908	21.0361	13.6704	0.0141		1.1407	1.1407		1.0494	1.0494		1,462.846 8	1,462.846 8	0.4413		1,472.113 0
Total	**1.9908**	**21.0361**	**13.6704**	**0.0141**	**4.5410**	**1.1407**	**5.6817**	**2.4855**	**1.0494**	**3.5350**		**1,462.846 8**	**1,462.846 8**	**0.4413**		**1,472.113 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1110	1.6193	1.3041	4.1700e-003	0.1001	0.0236	0.1237	0.0274	0.0217	0.0491		420.2117	420.2117	3.0300e-003		420.2754
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0292	0.0394	0.4137	1.0300e-003	0.0894	6.2000e-004	0.0901	0.0237	5.8000e-004	0.0243		85.9654	85.9654	4.2700e-003		86.0551
Total	**0.1403**	**1.6587**	**1.7178**	**5.2000e-003**	**0.1896**	**0.0242**	**0.2138**	**0.0511**	**0.0223**	**0.0734**		**506.1771**	**506.1771**	**7.3000e-003**		**506.3304**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6824	0.0000	1.6824	0.9209	0.0000	0.9209			0.0000			0.0000
Off-Road	1.9908	21.0361	13.6704	0.0141		1.1407	1.1407		1.0494	1.0494	0.0000	1,462.8468	1,462.8468	0.4413		1,472.1130
Total	**1.9908**	**21.0361**	**13.6704**	**0.0141**	**1.6824**	**1.1407**	**2.8231**	**0.9209**	**1.0494**	**1.9703**	**0.0000**	**1,462.8468**	**1,462.8468**	**0.4413**		**1,472.1130**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1110	1.6193	1.3041	4.1700e-003	0.0803	0.0236	0.1039	0.0225	0.0217	0.0442		420.2117	420.2117	3.0300e-003		420.2754
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0292	0.0394	0.4137	1.0300e-003	0.0692	6.2000e-004	0.0698	0.0188	5.8000e-004	0.0193		85.9654	85.9654	4.2700e-003		86.0551
Total	**0.1403**	**1.6587**	**1.7178**	**5.2000e-003**	**0.1495**	**0.0242**	**0.1737**	**0.0413**	**0.0223**	**0.0636**		**506.1771**	**506.1771**	**7.3000e-003**		**506.3304**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5410	0.0000	4.5410	2.4855	0.0000	2.4855			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808		1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**4.5410**	**1.0661**	**5.6071**	**2.4855**	**0.9808**	**3.4664**		**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1043	1.4850	1.2531	4.1700e-003	4.9818	0.0216	5.0034	1.2256	0.0199	1.2455		413.2774	413.2774	2.9800e-003		413.3399
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0266	0.0358	0.3762	1.0300e-003	0.0894	6.1000e-004	0.0900	0.0237	5.6000e-004	0.0243		82.6376	82.6376	3.9600e-003		82.7208
Total	**0.1308**	**1.5209**	**1.6294**	**5.2000e-003**	**5.0712**	**0.0222**	**5.0934**	**1.2493**	**0.0204**	**1.2698**		**495.9150**	**495.9150**	**6.9400e-003**		**496.0607**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6824	0.0000	1.6824	0.9209	0.0000	0.9209			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808	0.0000	1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**1.6824**	**1.0661**	**2.7486**	**0.9209**	**0.9808**	**1.9017**	**0.0000**	**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1043	1.4850	1.2531	4.1700e-003	3.6927	0.0216	3.7143	0.9092	0.0199	0.9291		413.2774	413.2774	2.9800e-003		413.3399
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0266	0.0358	0.3762	1.0300e-003	0.0692	6.1000e-004	0.0698	0.0188	5.6000e-004	0.0193		82.6376	82.6376	3.9600e-003		82.7208
Total	**0.1308**	**1.5209**	**1.6294**	**5.2000e-003**	**3.7619**	**0.0222**	**3.7842**	**0.9280**	**0.0204**	**0.9484**		**495.9150**	**495.9150**	**6.9400e-003**		**496.0607**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4686	13.3391	12.2438	0.0177		0.9684	0.9684		0.9457	0.9457		1,601.3575	1,601.3575	0.2942		1,607.5356
Total	**2.4686**	**13.3391**	**12.2438**	**0.0177**		**0.9684**	**0.9684**		**0.9457**	**0.9457**		**1,601.3575**	**1,601.3575**	**0.2942**		**1,607.5356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1070	0.9661	1.3985	2.5700e-003	0.0750	0.0148	0.0898	0.0214	0.0136	0.0350		253.8311	253.8311	1.8500e-003		253.8699
Worker	0.1063	0.1432	1.5049	4.1100e-003	0.3577	2.4400e-003	0.3601	0.0949	2.2600e-003	0.0971		330.5505	330.5505	0.0158		330.8833
Total	**0.2132**	**1.1093**	**2.9034**	**6.6800e-003**	**0.4327**	**0.0173**	**0.4500**	**0.1162**	**0.0159**	**0.1321**		**584.3816**	**584.3816**	**0.0177**		**584.7531**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4686	13.3391	12.2438	0.0177		0.9684	0.9684		0.9457	0.9457	0.0000	1,601.3575	1,601.3575	0.2942		1,607.5355
Total	**2.4686**	**13.3391**	**12.2438**	**0.0177**		**0.9684**	**0.9684**		**0.9457**	**0.9457**	**0.0000**	**1,601.3575**	**1,601.3575**	**0.2942**		**1,607.5355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1070	0.9661	1.3985	2.5700e-003	0.0608	0.0148	0.0756	0.0179	0.0136	0.0315		253.8311	253.8311	1.8500e-003		253.8699
Worker	0.1063	0.1432	1.5049	4.1100e-003	0.2768	2.4400e-003	0.2793	0.0750	2.2600e-003	0.0773		330.5505	330.5505	0.0158		330.8833
Total	**0.2132**	**1.1093**	**2.9034**	**6.6800e-003**	**0.3376**	**0.0173**	**0.3549**	**0.0929**	**0.0159**	**0.1088**		**584.3816**	**584.3816**	**0.0177**		**584.7531**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1639	12.3124	11.9852	0.0177		0.8366	0.8366		0.8179	0.8179		1,595.3904	1,595.3904	0.2733		1,601.1290
Total	**2.1639**	**12.3124**	**11.9852**	**0.0177**		**0.8366**	**0.8366**		**0.8179**	**0.8179**		**1,595.3904**	**1,595.3904**	**0.2733**		**1,601.1290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0998	0.8864	1.3381	2.5700e-003	0.0750	0.0140	0.0890	0.0214	0.0129	0.0342		249.5167	249.5167	1.8400e-003		249.5553
Worker	0.0968	0.1307	1.3739	4.1100e-003	0.3577	2.4100e-003	0.3601	0.0949	2.2400e-003	0.0971		318.1522	318.1522	0.0148		318.4627
Total	**0.1966**	**1.0171**	**2.7121**	**6.6800e-003**	**0.4327**	**0.0164**	**0.4491**	**0.1162**	**0.0151**	**0.1313**		**567.6689**	**567.6689**	**0.0166**		**568.0180**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1639	12.3124	11.9852	0.0177		0.8366	0.8366		0.8179	0.8179	0.0000	1,595.3904	1,595.3904	0.2733		1,601.1290
Total	**2.1639**	**12.3124**	**11.9852**	**0.0177**		**0.8366**	**0.8366**		**0.8179**	**0.8179**	**0.0000**	**1,595.3904**	**1,595.3904**	**0.2733**		**1,601.1290**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0998	0.8864	1.3381	2.5700e-003	0.0608	0.0140	0.0747	0.0179	0.0129	0.0307		249.5167	249.5167	1.8400e-003		249.5553
Worker	0.0968	0.1307	1.3739	4.1100e-003	0.2768	2.4100e-003	0.2793	0.0750	2.2400e-003	0.0773		318.1522	318.1522	0.0148		318.4627
Total	**0.1966**	**1.0171**	**2.7121**	**6.6800e-003**	**0.3376**	**0.0164**	**0.3540**	**0.0929**	**0.0151**	**0.1080**		**567.6689**	**567.6689**	**0.0166**		**568.0180**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0052	10.3081	8.8698	0.0133		0.6027	0.6027		0.5553	0.5553		1,326.5758	1,326.5758	0.4051		1,335.0833
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0052**	**10.3081**	**8.8698**	**0.0133**		**0.6027**	**0.6027**		**0.5553**	**0.5553**		**1,326.5758**	**1,326.5758**	**0.4051**		**1,335.0833**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0393	0.0531	0.5582	1.6700e-003	0.1453	9.8000e-004	0.1463	0.0385	9.1000e-004	0.0395		129.2493	129.2493	6.0100e-003		129.3755
Total	**0.0393**	**0.0531**	**0.5582**	**1.6700e-003**	**0.1453**	**9.8000e-004**	**0.1463**	**0.0385**	**9.1000e-004**	**0.0395**		**129.2493**	**129.2493**	**6.0100e-003**		**129.3755**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0052	10.3081	8.8698	0.0133		0.6027	0.6027		0.5553	0.5553	0.0000	1,326.5758	1,326.5758	0.4051		1,335.0833
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0052**	**10.3081**	**8.8698**	**0.0133**		**0.6027**	**0.6027**		**0.5553**	**0.5553**	**0.0000**	**1,326.5758**	**1,326.5758**	**0.4051**		**1,335.0833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0393	0.0531	0.5582	1.6700e-003	0.1125	9.8000e-004	0.1135	0.0305	9.1000e-004	0.0314		129.2493	129.2493	6.0100e-003		129.3755
Total	**0.0393**	**0.0531**	**0.5582**	**1.6700e-003**	**0.1125**	**9.8000e-004**	**0.1135**	**0.0305**	**9.1000e-004**	**0.0314**		**129.2493**	**129.2493**	**6.0100e-003**		**129.3755**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.9602					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**26.2588**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0182	0.0245	0.2576	7.7000e-004	0.0671	4.5000e-004	0.0675	0.0178	4.2000e-004	0.0182		59.6535	59.6535	2.7700e-003		59.7118
Total	**0.0182**	**0.0245**	**0.2576**	**7.7000e-004**	**0.0671**	**4.5000e-004**	**0.0675**	**0.0178**	**4.2000e-004**	**0.0182**		**59.6535**	**59.6535**	**2.7700e-003**		**59.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.9602					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**26.2588**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0182	0.0245	0.2576	7.7000e-004	0.0519	4.5000e-004	0.0524	0.0141	4.2000e-004	0.0145		59.6535	59.6535	2.7700e-003		59.7118
Total	**0.0182**	**0.0245**	**0.2576**	**7.7000e-004**	**0.0519**	**4.5000e-004**	**0.0524**	**0.0141**	**4.2000e-004**	**0.0145**		**59.6535**	**59.6535**	**2.7700e-003**		**59.7118**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
University/College (4Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510011	0.056836	0.192178	0.151564	0.041643	0.005905	0.015642	0.015146	0.001440	0.002149	0.004721	0.000504	0.002262

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
NaturalGas Unmitigated	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
University/College (4Yr)	3261.16	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Total		**0.0352**	**0.3197**	**0.2686**	**1.9200e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.6663**	**383.6663**	**7.3500e-003**	**7.0300e-003**	**386.0012**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
University/College (4Yr)	3.26116	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Total		**0.0352**	**0.3197**	**0.2686**	**1.9200e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.6663**	**383.6663**	**7.3500e-003**	**7.0300e-003**	**386.0012**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Unmitigated	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4765					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0127	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Total	**1.9753**	**1.2500e-003**	**0.1331**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2814**	**0.2814**	**7.7000e-004**		**0.2977**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4765					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0127	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Total	**1.9753**	**1.2500e-003**	**0.1331**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2814**	**0.2814**	**7.7000e-004**		**0.2977**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

UCI Classroom

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	1,286.00	Student	1.20	75,052.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project dettails

Construction Phase - Construction phasing

Off-road Equipment - No cranes

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Site acreage

Demolition -

Vehicle Trips - Building will serve existing students and faculty - no new trips added

Construction Off-road Equipment Mitigation - per SCAQMD

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	200.00	303.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	66.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	PhaseEndDate	9/30/2016	10/1/2016
tblConstructionPhase	PhaseEndDate	4/2/2018	5/1/2018
tblConstructionPhase	PhaseStartDate	3/2/2018	4/1/2018
tblGrading	AcresOfGrading	24.75	1.20
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LandUseSquareFeet	236,363.54	75,052.00
tblLandUse	LotAcreage	5.43	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.30	0.00
tblVehicleTrips	WD_TR	2.38	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.9633	28.4915	22.3389	0.0267	4.7305	1.7482	5.8954	2.5366	1.6361	3.6083	0.0000	2,681.8039	2,681.8039	0.6361	0.0000	2,695.1613
2017	2.6665	21.2574	15.0000	0.0247	9.6122	1.0883	10.7005	3.7349	1.0012	4.7361	0.0000	2,206.3859	2,206.3859	0.4479	0.0000	2,215.7910
2018	26.2761	13.2981	14.5481	0.0247	0.4327	0.8529	1.2856	0.1162	0.8329	0.9491	0.0000	2,182.9963	2,182.9963	0.4111	0.0000	2,191.6300
Total	**31.9058**	**63.0470**	**51.8870**	**0.0760**	**14.7754**	**3.6893**	**17.8814**	**6.3877**	**3.4702**	**9.2934**	**0.0000**	**7,071.1862**	**7,071.1862**	**1.4951**	**0.0000**	**7,102.5823**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.9633	28.4915	22.3389	0.0267	1.8320	1.7482	2.9968	0.9622	1.6361	2.0338	0.0000	2,681.8039	2,681.8039	0.6361	0.0000	2,695.1613
2017	2.6665	21.2574	15.0000	0.0247	5.4444	1.0883	6.5327	1.8489	1.0012	2.8501	0.0000	2,206.3859	2,206.3859	0.4479	0.0000	2,215.7910
2018	26.2761	13.2981	14.5481	0.0247	0.3376	0.8529	1.1905	0.0929	0.8329	0.9257	0.0000	2,182.9963	2,182.9963	0.4111	0.0000	2,191.6300
Total	**31.9058**	**63.0470**	**51.8870**	**0.0760**	**7.6139**	**3.6893**	**10.7199**	**2.9039**	**3.4702**	**5.8096**	**0.0000**	**7,071.1862**	**7,071.1862**	**1.4951**	**0.0000**	**7,102.5823**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.47**	**0.00**	**40.05**	**54.54**	**0.00**	**37.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Energy	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.0105**	**0.3210**	**0.4017**	**1.9300e-003**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0248**	**0.0248**		**383.9478**	**383.9478**	**8.1200e-003**	**7.0300e-003**	**386.2989**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Energy	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.0105**	**0.3210**	**0.4017**	**1.9300e-003**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0248**	**0.0248**		**383.9478**	**383.9478**	**8.1200e-003**	**7.0300e-003**	**386.2989**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2016	10/1/2016	5	22	
2	Grading	Grading	10/2/2016	1/2/2017	5	66	
3	Building Construction	Building Construction	1/3/2017	3/1/2018	5	303	
4	Paving	Paving	4/1/2018	5/1/2018	5	22	
5	Architectural Coating	Architectural Coating	5/2/2018	8/2/2018	5	67	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,578; Non-Residential Outdoor: 37,526 (Architectural Coating

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	0	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	32.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1342	0.0000	0.1342	0.0203	0.0000	0.0203			0.0000			0.0000
Off-Road	2.9066	28.2579	21.4980	0.0245		1.7445	1.7445		1.6328	1.6328		2,487.129 6	2,487.129 6	0.6288		2,500.334 3
Total	**2.9066**	**28.2579**	**21.4980**	**0.0245**	**0.1342**	**1.7445**	**1.8788**	**0.0203**	**1.6328**	**1.6531**		**2,487.129 6**	**2,487.129 6**	**0.6288**		**2,500.334 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0116	0.1754	0.1273	4.7000e-004	0.0111	2.6400e-003	0.0137	3.0400e-003	2.4300e-003	5.4600e-003		47.1762	47.1762	3.4000e-004		47.1832
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0583	0.7137	1.7600e-003	0.1453	1.0200e-003	0.1463	0.0385	9.4000e-004	0.0395		147.4982	147.4982	6.9400e-003		147.6439
Total	**0.0567**	**0.2336**	**0.8409**	**2.2300e-003**	**0.1564**	**3.6600e-003**	**0.1600**	**0.0416**	**3.3700e-003**	**0.0449**		**194.6744**	**194.6744**	**7.2800e-003**		**194.8271**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0497	0.0000	0.0497	7.5300e-003	0.0000	7.5300e-003			0.0000			0.0000
Off-Road	2.9066	28.2579	21.4980	0.0245		1.7445	1.7445		1.6328	1.6328	0.0000	2,487.1296	2,487.1296	0.6288		2,500.3343
Total	**2.9066**	**28.2579**	**21.4980**	**0.0245**	**0.0497**	**1.7445**	**1.7943**	**7.5300e-003**	**1.6328**	**1.6403**	**0.0000**	**2,487.1296**	**2,487.1296**	**0.6288**		**2,500.3343**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0116	0.1754	0.1273	4.7000e-004	8.9000e-003	2.6400e-003	0.0115	2.5000e-003	2.4300e-003	4.9200e-003		47.1762	47.1762	3.4000e-004		47.1832
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0583	0.7137	1.7600e-003	0.1125	1.0200e-003	0.1135	0.0305	9.4000e-004	0.0314		147.4982	147.4982	6.9400e-003		147.6439
Total	**0.0567**	**0.2336**	**0.8409**	**2.2300e-003**	**0.1214**	**3.6600e-003**	**0.1250**	**0.0330**	**3.3700e-003**	**0.0363**		**194.6744**	**194.6744**	**7.2800e-003**		**194.8271**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5410	0.0000	4.5410	2.4855	0.0000	2.4855			0.0000			0.0000
Off-Road	1.9908	21.0361	13.6704	0.0141		1.1407	1.1407		1.0494	1.0494		1,462.846 8	1,462.846 8	0.4413		1,472.113 0
Total	**1.9908**	**21.0361**	**13.6704**	**0.0141**	**4.5410**	**1.1407**	**5.6817**	**2.4855**	**1.0494**	**3.5350**		**1,462.846 8**	**1,462.846 8**	**0.4413**		**1,472.113 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1038	1.5656	1.1363	4.1800e-003	0.1001	0.0235	0.1237	0.0274	0.0217	0.0490		421.2157	421.2157	2.9900e-003		421.2785
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0278	0.0359	0.4392	1.0900e-003	0.0894	6.2000e-004	0.0901	0.0237	5.8000e-004	0.0243		90.7681	90.7681	4.2700e-003		90.8578
Total	**0.1316**	**1.6015**	**1.5754**	**5.2700e-003**	**0.1896**	**0.0242**	**0.2137**	**0.0511**	**0.0222**	**0.0733**		**511.9838**	**511.9838**	**7.2600e-003**		**512.1363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6824	0.0000	1.6824	0.9209	0.0000	0.9209			0.0000			0.0000
Off-Road	1.9908	21.0361	13.6704	0.0141		1.1407	1.1407		1.0494	1.0494	0.0000	1,462.846 8	1,462.846 8	0.4413		1,472.113 0
Total	**1.9908**	**21.0361**	**13.6704**	**0.0141**	**1.6824**	**1.1407**	**2.8231**	**0.9209**	**1.0494**	**1.9703**	**0.0000**	**1,462.846 8**	**1,462.846 8**	**0.4413**		**1,472.113 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1038	1.5656	1.1363	4.1800e-003	0.0803	0.0235	0.1039	0.0225	0.0217	0.0442		421.2157	421.2157	2.9900e-003		421.2785
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0278	0.0359	0.4392	1.0900e-003	0.0692	6.2000e-004	0.0698	0.0188	5.8000e-004	0.0193		90.7681	90.7681	4.2700e-003		90.8578
Total	**0.1316**	**1.6015**	**1.5754**	**5.2700e-003**	**0.1495**	**0.0242**	**0.1737**	**0.0413**	**0.0222**	**0.0635**		**511.9838**	**511.9838**	**7.2600e-003**		**512.1363**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5410	0.0000	4.5410	2.4855	0.0000	2.4855			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808		1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**4.5410**	**1.0661**	**5.6071**	**2.4855**	**0.9808**	**3.4664**		**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0979	1.4359	1.0851	4.1700e-003	4.9818	0.0216	5.0033	1.2256	0.0198	1.2454		414.2657	414.2657	2.9400e-003		414.3274
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0326	0.4006	1.0900e-003	0.0894	6.1000e-004	0.0900	0.0237	5.6000e-004	0.0243		87.2583	87.2583	3.9600e-003		87.3415
Total	**0.1232**	**1.4685**	**1.4857**	**5.2600e-003**	**5.0712**	**0.0222**	**5.0934**	**1.2493**	**0.0204**	**1.2697**		**501.5240**	**501.5240**	**6.9000e-003**		**501.6689**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6824	0.0000	1.6824	0.9209	0.0000	0.9209			0.0000			0.0000
Off-Road	1.8844	19.7889	13.1786	0.0141		1.0661	1.0661		0.9808	0.9808	0.0000	1,439.1894	1,439.1894	0.4410		1,448.4496
Total	**1.8844**	**19.7889**	**13.1786**	**0.0141**	**1.6824**	**1.0661**	**2.7486**	**0.9209**	**0.9808**	**1.9017**	**0.0000**	**1,439.1894**	**1,439.1894**	**0.4410**		**1,448.4496**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0979	1.4359	1.0851	4.1700e-003	3.6927	0.0216	3.7143	0.9092	0.0198	0.9290		414.2657	414.2657	2.9400e-003		414.3274
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0326	0.4006	1.0900e-003	0.0692	6.1000e-004	0.0698	0.0188	5.6000e-004	0.0193		87.2583	87.2583	3.9600e-003		87.3415
Total	**0.1232**	**1.4685**	**1.4857**	**5.2600e-003**	**3.7619**	**0.0222**	**3.7841**	**0.9280**	**0.0204**	**0.9484**		**501.5240**	**501.5240**	**6.9000e-003**		**501.6689**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4686	13.3391	12.2438	0.0177		0.9684	0.9684		0.9457	0.9457		1,601.3575	1,601.3575	0.2942		1,607.5356
Total	**2.4686**	**13.3391**	**12.2438**	**0.0177**		**0.9684**	**0.9684**		**0.9457**	**0.9457**		**1,601.3575**	**1,601.3575**	**0.2942**		**1,607.5356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0968	0.9444	1.1539	2.5900e-003	0.0750	0.0147	0.0897	0.0214	0.0135	0.0349		255.9951	255.9951	1.7900e-003		256.0326
Worker	0.1011	0.1302	1.6024	4.3400e-003	0.3577	2.4400e-003	0.3601	0.0949	2.2600e-003	0.0971		349.0333	349.0333	0.0158		349.3661
Total	**0.1979**	**1.0746**	**2.7563**	**6.9300e-003**	**0.4327**	**0.0171**	**0.4498**	**0.1162**	**0.0158**	**0.1320**		**605.0284**	**605.0284**	**0.0176**		**605.3987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4686	13.3391	12.2438	0.0177		0.9684	0.9684		0.9457	0.9457	0.0000	1,601.3575	1,601.3575	0.2942		1,607.5355
Total	**2.4686**	**13.3391**	**12.2438**	**0.0177**		**0.9684**	**0.9684**		**0.9457**	**0.9457**	**0.0000**	**1,601.3575**	**1,601.3575**	**0.2942**		**1,607.5355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0968	0.9444	1.1539	2.5900e-003	0.0608	0.0147	0.0755	0.0179	0.0135	0.0314		255.9951	255.9951	1.7900e-003		256.0326
Worker	0.1011	0.1302	1.6024	4.3400e-003	0.2768	2.4400e-003	0.2793	0.0750	2.2600e-003	0.0773		349.0333	349.0333	0.0158		349.3661
Total	**0.1979**	**1.0746**	**2.7563**	**6.9300e-003**	**0.3376**	**0.0171**	**0.3547**	**0.0929**	**0.0158**	**0.1086**		**605.0284**	**605.0284**	**0.0176**		**605.3987**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1639	12.3124	11.9852	0.0177		0.8366	0.8366		0.8179	0.8179		1,595.3904	1,595.3904	0.2733		1,601.1290
Total	**2.1639**	**12.3124**	**11.9852**	**0.0177**		**0.8366**	**0.8366**		**0.8179**	**0.8179**		**1,595.3904**	**1,595.3904**	**0.2733**		**1,601.1290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0907	0.8669	1.0954	2.5900e-003	0.0750	0.0138	0.0888	0.0214	0.0127	0.0341		251.6489	251.6489	1.7800e-003		251.6863
Worker	0.0923	0.1188	1.4675	4.3400e-003	0.3577	2.4100e-003	0.3601	0.0949	2.2400e-003	0.0971		335.9571	335.9571	0.0148		336.2676
Total	**0.1829**	**0.9857**	**2.5629**	**6.9300e-003**	**0.4327**	**0.0163**	**0.4489**	**0.1162**	**0.0150**	**0.1312**		**587.6059**	**587.6059**	**0.0166**		**587.9538**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1639	12.3124	11.9852	0.0177		0.8366	0.8366		0.8179	0.8179	0.0000	1,595.3904	1,595.3904	0.2733		1,601.1290
Total	**2.1639**	**12.3124**	**11.9852**	**0.0177**		**0.8366**	**0.8366**		**0.8179**	**0.8179**	**0.0000**	**1,595.3904**	**1,595.3904**	**0.2733**		**1,601.1290**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0907	0.8669	1.0954	2.5900e-003	0.0608	0.0138	0.0746	0.0179	0.0127	0.0306		251.6489	251.6489	1.7800e-003		251.6863
Worker	0.0923	0.1188	1.4675	4.3400e-003	0.2768	2.4100e-003	0.2793	0.0750	2.2400e-003	0.0773		335.9571	335.9571	0.0148		336.2676
Total	**0.1829**	**0.9857**	**2.5629**	**6.9300e-003**	**0.3376**	**0.0163**	**0.3539**	**0.0929**	**0.0150**	**0.1078**		**587.6059**	**587.6059**	**0.0166**		**587.9538**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0052	10.3081	8.8698	0.0133		0.6027	0.6027		0.5553	0.5553		1,326.575 8	1,326.575 8	0.4051		1,335.083 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0052**	**10.3081**	**8.8698**	**0.0133**		**0.6027**	**0.6027**		**0.5553**	**0.5553**		**1,326.575 8**	**1,326.575 8**	**0.4051**		**1,335.083 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0375	0.0483	0.5962	1.7600e-003	0.1453	9.8000e-004	0.1463	0.0385	9.1000e-004	0.0395		136.4826	136.4826	6.0100e-003		136.6087
Total	**0.0375**	**0.0483**	**0.5962**	**1.7600e-003**	**0.1453**	**9.8000e-004**	**0.1463**	**0.0385**	**9.1000e-004**	**0.0395**		**136.4826**	**136.4826**	**6.0100e-003**		**136.6087**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0052	10.3081	8.8698	0.0133		0.6027	0.6027		0.5553	0.5553	0.0000	1,326.5758	1,326.5758	0.4051		1,335.0833
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0052**	**10.3081**	**8.8698**	**0.0133**		**0.6027**	**0.6027**		**0.5553**	**0.5553**	**0.0000**	**1,326.5758**	**1,326.5758**	**0.4051**		**1,335.0833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0375	0.0483	0.5962	1.7600e-003	0.1125	9.8000e-004	0.1135	0.0305	9.1000e-004	0.0314		136.4826	136.4826	6.0100e-003		136.6087
Total	**0.0375**	**0.0483**	**0.5962**	**1.7600e-003**	**0.1125**	**9.8000e-004**	**0.1135**	**0.0305**	**9.1000e-004**	**0.0314**		**136.4826**	**136.4826**	**6.0100e-003**		**136.6087**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.9602					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**26.2588**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0173	0.0223	0.2752	8.1000e-004	0.0671	4.5000e-004	0.0675	0.0178	4.2000e-004	0.0182		62.9920	62.9920	2.7700e-003		63.0502
Total	**0.0173**	**0.0223**	**0.2752**	**8.1000e-004**	**0.0671**	**4.5000e-004**	**0.0675**	**0.0178**	**4.2000e-004**	**0.0182**		**62.9920**	**62.9920**	**2.7700e-003**		**63.0502**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.9602					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**26.2588**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0173	0.0223	0.2752	8.1000e-004	0.0519	4.5000e-004	0.0524	0.0141	4.2000e-004	0.0145		62.9920	62.9920	2.7700e-003		63.0502
Total	**0.0173**	**0.0223**	**0.2752**	**8.1000e-004**	**0.0519**	**4.5000e-004**	**0.0524**	**0.0141**	**4.2000e-004**	**0.0145**		**62.9920**	**62.9920**	**2.7700e-003**		**63.0502**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
University/College (4Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510011	0.056836	0.192178	0.151564	0.041643	0.005905	0.015642	0.015146	0.001440	0.002149	0.004721	0.000504	0.002262

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
NaturalGas Unmitigated	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
University/College (4Yr)	3261.16	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Total		**0.0352**	**0.3197**	**0.2686**	**1.9200e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.6663**	**383.6663**	**7.3500e-003**	**7.0300e-003**	**386.0012**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
University/College (4Yr)	3.26116	0.0352	0.3197	0.2686	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.6663	383.6663	7.3500e-003	7.0300e-003	386.0012
Total		**0.0352**	**0.3197**	**0.2686**	**1.9200e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.6663**	**383.6663**	**7.3500e-003**	**7.0300e-003**	**386.0012**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Unmitigated	1.9753	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4765					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0127	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Total	**1.9753**	**1.2500e-003**	**0.1331**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2814**	**0.2814**	**7.7000e-004**		**0.2977**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4765					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0127	1.2500e-003	0.1331	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2814	0.2814	7.7000e-004		0.2977
Total	**1.9753**	**1.2500e-003**	**0.1331**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2814**	**0.2814**	**7.7000e-004**		**0.2977**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B

Greenhouse Gas Assessment

Greenhouse Gas Assessment
UCI Classroom Building Project

CONSULTANT:

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14725 Alton Parkway
Irvine, California 92618

Michael Baker INTERNATIONAL

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GREENHOUSE GAS ASSESSMENT

for the

UCI Classroom Building Project

University of California, Irvine

Consultant:

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April 11, 2016

JN 152595

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SYMBOLS, ABBREVIATIONS, AND ACRONYMS

AB	Assembly Bill
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BAU	business as usual
CAFE	corporate average fleet fuel economy
CalGreen	California Green Building Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CO_2	carbon dioxide
CO_2eq	carbon dioxide equivalent
EPA	U.S. Environmental Protection Agency
FCAA	Federal Clean Air Act
GHG	greenhouse gas
GWP	Global Warming Potential
H_2O	water vapor
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
hp	horsepower
IPCC	International Panel for Climate Change
lbs	pounds
LEED	Leadership in Engineering and Environmental Design
LOS	level of service
LSTs	Localized Significance Thresholds
MMT	million metric tons
mpg	miles per gallon
MPO	metropolitan planning organization
$MTCO_2eq$	metric tons of carbon dioxide equivalents
N_2O	nitrous oxide
OAL	Office of Administrative Law
O_3	ozone
OPR	Office of Planning and Research
PFCs	Perfluorocarbons
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
PST	Pacific Standard Time
RH	relative humidity
RTP	Regional Transportation Plan
SB	Senate Bill

SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Community Strategy
SF_6	Sulfur hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
UV-B	ultraviolet B rays
VMT	vehicle miles traveled
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

The purpose of this Greenhouse Gas (GHG) Assessment is to evaluate potential short- and long-term greenhouse gas (GHG) impacts resulting from implementation of the proposed University of California, Irvine (UCI) Classroom Building Project ("project" or "proposed project").

The proposed project is located approximately 670 feet to the southeast of the West Peltason Drive and Mesa Road intersection, on the UCI campus, in the City of Irvine, California. The project site is located approximately 1.86 miles south of Interstate 405 (405), and 0.90-mile east of State Route 73 (SR-73). The project site currently consists of a modular building and open space area referred to as Founders' Court, and is situated between Ring Road and Inner Ring Road.

The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles. The project would provide a new bicycle path between Ring Road to the north/northwest and Inner Ring Road to the south/southwest, and would modify the accessible pedestrian path from the Parking Lot 7 to the north/northwest to the project site. Vehicle service roads to the north and south of Ring Road would be realigned as part of the proposed project.

<u>Greenhouse Gas Impacts</u>. The proposed project would result in less than significant GHG impacts. Additionally, the project would not conflict with a plan, policy, or regulation adopted for the purposes of reducing GHG emissions.

1.0 INTRODUCTION

The purpose of this Greenhouse Gas (GHG) Assessment is to evaluate potential short- and long-term GHG impacts resulting from implementation of the proposed University of California, Irvine (UCI) Classroom Building Project ("project" or "proposed project") on the UCI campus.

1.1 PROJECT LOCATION

The proposed project is located approximately 670 feet to the southeast of West Peltason Drive and Mesa Road intersection, on the UCI campus, in the City of Irvine, California. The project site is located approximately 1.86 miles south of Interstate 405 (405), and 0.90-mile east of State Route 73 (SR-73); refer to Exhibit 1, *Regional Vicinity*. The project site currently consists of a modular building and open space area referred to as Founders' Court, and is situated between Ring Road and Inner Ring Road; refer to Exhibit 2, *Site Vicinity*.

1.2 PROJECT DESCRIPTION

The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story, 75,052 square-foot educational building comprised of 1,260 classroom/lecture hall seats and 26 offices/cubicles. The project would provide a new bicycle path between Ring Road to the north/northwest and Inner Ring Road to the south/southwest, and would modify the accessible pedestrian path from the parking lot to the north/northwest to the project site. Vehicle service roads to the north and south of Ring Road would be realigned as part of the proposed project.

Project Site

UCI CLASSROOM BUILDING PROJECT • GREENHOUSE GAS ASSESSMENT

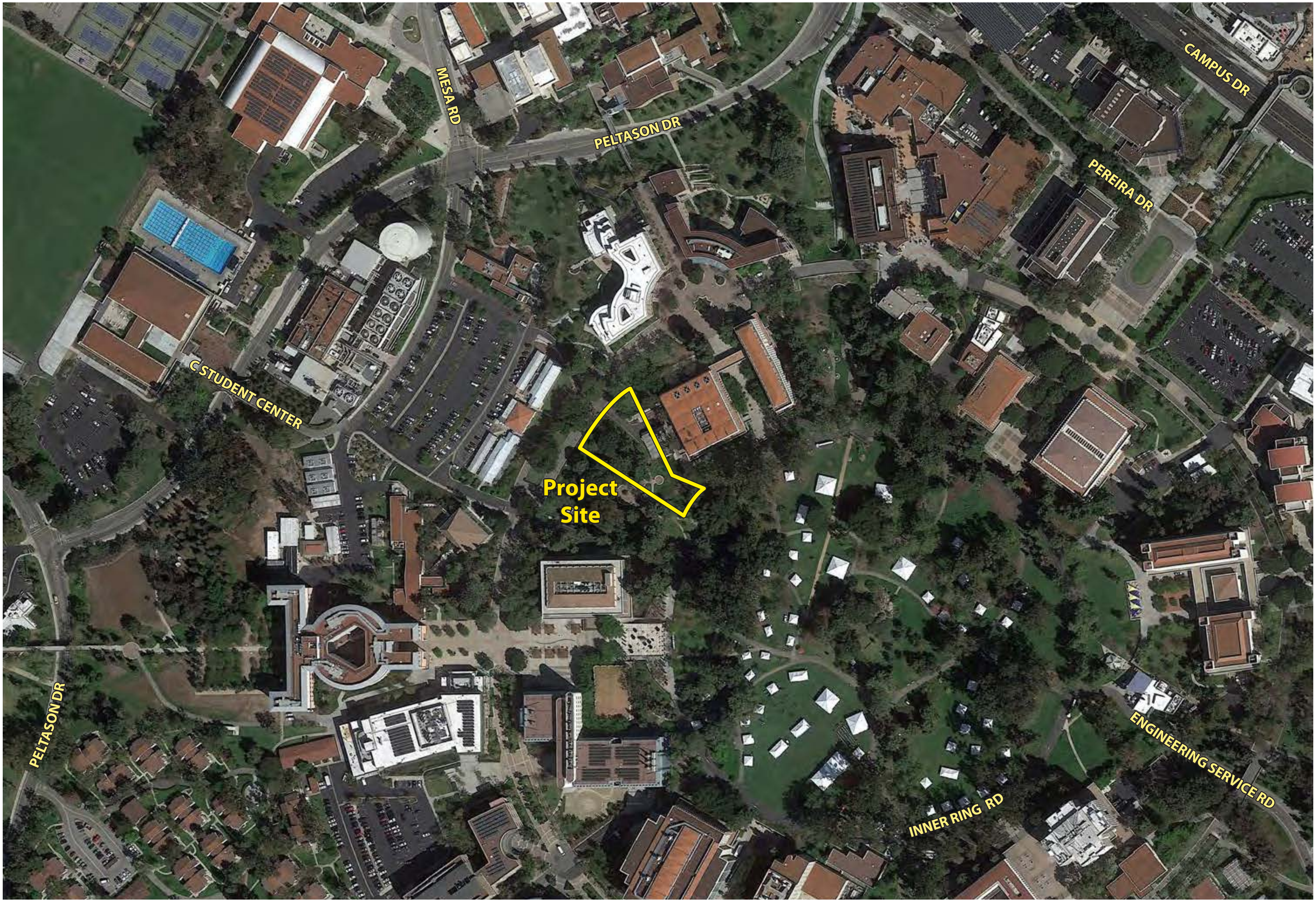
Regional Vicinity

Exhibit 1

not to scale

Michael Baker INTERNATIONAL

03/21/16 JN152595-21602 MAS



Source: Aerial - Google Earth Pro, March 2016

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not to scale

03/21/16 JN152595-21602 MAS

UCI CLASSROOM BUILDING PROJECT • GREENHOUSE GAS ASSESSMENT

Site Vicinity

Exhibit 2

2.0 ENVIRONMENTAL SETTING

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The project site lies within the northwestern portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

CLIMATE

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

The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100°F in recent years.

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. This ocean effect is dominant except for infrequent periods when dry, continental air is brought into the Basin by offshore winds. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O_3) observed during summer months in the

Basin. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the project is located offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

3.0 STATE AND FEDERAL GREENHOUSE GAS STANDARDS

3.1 GLOBAL CLIMATE CHANGE GASES

The natural process through which heat is retained in the troposphere is called the "greenhouse effect."[1] The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant GHGs are water vapor and carbon dioxide (CO_2). Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation.

GHGs include, but are not limited to, the following:[2]

- *Water Vapor (H_2O).* Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively.

  The primary human related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- *Carbon Dioxide (CO_2).* Carbon Dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, CO_2 emissions from fossil fuel combustion increased by 8.8 percent between 1990 and 2013.[3] Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs.

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[1] The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

[2] All Global Warming Potentials are given as 100-year Global Warming Potential. Unless noted otherwise, all Global Warming Potentials were obtained from the IPCC. (Intergovernmental Panel on Climate Change, *Climate Change, The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*, 1996).

[3] U.S. Environmental Protection Agency, *Inventory of United States Greenhouse Gas Emissions and Sinks 1990 to 2013*, April 2015.

- *Methane (CH_4)*. Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation (the digestive process in animals with a rumen, typically cattle, causing methane gas). Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 25.

- *Nitrous Oxide (N_2O)*. Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production (for the industrial production of nylon), and nitric acid production (for rocket fuel, woodworking, and as a chemical reagent). The GWP of nitrous oxide is 298.

- *Hydrofluorocarbons (HFCs)*. HFCs are typically used as refrigerants, aerosol propellants, solvents and fire retardants. The major emissions source of HFCs is from their use as refrigerants in air conditioning systems in both vehicles and buildings. HFCs were developed as a replacement for chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). The GWP of HFCs range from 140 for HFC-152a to 11,700 for HFC-23.[4]

- *Perfluorocarbons (PFCs)*. PFCs are compounds produced as a by-product of various industrial processes associated with aluminum production and the manufacturing of semiconductors. Like HFCs, PFCs generally have long atmospheric lifetimes and high Global Warming Potentials of approximately 6,500 and 9,200.[5]

- *Sulfur hexafluoride (SF_6)*. SF_6 is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm], respectively).[6]

In addition to the major GHGs discussed above, many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors; therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

[4] U.S. Environmental Protection Agency, *Greenhouse Gas Emissions*, September 9, 2013, http://www.epa.gov/climatechange/ghgemissions/gases/fgases.html#Trends, accessed on March 15, 2016.

[5] Ibid.

[6] Ibid.

- *Hydrochlorofluorocarbons (HCFCs)*. HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 77 for HCFC-123 to 2,310 for HCFC-142b.[7]

- *1,1,1 trichloroethane*. 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 110 times that of CO_2.[8]

- *Chlorofluorocarbons (CFCs)*. CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the EPA's Final Rule (57 FR 3374) for the phase out of O_3 depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,750 for CFC 11 to 14,420 for CFC 13.[9]

[7] U.S. Environmental Protection Agency, *Stratospheric Ozone Protection and Climate Change,* http://www.epa.gov/ozone/climate.html, accessed on March 15, 2016.

[8] Ibid.

[9] U.S. Environmental Protection Agency, *Class I Ozone Depleting Substances*, dated August 19, 2010, http://www.epa.gov/ozone/science/ods/classone.html, accessed on March 15, 2016.

4.0 REGULATORY SETTING

4.1 GLOBAL CLIMATE CHANGE REGULATORY PROGRAMS

FEDERAL

The Federal government is extensively engaged in international climate change activities in areas such as science, mitigation, and environmental monitoring. The EPA actively participates in multilateral and bilateral activities by establishing partnerships and providing leadership and technical expertise. Multilaterally, the United States is a strong supporter of activities under the United Nations Framework Convention on Climate Change (UNFCCC) and the IPCC.

In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus around the evidence that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

In December 2007, Congress passed the first increase in corporate average fleet fuel economy (CAFE) standards. The new CAFE standards represent an increase to 35 miles per gallon (mpg) by 2020. In March 2009, the Obama Administration announced that for the 2011 model year, the standard for cars and light trucks will be 27.3 mpg; the standard for cars will be 30.2 mpg; and standard for trucks would be 24.1 mpg. Additionally, in May 2009, President Barack Obama announced plans for a national fuel-economy and GHG emissions standard that would significantly increase mileage requirements for cars and trucks by 2016. The new requirements represent an average standard of 39 mpg for cars and 30 mpg for trucks by 2016.

Currently, the EPA is moving forward with two key climate change regulatory proposals, one to establish a mandatory GHG reporting system. Under the Federal Clean Air Act (FCAA), the EPA is now obligated to issue rules regulating global warming pollution from all major sources. In April 2009, the EPA concluded that GHGs are a danger to public health and welfare, establishing the basis for GHG regulation. However, as of the date of this study, there are no Federal regulations or policies regarding GHG emissions applicable to the proposed project.

STATE

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring, and that there is a real potential for severe adverse environmental, social, and economic effects in the long term. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order B-30-15. Executive Order B-30-15 added the interim target to reduce statewide GHG emissions 40 percent below 1990 levels by 2030, and requires CARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of the State's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in the State of California.

Executive Order S-14-08. Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity

Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-20-04. Executive Order S-20-04, the California Green Building Initiative, (signed into law on December 14, 2004), establishes a goal of reducing energy use in State-owned buildings by 20 percent from a 2003 baseline by 2015. It also encourages the private commercial sector to set the same goal. The initiative places the California Energy Commission (CEC) in charge of developing a building efficiency benchmarking system, commissioning and retro-commissioning (commissioning for existing commercial buildings) guidelines, and developing and refining building energy efficiency standards under Title 24 to meet this goal.

Executive Order S-21-09. Executive Order S-21-09, 33 percent Renewable Energy for California, directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017; and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal that was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Assembly Bill 1493. AB 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty weight classes for passenger vehicles (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily to transport people), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. When fully phased in, the near-term standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30 percent.

Assembly Bill 3018. AB 3018 established the Green Collar Jobs Council (GCJC) under the California Workforce Investment Board (CWIB). The GCJC will develop a comprehensive approach to address California's emerging workforce needs associated with the emerging green economy. This bill will ignite the development of job training programs in the clean and green technology sectors.

Senate Bill 97. SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA.

OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance as described in CEQA Guidelines Section 15064.7 that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administration Law approved the CEQA Guidelines Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The CEQA Guidelines Amendments became effective on March 18, 2010.

Senate Bill 375. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

Senate Bills 1078 and 107. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Senate Bill 1368. SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas fired plant. Furthermore, the legislation states that all electricity provided to California, including imported electricity, must be generated by plants that meet the standards set by CPUC and CEC.

CARB Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce CO_2eq[10] emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MT CO_2eq under a business as usual (BAU)[11] scenario. This is a reduction of 42 million MT CO_2eq, or almost ten percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

AB 32 requires CARB to update the Scoping Plan at least once every five years. CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to

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[10] Carbon Dioxide Equivalent (CO_2eq) - A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

[11] "Business as Usual" refers to emissions that would be expected to occur in the absence of GHG reductions. See http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition." It is broad enough to allow for design features to be counted as reductions.

California and the levels of GHG reduction necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal established in Executive Order S-3-05, though not yet adopted as State law, and observes that "a mid-term statewide emission limit will ensure that the State stays on course to meet our long-term goal." The Scoping Plan update does not establish or propose any specific post-2020 goals, but identifies goals adopted by other governments or recommended by various scientific and policy organizations.

University of California, Irvine

<u>UC Irvine Climate Action Plan</u>

The UCI Climate Action Plan (CAP) was initially adopted in 2007 (updated in 2013) and has guided an array of climate action protection strategies and projects to reduce UCI GHG emissions. The CAP provides a roadmap for UCI to achieve its institutional climate protection commitments in support of the University of California Sustainable Practices Policy and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 40 percent from emissions levels or a total of 79,000 annual metric tons), and achieve climate neutrality (zero net emissions) by 2050. In 2013, the University of California adopted a target year of 2025 for climate neutrality for all UC campus operations.

<u>University of California Sustainable Practices Policy</u>

The University of California Sustainable Practices Policy (Sustainable Practices Policy) establishes goals in nine areas of sustainable practices: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, environmentally preferable purchasing, sustainable foodservice, and sustainable water systems.

5.0 POTENTIAL GREENHOUSE GAS IMPACTS

CEQA THRESHOLDS

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the State *CEQA Guidelines*, as amended. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (refer to Impact Statement GHG-1); and

- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (refer to Impact Statement GHG-2).

The effects of the proposed project have been analyzed based on these standards and thresholds.

SCAQMD Greenhouse Gas Emissions Thresholds

At this time, there is no absolute consensus in the State of California among CEQA lead agencies regarding the analysis of global climate change and the selection of significance criteria. In fact, numerous organizations, both public and private, have released advisories and guidance with recommendations designed to assist decision-makers in the evaluation of GHG emissions given the current uncertainty regarding when emissions reach the point of significance. Lead agencies may elect to rely on thresholds of significance recommended or adopted by State or regional agencies with expertise in the field of global climate change. (See C*EQA Guidelines* Section 15064.7[c].)

The SCAQMD has formed a GHG CEQA Significance Threshold Working Group (Working Group) to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting No. 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.[12]

With the tiered approach, the project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 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

[12] The most recent SCAQMD GHG CEQA Significance Threshold Working Group meeting was held on September 2010.

lower than a screening threshold. For all non-industrial projects, the SCAQMD is proposing a screening threshold of 3,000 $MTCO_2eq$ per year. 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 Tier 4 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 Tier 4 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 Tier 4 third option, the project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2eq$ per service population (SP) per year.[13] 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.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a "service population" basis (the sum of the number of jobs and the number of residents provided by a project) such that the project would allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the State, by the estimated 2035 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate because the threshold can be applied evenly to all project types (residential, commercial/retail only, and mixed-use).

As the project involves an educational facility development on the UCI campus, SCAQMD's 3,000 $MTCO_2eq$ per year screening threshold has been selected as the significance threshold, as it is most applicable to the proposed project. The 3,000 $MTCO_2eq$ per threshold is used in addition to the qualitative thresholds of significance set forth below from section VII of Appendix G to the CEQA Guidelines.

PROJECT RELATED SOURCES OF GREENHOUSE GASES

GHG-1 GENERATE GREENHOUSE GAS EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT?

Level of Significance Before Mitigation: *Less Than Significant Impact.*

Project-related GHG emissions would include emissions from direct and indirect sources. The proposed project would result in direct and indirect emissions of CO_2, N_2O, and CH_4, and would

[13] The project-level efficiency-based threshold of 4.8 $MTCO_2eq$ per SP per year is relative to the 2020 target date. The SCAQMD has also proposed efficiency-based thresholds relative to the 2035 target date to be consistent with the GHG reduction target date of SB 375. GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent. Applying this 40 percent reduction to the 2020 targets results in an efficiency threshold for plans of 4.1 $MTCO_2eq$ per SP per year and an efficiency threshold at the project level of 3.0 $MTCO_2eq$/year.

not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation. Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. Project GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), which relies on trip generation data, and specific land use information to calculate emissions. Table 1, *Estimated Greenhouse Gas Emissions*, presents the estimated CO_2, N_2O, and CH_4 emissions of the proposed project. The CalEEMod outputs are contained within the Appendix A, *Greenhouse Gas Emissions Data*.

Table 1
Estimated Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total Metric Tons of CO_2eq
	Metric Tons/yr[1]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	Metric Tons/yr[1]	Metric Tons of CO_2eq[2]	
Direct Emissions						
• Construction (amortized over 30 years)	13.76	0.00	0.00	0.00	0.00	13.76
• Area Source	0.03	0.00	0.00	0.00	0.00	0.03
• Mobile Source	0.00	0.00	0.00	0.00	0.00	0.00
Total Mitigated Direct Emissions[3]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indirect Emissions						
• Energy	365.28	0.02	0.50	0.00	0.00	365.80
• Water Demand	24.83	0.09	2.30	0.00	0.00	27.22
• Solid Waste Generation	47.64	2.82	70.50	0.00	0.00	120.96
Total Mitigated Indirect Emissions[3]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Mitigated Project-Related Emissions[3]	***[illegible] MTCO₂eq/yr***					
Mitigated GHG Emissions Exceed Threshold?	***No***					

Notes:
1. Emissions calculated using CalEEMod.
2. CO_2 Equivalent values calculated using the EPA Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator, accessed March 15, 2016.
3. Totals may be slightly off due to rounding.

Refer to Appendix A, *Greenhouse Gas Emissions Data*, for detailed model input/output data.

Project Design Features

It is noted that the GHG emissions calculated in CalEEMod, as shown Table 1, include project design features that would reduce project-related operational GHG emissions. The project proposes to demolish the existing 3,000 square-foot modular building, and construct a three-story educational building on the UCI campus that would serve the existing UCI student and faculty population, and would provide pedestrian and bicycle connections to existing on-campus pedestrian/bicycle paths contiguous with the project site. The project would incorporate water conservation measures, such as low-flow faucets, toilets, use of reclaimed water, and water-efficient landscaping and irrigation systems. In addition, the project would meet or exceed the Leadership in Energy and Environmental Design (LEED) Silver rating (or an equivalent rating such as the Build it Green GreenPoint Rated program), and utilize high-efficiency lighting and energy efficient appliances in compliance with the Sustainable Practices Policy.

Reduction measures applied in CalEEMod and accounted for in Table 1 from project design features include the following:

- Improved destination accessibility, as the project site is located within 0.30 miles of job center;
- Pedestrian connections to the off-site circulation network;
- Implement Trip Reduction Program;
- Employee Vanpool/Shuttle;
- Provide Ride Sharing Program;
- Low VOC paint;
- Water-efficient irrigation systems;
- 20 percent outdoor water usage reduction;
- Reclaimed water used for 100 percent of outdoor water use;
- Low-flow faucets, toilets, and showers;
- Install High-Efficiency Lighting;

Direct Project-Related Sources of Greenhouse Gases

- Construction Emissions. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.[14] As seen in Table 1, the proposed project would result in 412.80 $MTCO_2eq$, which represents 13.76 $MTCO_2eq$/yr when amortized over 30 years.

- Area Source. Area source emissions were calculated using CalEEMod and project-specific land use data. As noted in Table 1, the proposed project would not result in 0.03 $MTCO_2eq$/yr of area source GHG emissions.

- Mobile Source. As noted above, the project would not generate any new vehicle trips, as the new educational facility would be used by the existing UCI faculty and student population. Therefore, the project would not result in any mobile source emissions.

[14] The project lifetime is based on the standard 30 year assumption of the South Coast Air Quality Management District, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*, October 2008.

Indirect Project-Related Sources of Greenhouse Gases

- Energy Consumption. Energy consumption emissions were calculated using the CalEEMod model and project-specific land use data. Electricity would be provided to the project site via Southern California Edison (SCE). The project would indirectly result in 365.80 $MTCO_2eq$/year due to energy consumption.

- Water Demand. The project operations would result in a demand of approximately 7.06 million gallons of water per year. Emissions from indirect energy impacts due to water supply would result in 27.22 $MTCO_2eq$/year.

- Solid Waste. Solid waste associated with operations of the proposed project would result in 120.96 $MTCO_2eq$/year.

Total Project-Related Sources of Greenhouse Gases

As depicted in Table 1, the project's GHG emissions would be 527.77 $MTCO_2eq$/yr. As such, the project would not exceed the SCAQMD's 3,000 $MTCO_2eq$ per year GHG threshold. Impacts in this regard would be less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance After Mitigation: *Less Than Significant Impact.*

GHG PLAN CONSISTENCY

GHG-2 CONFLICT WITH AN APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES?

Level of Significance Before Mitigation: *Less Than Significant Impact.*

UCI adopted a Climate Action Plan (CAP) in 2007 (updated in 2013) in cooperation with AB 32, and has guided an array of climate action protection strategies and projects to reduce UCI GHG emissions. The purpose of this CAP is to identify UCI's long-term vision and commitment to reduce its GHG emissions in support of the University of California Sustainability Practices Policy and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 40 percent from emissions levels or a total of 79,000 annual metric tons), and ultimately achieve climate neutrality (zero net emissions) by 2050. The CAP does not contain GHG thresholds. However, as the project-related GHG emissions are below the SCAQMD's 3,000 $MTCO_2eq$ per year threshold (in compliance with AB 32), the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Thus, a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

Level of Significance After Mitigation: *Less Than Significant Impact.*

6.0 REFERENCES

6.1 LIST OF PREPARERS

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Ryan Chiene, Environmental Analyst
Faye Stroud, Graphics

6.2 DOCUMENTS

1. California Air Resources Board, *Climate Change Proposed Scoping Plan: A Framework for Change*, adopted December 2008.

2. California Office of the Attorney General, *Addressing Global Warming Impacts at the Project Level*, updated January 6, 2008.

3. California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March, 2006.

4. California Environmental Protection Agency, *AB 1493 Briefing Package*, 2008.

5. Intergovernmental Panel on Climate Change, *Climate Change, The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*, 1996.

6. U.S. Climate Data, *Climate Irvine - California*, http://www.usclimatedata.com/climate/irvine/california/united-states/usca2494, accessed on March 15, 2016.

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8. United States Environmental Protection Agency, *Greenhouse Gas Emissions*, September 9, 2013, http://www.epa.gov/climatechange/ghgemissions/gases/fgases.html#Trends, accessed on March 15, 2016.

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10. University of California, Irvine, *Climate Action Plan, 2013 Update*, http://sustainability.uci.edu/wp-content/uploads/sites/5/2014/12/ClimateActionPlanUpdate20132.pdf, accessed March 2016.

6.3 WEB SITES/PROGRAMS

Environ International Corporation and the South Coast Air Quality Management District, *California Emissions Estimator Model (CalEEMod) Version 2013.2.2*, 2013.

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APPENDIX A: GREENHOUSE GAS EMISSIONS DATA

UCI Classroom

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4Yr)	1,286.00	Student	1.20	75,052.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project dettails

Construction Phase - Construction phasing

Off-road Equipment - No cranes

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Site acreage

Demolition -

Vehicle Trips - Building will serve existing students and faculty - no new trips added

Construction Off-road Equipment Mitigation - per SCAQMD

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	200.00	303.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	4.00	66.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	PhaseEndDate	9/30/2016	10/1/2016
tblConstructionPhase	PhaseEndDate	4/2/2018	5/1/2018
tblConstructionPhase	PhaseStartDate	3/2/2018	4/1/2018
tblGrading	AcresOfGrading	24.75	1.20
tblGrading	MaterialExported	0.00	3,000.00
tblLandUse	LandUseSquareFeet	236,363.54	75,052.00
tblLandUse	LotAcreage	5.43	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	1.30	0.00
tblVehicleTrips	WD_TR	2.38	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1017	1.0521	0.7447	9.2000e-004	0.1591	0.0571	0.2162	0.0843	0.0528	0.1372	0.0000	84.8135	84.8135	0.0196	0.0000	85.2245
2017	0.3469	1.8847	1.9655	3.1800e-003	0.2074	0.1282	0.3356	0.0975	0.1250	0.2225	0.0000	258.3930	258.3930	0.0368	0.0000	259.1666
2018	0.9434	0.4757	0.4975	8.3000e-004	0.0131	0.0305	0.0436	3.5200e-003	0.0295	0.0330	0.0000	68.2318	68.2318	0.0108	0.0000	68.4583
Total	**1.3920**	**3.4125**	**3.2077**	**4.9300e-003**	**0.3796**	**0.2157**	**0.5953**	**0.1853**	**0.2073**	**0.3926**	**0.0000**	**411.4383**	**411.4383**	**0.0672**	**0.0000**	**412.8494**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1017	1.0521	0.7447	9.2000e-004	0.0622	0.0571	0.1193	0.0322	0.0528	0.0850	0.0000	84.8134	84.8134	0.0196	0.0000	85.2244
2017	0.3469	1.8847	1.9655	3.1800e-003	0.1004	0.1282	0.2286	0.0427	0.1250	0.1677	0.0000	258.3928	258.3928	0.0368	0.0000	259.1664
2018	0.9434	0.4757	0.4975	8.3000e-004	0.0102	0.0305	0.0407	2.8100e-003	0.0295	0.0323	0.0000	68.2318	68.2318	0.0108	0.0000	68.4582
Total	**1.3920**	**3.4125**	**3.2077**	**4.9300e-003**	**0.1728**	**0.2157**	**0.3885**	**0.0777**	**0.2073**	**0.2850**	**0.0000**	**411.4380**	**411.4380**	**0.0672**	**0.0000**	**412.8491**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.49**	**0.00**	**34.74**	**58.09**	**0.00**	**27.41**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3598	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338
Energy	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	365.2777	365.2777	0.0151	4.0300e-003	366.8452
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	47.6400	0.0000	47.6400	2.8154	0.0000	106.7642
Water						0.0000	0.0000		0.0000	0.0000	0.8735	23.9522	24.8257	0.0908	2.3500e-003	27.4603
Total	**0.3662**	**0.0585**	**0.0657**	**3.5000e-004**	**0.0000**	**4.4900e-003**	**4.4900e-003**	**0.0000**	**4.4900e-003**	**4.4900e-003**	**48.5135**	**389.2618**	**437.7753**	**2.9214**	**6.3800e-003**	**501.1035**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3598	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338
Energy	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	365.2777	365.2777	0.0151	4.0300e-003	366.8452
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	47.6400	0.0000	47.6400	2.8154	0.0000	106.7642
Water						0.0000	0.0000		0.0000	0.0000	0.8735	23.9522	24.8257	0.0908	2.3400e-003	27.4590
Total	**0.3662**	**0.0585**	**0.0657**	**3.5000e-004**	**0.0000**	**4.4900e-003**	**4.4900e-003**	**0.0000**	**4.4900e-003**	**4.4900e-003**	**48.5135**	**389.2618**	**437.7753**	**2.9214**	**6.3700e-003**	**501.1021**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.16**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2016	10/1/2016	5	22	
2	Grading	Grading	10/2/2016	1/2/2017	5	66	
3	Building Construction	Building Construction	1/3/2017	3/1/2018	5	303	
4	Paving	Paving	4/1/2018	5/1/2018	5	22	
5	Architectural Coating	Architectural Coating	5/2/2018	8/2/2018	5	67	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,578; Non-Residential Outdoor: 37,526 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	0	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	375.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	32.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4800e-003	0.0000	1.4800e-003	2.2000e-004	0.0000	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.3108	0.2365	2.7000e-004		0.0192	0.0192		0.0180	0.0180	0.0000	24.8192	24.8192	6.2700e-003	0.0000	24.9509
Total	**0.0320**	**0.3108**	**0.2365**	**2.7000e-004**	**1.4800e-003**	**0.0192**	**0.0207**	**2.2000e-004**	**0.0180**	**0.0182**	**0.0000**	**24.8192**	**24.8192**	**6.2700e-003**	**0.0000**	**24.9509**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	2.0300e-003	1.5600e-003	1.0000e-005	1.2000e-004	3.0000e-005	1.5000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4703	0.4703	0.0000	0.0000	0.4704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	7.2000e-004	7.5500e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4150	1.4150	7.0000e-005	0.0000	1.4165
Total	**6.2000e-004**	**2.7500e-003**	**9.1100e-003**	**3.0000e-005**	**1.6900e-003**	**4.0000e-005**	**1.7300e-003**	**4.5000e-004**	**4.0000e-005**	**4.9000e-004**	**0.0000**	**1.8853**	**1.8853**	**7.0000e-005**	**0.0000**	**1.8868**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5000e-004	0.0000	5.5000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.3108	0.2365	2.7000e-004		0.0192	0.0192		0.0180	0.0180	0.0000	24.8191	24.8191	6.2700e-003	0.0000	24.9509
Total	**0.0320**	**0.3108**	**0.2365**	**2.7000e-004**	**5.5000e-004**	**0.0192**	**0.0197**	**8.0000e-005**	**0.0180**	**0.0180**	**0.0000**	**24.8191**	**24.8191**	**6.2700e-003**	**0.0000**	**24.9509**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	2.0300e-003	1.5600e-003	1.0000e-005	1.0000e-004	3.0000e-005	1.3000e-004	3.0000e-005	3.0000e-005	5.0000e-005	0.0000	0.4703	0.4703	0.0000	0.0000	0.4704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	7.2000e-004	7.5500e-003	2.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.4150	1.4150	7.0000e-005	0.0000	1.4165
Total	**6.2000e-004**	**2.7500e-003**	**9.1100e-003**	**3.0000e-005**	**1.3200e-003**	**4.0000e-005**	**1.3600e-003**	**3.6000e-004**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.8853**	**1.8853**	**7.0000e-005**	**0.0000**	**1.8868**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1499	0.0000	0.1499	0.0820	0.0000	0.0820	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0647	0.6837	0.4443	4.6000e-004		0.0371	0.0371		0.0341	0.0341	0.0000	43.1299	43.1299	0.0130	0.0000	43.4031
Total	**0.0647**	**0.6837**	**0.4443**	**4.6000e-004**	**0.1499**	**0.0371**	**0.1869**	**0.0820**	**0.0341**	**0.1161**	**0.0000**	**43.1299**	**43.1299**	**0.0130**	**0.0000**	**43.4031**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5300e-003	0.0535	0.0411	1.4000e-004	3.2000e-003	7.7000e-004	3.9700e-003	8.8000e-004	7.0000e-004	1.5800e-003	0.0000	12.4065	12.4065	9.0000e-005	0.0000	12.4083
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.3200e-003	0.0137	3.0000e-005	2.8500e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004	0.0000	2.5727	2.5727	1.3000e-004	0.0000	2.5754
Total	**4.4200e-003**	**0.0549**	**0.0549**	**1.7000e-004**	**6.0500e-003**	**7.9000e-004**	**6.8400e-003**	**1.6400e-003**	**7.2000e-004**	**2.3600e-003**	**0.0000**	**14.9792**	**14.9792**	**2.2000e-004**	**0.0000**	**14.9837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0555	0.0000	0.0555	0.0304	0.0000	0.0304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0647	0.6837	0.4443	4.6000e-004		0.0371	0.0371		0.0341	0.0341	0.0000	43.1298	43.1298	0.0130	0.0000	43.4030
Total	**0.0647**	**0.6837**	**0.4443**	**4.6000e-004**	**0.0555**	**0.0371**	**0.0926**	**0.0304**	**0.0341**	**0.0645**	**0.0000**	**43.1298**	**43.1298**	**0.0130**	**0.0000**	**43.4030**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	3.5300e-003	0.0535	0.0411	1.4000e-004	2.5700e-003	7.7000e-004	3.3400e-003	7.2000e-004	7.0000e-004	1.4300e-003	0.0000	12.4065	12.4065	9.0000e-005	0.0000	12.4083
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.3200e-003	0.0137	3.0000e-005	2.2100e-003	2.0000e-005	2.2300e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.5727	2.5727	1.3000e-004	0.0000	2.5754
Total	**4.4200e-003**	**0.0549**	**0.0549**	**1.7000e-004**	**4.7800e-003**	**7.9000e-004**	**5.5700e-003**	**1.3200e-003**	**7.2000e-004**	**2.0500e-003**	**0.0000**	**14.9792**	**14.9792**	**2.2000e-004**	**0.0000**	**14.9837**

3.3 Grading - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.1499	0.0000	0.1499	0.0820	0.0000	0.0820	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	9.8900e-003	6.5900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.6528	0.6528	2.0000e-004	0.0000	0.6570
Total	**9.4000e-004**	**9.8900e-003**	**6.5900e-003**	**1.0000e-005**	**0.1499**	**5.3000e-004**	**0.1504**	**0.0820**	**4.9000e-004**	**0.0825**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-004**	**0.0000**	**0.6570**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	7.6000e-004	6.1000e-004	0.0000	2.4400e-003	1.0000e-005	2.4500e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	0.1877	0.1877	0.0000	0.0000	0.1878
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0381	0.0381	0.0000	0.0000	0.0381
Total	**6.0000e-005**	**7.8000e-004**	**8.0000e-004**	**0.0000**	**2.4800e-003**	**1.0000e-005**	**2.4900e-003**	**6.1000e-004**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**0.2258**	**0.2258**	**0.0000**	**0.0000**	**0.2258**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0555	0.0000	0.0555	0.0304	0.0000	0.0304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	9.8900e-003	6.5900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.6528	0.6528	2.0000e-004	0.0000	0.6570
Total	**9.4000e-004**	**9.8900e-003**	**6.5900e-003**	**1.0000e-005**	**0.0555**	**5.3000e-004**	**0.0561**	**0.0304**	**4.9000e-004**	**0.0309**	**0.0000**	**0.6528**	**0.6528**	**2.0000e-004**	**0.0000**	**0.6570**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	5.0000e-005	7.6000e-004	6.1000e-004	0.0000	1.8100e-003	1.0000e-005	1.8200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	0.1877	0.1877	0.0000	0.0000	0.1878
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	2.0000e-005	1.9000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0381	0.0381	0.0000	0.0000	0.0381
Total	**6.0000e-005**	**7.8000e-004**	**8.0000e-004**	**0.0000**	**1.8400e-003**	**1.0000e-005**	**1.8500e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**0.2258**	**0.2258**	**0.0000**	**0.0000**	**0.2258**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.3197	1.7274	1.5856	2.2900e-003		0.1254	0.1254		0.1225	0.1225	0.0000	188.1282	188.1282	0.0346	0.0000	188.8540
Total	**0.3197**	**1.7274**	**1.5856**	**2.2900e-003**		**0.1254**	**0.1254**		**0.1225**	**0.1225**	**0.0000**	**188.1282**	**188.1282**	**0.0346**	**0.0000**	**188.8540**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.1276	0.1735	3.3000e-004	9.5700e-003	1.9100e-003	0.0115	2.7300e-003	1.7600e-003	4.4900e-003	0.0000	29.9676	29.9676	2.1000e-004	0.0000	29.9721
Worker	0.0129	0.0190	0.1991	5.4000e-004	0.0455	3.2000e-004	0.0458	0.0121	2.9000e-004	0.0124	0.0000	39.4186	39.4186	1.8600e-003	0.0000	39.4577
Total	**0.0262**	**0.1466**	**0.3725**	**8.7000e-004**	**0.0551**	**2.2300e-003**	**0.0573**	**0.0148**	**2.0500e-003**	**0.0169**	**0.0000**	**69.3862**	**69.3862**	**2.0700e-003**	**0.0000**	**69.4298**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3197	1.7274	1.5856	2.2900e-003		0.1254	0.1254		0.1225	0.1225	0.0000	188.1279	188.1279	0.0346	0.0000	188.8537
Total	**0.3197**	**1.7274**	**1.5856**	**2.2900e-003**		**0.1254**	**0.1254**		**0.1225**	**0.1225**	**0.0000**	**188.1279**	**188.1279**	**0.0346**	**0.0000**	**188.8537**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.1276	0.1735	3.3000e-004	7.7600e-003	1.9100e-003	9.6700e-003	2.2900e-003	1.7600e-003	4.0400e-003	0.0000	29.9676	29.9676	2.1000e-004	0.0000	29.9721
Worker	0.0129	0.0190	0.1991	5.4000e-004	0.0352	3.2000e-004	0.0356	9.5600e-003	2.9000e-004	9.8600e-003	0.0000	39.4186	39.4186	1.8600e-003	0.0000	39.4577
Total	**0.0262**	**0.1466**	**0.3725**	**8.7000e-004**	**0.0430**	**2.2300e-003**	**0.0452**	**0.0119**	**2.0500e-003**	**0.0139**	**0.0000**	**69.3862**	**69.3862**	**2.0700e-003**	**0.0000**	**69.4298**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.2709	0.2637	3.9000e-004		0.0184	0.0184		0.0180	0.0180	0.0000	31.8409	31.8409	5.4500e-003	0.0000	31.9554
Total	**0.0476**	**0.2709**	**0.2637**	**3.9000e-004**		**0.0184**	**0.0184**		**0.0180**	**0.0180**	**0.0000**	**31.8409**	**31.8409**	**5.4500e-003**	**0.0000**	**31.9554**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0199	0.0281	6.0000e-005	1.6300e-003	3.1000e-004	1.9300e-003	4.6000e-004	2.8000e-004	7.4000e-004	0.0000	5.0046	5.0046	4.0000e-005	0.0000	5.0053
Worker	1.9900e-003	2.9500e-003	0.0309	9.0000e-005	7.7300e-003	5.0000e-005	7.7800e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.4455	6.4455	3.0000e-004	0.0000	6.4517
Total	**4.1100e-003**	**0.0228**	**0.0590**	**1.5000e-004**	**9.3600e-003**	**3.6000e-004**	**9.7100e-003**	**2.5100e-003**	**3.3000e-004**	**2.8400e-003**	**0.0000**	**11.4501**	**11.4501**	**3.4000e-004**	**0.0000**	**11.4570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.2709	0.2637	3.9000e-004		0.0184	0.0184		0.0180	0.0180	0.0000	31.8409	31.8409	5.4500e-003	0.0000	31.9554
Total	**0.0476**	**0.2709**	**0.2637**	**3.9000e-004**		**0.0184**	**0.0184**		**0.0180**	**0.0180**	**0.0000**	**31.8409**	**31.8409**	**5.4500e-003**	**0.0000**	**31.9554**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0199	0.0281	6.0000e-005	1.3200e-003	3.1000e-004	1.6200e-003	3.9000e-004	2.8000e-004	6.7000e-004	0.0000	5.0046	5.0046	4.0000e-005	0.0000	5.0053
Worker	1.9900e-003	2.9500e-003	0.0309	9.0000e-005	5.9900e-003	5.0000e-005	6.0400e-003	1.6200e-003	5.0000e-005	1.6700e-003	0.0000	6.4455	6.4455	3.0000e-004	0.0000	6.4517
Total	**4.1100e-003**	**0.0228**	**0.0590**	**1.5000e-004**	**7.3100e-003**	**3.6000e-004**	**7.6600e-003**	**2.0100e-003**	**3.3000e-004**	**2.3400e-003**	**0.0000**	**11.4501**	**11.4501**	**3.4000e-004**	**0.0000**	**11.4570**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1134	0.0976	1.5000e-004		6.6300e-003	6.6300e-003		6.1100e-003	6.1100e-003	0.0000	13.2379	13.2379	4.0400e-003	0.0000	13.3228
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0111**	**0.1134**	**0.0976**	**1.5000e-004**		**6.6300e-003**	**6.6300e-003**		**6.1100e-003**	**6.1100e-003**	**0.0000**	**13.2379**	**13.2379**	**4.0400e-003**	**0.0000**	**13.3228**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	6.0000e-004	6.2800e-003	2.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3092	1.3092	6.0000e-005	0.0000	1.3105
Total	**4.0000e-004**	**6.0000e-004**	**6.2800e-003**	**2.0000e-005**	**1.5700e-003**	**1.0000e-005**	**1.5800e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3092**	**1.3092**	**6.0000e-005**	**0.0000**	**1.3105**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1134	0.0976	1.5000e-004		6.6300e-003	6.6300e-003		6.1100e-003	6.1100e-003	0.0000	13.2379	13.2379	4.0400e-003	0.0000	13.3228
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0111**	**0.1134**	**0.0976**	**1.5000e-004**		**6.6300e-003**	**6.6300e-003**		**6.1100e-003**	**6.1100e-003**	**0.0000**	**13.2379**	**13.2379**	**4.0400e-003**	**0.0000**	**13.3228**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	6.0000e-004	6.2800e-003	2.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.3092	1.3092	6.0000e-005	0.0000	1.3105
Total	**4.0000e-004**	**6.0000e-004**	**6.2800e-003**	**2.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.3092**	**1.3092**	**6.0000e-005**	**0.0000**	**1.3105**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8697					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.0672	0.0621	1.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003	0.0000	8.5534	8.5534	8.1000e-004	0.0000	8.5705
Total	**0.8797**	**0.0672**	**0.0621**	**1.0000e-004**		**5.0400e-003**	**5.0400e-003**		**5.0400e-003**	**5.0400e-003**	**0.0000**	**8.5534**	**8.5534**	**8.1000e-004**	**0.0000**	**8.5705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.4000e-004	8.8200e-003	3.0000e-005	2.2100e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8403	1.8403	8.0000e-005	0.0000	1.8420
Total	**5.7000e-004**	**8.4000e-004**	**8.8200e-003**	**3.0000e-005**	**2.2100e-003**	**2.0000e-005**	**2.2200e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8403**	**1.8403**	**8.0000e-005**	**0.0000**	**1.8420**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8697					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.0672	0.0621	1.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003	0.0000	8.5534	8.5534	8.1000e-004	0.0000	8.5705
Total	**0.8797**	**0.0672**	**0.0621**	**1.0000e-004**		**5.0400e-003**	**5.0400e-003**		**5.0400e-003**	**5.0400e-003**	**0.0000**	**8.5534**	**8.5534**	**8.1000e-004**	**0.0000**	**8.5705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.4000e-004	8.8200e-003	3.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.6000e-004	1.0000e-005	4.8000e-004	0.0000	1.8403	1.8403	8.0000e-005	0.0000	1.8420
Total	**5.7000e-004**	**8.4000e-004**	**8.8200e-003**	**3.0000e-005**	**1.7100e-003**	**2.0000e-005**	**1.7200e-003**	**4.6000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.8403**	**1.8403**	**8.0000e-005**	**0.0000**	**1.8420**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
University/College (4Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510011	0.056836	0.192178	0.151564	0.041643	0.005905	0.015642	0.015146	0.001440	0.002149	0.004721	0.000504	0.002262

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	301.7574	301.7574	0.0139	2.8700e-003	302.9384
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	301.7574	301.7574	0.0139	2.8700e-003	302.9384
NaturalGas Mitigated	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	63.5203	63.5203	1.2200e-003	1.1600e-003	63.9068
NaturalGas Unmitigated	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	63.5203	63.5203	1.2200e-003	1.1600e-003	63.9068

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
University/College (4Yr)	1.19032e+006	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	63.5203	63.5203	1.2200e-003	1.1600e-003	63.9068
Total		**6.4200e-003**	**0.0584**	**0.0490**	**3.5000e-004**		**4.4300e-003**	**4.4300e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**63.5203**	**63.5203**	**1.2200e-003**	**1.1600e-003**	**63.9068**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
University/College (4Yr)	1.19032e+006	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	63.5203	63.5203	1.2200e-003	1.1600e-003	63.9068
Total		**6.4200e-003**	**0.0584**	**0.0490**	**3.5000e-004**		**4.4300e-003**	**4.4300e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**63.5203**	**63.5203**	**1.2200e-003**	**1.1600e-003**	**63.9068**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
University/College (4Yr)	1.05448e+006	301.7574	0.0139	2.8700e-003	302.9384
Total		**301.7574**	**0.0139**	**2.8700e-003**	**302.9384**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
University/College (4Yr)	1.05448e+006	301.7574	0.0139	2.8700e-003	302.9384
Total		**301.7574**	**0.0139**	**2.8700e-003**	**302.9384**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3598	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338
Unmitigated	0.3598	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5900e-003	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338
Total	**0.3598**	**1.6000e-004**	**0.0166**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0319**	**0.0319**	**9.0000e-005**	**0.0000**	**0.0338**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2712					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5900e-003	1.6000e-004	0.0166	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0319	0.0319	9.0000e-005	0.0000	0.0338
Total	**0.3598**	**1.6000e-004**	**0.0166**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0319**	**0.0319**	**9.0000e-005**	**0.0000**	**0.0338**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.8257	0.0908	2.3400e-003	27.4590
Unmitigated	24.8257	0.0908	2.3500e-003	27.4603

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
University/College (4Yr)	2.75345 / 4.30669	24.8257	0.0908	2.3500e-003	27.4603
Total		**24.8257**	**0.0908**	**2.3500e-003**	**27.4603**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
University/College (4Yr)	2.75345 / 4.30669	24.8257	0.0908	2.3400e-003	27.4590
Total		**24.8257**	**0.0908**	**2.3400e-003**	**27.4590**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.6400	2.8154	0.0000	106.7642
Unmitigated	47.6400	2.8154	0.0000	106.7642

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
University/College (4Yr)	234.69	47.6400	2.8154	0.0000	106.7642
Total		**47.6400**	**2.8154**	**0.0000**	**106.7642**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
University/College (4Yr)	234.69	47.6400	2.8154	0.0000	106.7642
Total		**47.6400**	**2.8154**	**0.0000**	**106.7642**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX C

Traffic Study

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

April 18, 2016
File: 2073008130

Attention: Lindsey Hashimoto
Environmental Planning and Sustainability
University of California, Irvine
750 University Tower
Irvine, CA 92697-2325

Dear Ms. Hashimoto,

Reference: Classroom Building Project Traffic Evaluation

The proposed Classroom Building on the UCI main campus would replace a 3,000 square-foot modular building with an approximately 75,052 square-foot 3-story building. The new building would include 1,260 classroom and lecture hall seats and 26 offices/cubicles. Proposed parking for faculty/staff and visitors would be provided by Parking Lot 7. The nearest parking for students and additional faculty/staff is Mesa Parking Structure (MPS) on Mesa Road.

The new Classroom Building would not result in a significant increase in campus population of faculty, staff, or students at this time. Since the project will not increase the campus population, potential traffic impacts from the project are concentrated in the immediate area of the site location, and no off-campus impacts are anticipated.

The trip generation is based on the number of students likely to attend classes at the new building, the number of faculty in relation to that number of students, the number of faculty/staff in the offices/cubicles, and the amount of students and faculty/staff driving to the campus. It was assumed that approximately 56 percent of the classroom and lecture hall seats would be in use during the typical AM, mid-day, and PM peak hours; therefore, approximately 706 students would attend classes or lectures at the new building during the peak hours. It was further assumed, based on information in the UCI Main Campus Traffic Model (MCTM), that half of the students are commuters. UCI's annual AQMD ridership survey revealed that UCI commuter students have an average vehicle occupancy of 1.6 persons per vehicle. The total number of students driving to classes at the proposed Classroom Building during the peak hours is approximately 221 students.

Based on the number of students, approximately 28 faculty members are estimated during the peak hours, and based on the number of offices/cubicles, 26 faculty/staff members are estimated. The UCI MCTM includes factors that estimate approximately 85 percent of faculty/staff members are commuters with vehicle occupancy of 1.1 persons per vehicle.

The trips generated by the proposed project are summarized in Table 1. As this table shows, the project would generate approximately 263 AM and PM peak hour trips and approximately 243 mid-day peak hour trips. The majority of these trips would be concentrated on-campus in the

Reference: Classroom Building Project Traffic Evaluation

vicinity of the proposed Classroom Building. This is a conservatively high estimate based on assumptions about the amount of commuter students and faculty/staff, vehicle occupancy, and preference for parking locations. Students and faculty/staff may park in other lots on-campus depending on the location of other classes during the day. Since there is no increase in the amount of students or faculty/staff on-campus as a result of the proposed Classroom Building, impacts of the off-campus trips on the arterial streets surrounding the UCI campus are accounted for in the LRDP traffic analysis.

Table 1 Trip Generation Summary

		AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour		
Land Use	**Amount**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed Project										
Classroom Building	1,260 Seat									
Students		202	19	221	99	122	221	46	175	221
Faculty		20	2	22	10	12	22	5	17	22
Office	26 Office	18	2	20	Nom.	Nom.	Nom.	4	16	20
Vehicle Total		**240**	**23**	**263**	**109**	**134**	**243**	**55**	**208**	**263**

The nearest parking lot to the proposed Classroom Building is Lot 7, which provides reserved parking for UCI faculty and staff. A total of 242 spaces are provided in Lot 7 for faculty/staff vehicles (AR Permit), with 231 standard spaces, 7 handicap spaces, and 4 motorcycle spaces. There are an additional 11 spaces for campus services vehicles. Counts of vehicles in Parking Lot 7 were conducted throughout the day on March 10, 2016 to determine the existing level of parking demand in Lot 7. The parking lot counts reveal that the parking lot was approximately 90 percent full during the peak demand (1:00 PM) when 222 regular vehicles (i.e., non-campus services vehicles) were present. Therefore, approximately 20 spaces are available in Lot 7 during the peak demand. Overflow parking for faculty/staff was assumed in MPS.

The nearest on-campus intersection to the parking for the proposed Classroom Building is Mesa Road and West Peltason Drive. This on-campus intersection was evaluated for possible traffic impacts. Peak hour count data was collected at the intersection of Mesa Road and West Peltason Drive on a typical weekday in March 2016 while winter session classes were underway. Mesa Road at West Peltason Drive is a four-legged signalized intersection. The existing intersection capacity utilization (ICU) value was calculated, and the intersection is currently operating at level of service (LOS) A during the AM, mid-day, and PM peak hour (actual ICU calculation sheets are attached). The intersection currently experiences very light bicycle traffic (i.e., fewer than five bikes in all directions during the AM, mid-day, and PM peak hour) and a moderate level of pedestrian activity (50 to 100 pedestrians across West Peltason Drive) during the peak hours.

Reference: Classroom Building Project Traffic Evaluation

The amount of vehicular traffic attracted by the proposed Classroom Building would result in a maximum of 243 new vehicles parking in the MPS. The number of new vehicles parking in MPS could be lower since some students and faculty/staff may park in other parking lots on campus. Pedestrians from MPS would cross West Peltason Drive at the Mesa Road intersection. In addition, students from Mesa Court residences might attend classes at the new Classroom Building; however, the majority of these pedestrians currently cross West Peltason Drive at the Mesa Road intersection. The proposed Classroom Building could increase the number of pedestrians crossing West Peltason Drive by approximately 380 to 450 pedestrians during the peak hours.

The project is expected to increase the amount of vehicles and pedestrians at the intersection of Mesa Road and West Peltason Drive during the AM, mid-day, and PM peak hour. This traffic was added to the existing volumes, and the resulting existing-plus-project ICU calculated. The ICU calculations include a factor to account for pedestrians crossing the street at the intersection. The amount of peak hour traffic generated by the proposed project would have no significant impact on the on-campus intersection, which would operate at LOS A or B. The LOS calculations for the intersection are attached.

Assumptions were made which resulted in conservatively high estimates of the amount of vehicle traffic attracted to the parking lots near the proposed Classroom Building. Even with the conservative assumptions made regarding vehicle traffic, the intersection of Mesa Road and West Peltason Drive would operate at LOS A or B during the peak hours. The Classroom Building project would have no significant impact on the off-campus circulation system or on the on-campus intersections.

If you have any questions, please call.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Cathy Lawrence, PE
Transportation Engineer
Phone: (949) 923-6064
Cathy.Lawrence@stantec.com

Attachment: Count Data
Summary of Trip Generation Assumptions
ICU Calculations

c. Daryl Zerfass, Stantec Consulting Services Inc.

ATTACHMENTS

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: IRVINE
N-S- Direction: MESA ROAD
E-W Direction: WEST PELTASON DRIVE

File Name : H1603002
Site Code : 00005701
Start Date : 3/10/2016
Page No : 1

Groups Printed- Turning Movements

	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound						
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00	7	4	5	0	3	13	1	2	1	0	3	4	4	19	4	1	7	64	71
07:15	18	4	8	0	5	25	4	6	0	2	2	6	3	20	6	5	17	97	114
07:30	23	7	9	4	6	35	5	6	3	2	2	2	5	33	9	6	18	139	157
07:45	24	14	15	8	9	42	12	9	3	3	5	3	7	36	13	10	30	183	213
Total	72	29	37	12	23	115	22	23	7	7	12	15	19	108	32	22	72	483	555
08:00	20	6	15	5	8	32	10	10	3	1	2	5	4	32	6	6	26	139	165
08:15	18	9	3	2	4	29	2	3	4	4	5	6	3	37	11	6	17	129	146
08:30	26	9	6	3	7	34	5	4	2	2	5	7	11	33	9	6	20	149	169
08:45	31	12	10	11	11	48	7	6	0	2	2	1	5	36	8	7	25	172	197
Total	95	36	34	21	30	143	24	23	9	9	14	19	23	138	34	25	88	589	677
11:00	22	11	17	2	9	41	16	4	4	6	7	4	10	58	20	13	23	221	244
11:15	10	12	16	2	15	36	6	5	10	3	10	2	1	33	8	8	17	160	177
11:30	16	8	13	2	23	25	4	3	3	7	4	4	7	59	15	6	15	184	199
11:45	12	8	13	8	7	44	10	16	7	2	7	1	11	58	18	9	34	197	231
Total	60	39	59	14	54	146	36	28	24	18	28	11	29	208	61	36	89	762	851
12:00	32	6	28	10	20	40	9	15	13	8	11	3	4	89	20	10	38	280	318
12:15	24	5	17	5	14	53	11	18	14	9	3	2	9	69	14	21	46	242	288
12:30	28	7	26	5	13	64	3	15	11	10	4	2	3	63	13	10	32	245	277
12:45	30	12	11	2	18	71	10	6	10	7	5	3	7	42	13	10	21	236	257
Total	114	30	82	22	65	228	33	54	48	34	23	10	23	263	60	51	137	1003	1140
16:00	24	1	12	32	20	45	3	14	10	6	6	3	6	59	21	10	59	213	272
16:15	26	4	22	11	12	40	6	7	6	13	6	5	4	49	23	14	37	211	248
16:30	18	4	28	5	21	50	8	4	9	6	7	1	6	69	26	5	15	252	267
16:45	36	13	29	8	16	67	24	25	23	9	10	3	5	91	28	28	64	351	415
Total	104	22	91	56	69	202	41	50	48	34	29	12	21	268	98	57	175	1027	1202
17:00	18	6	27	10	18	71	15	8	10	19	14	5	4	129	38	8	31	369	400
17:15	16	4	14	0	13	58	4	6	7	5	8	1	1	121	27	3	10	278	288
17:30	18	5	9	2	13	47	4	7	9	9	8	3	5	108	19	3	15	254	269
17:45	18	6	14	0	19	45	5	16	16	13	13	5	3	87	18	4	25	257	282
Total	70	21	64	12	63	221	28	37	42	46	43	14	13	445	102	18	81	1158	1239
Grand Total	515	177	367	137	304	1055	184	215	178	148	149	81	128	1430	387	209	642	5022	5664
Apprch %	48.6	16.7	34.7		19.7	68.4	11.9		37.5	31.2	31.4		6.6	73.5	19.9				
Total %	10.3	3.5	7.3		6.1	21	3.7		3.5	2.9	3		2.5	28.5	7.7		11.3	88.7	

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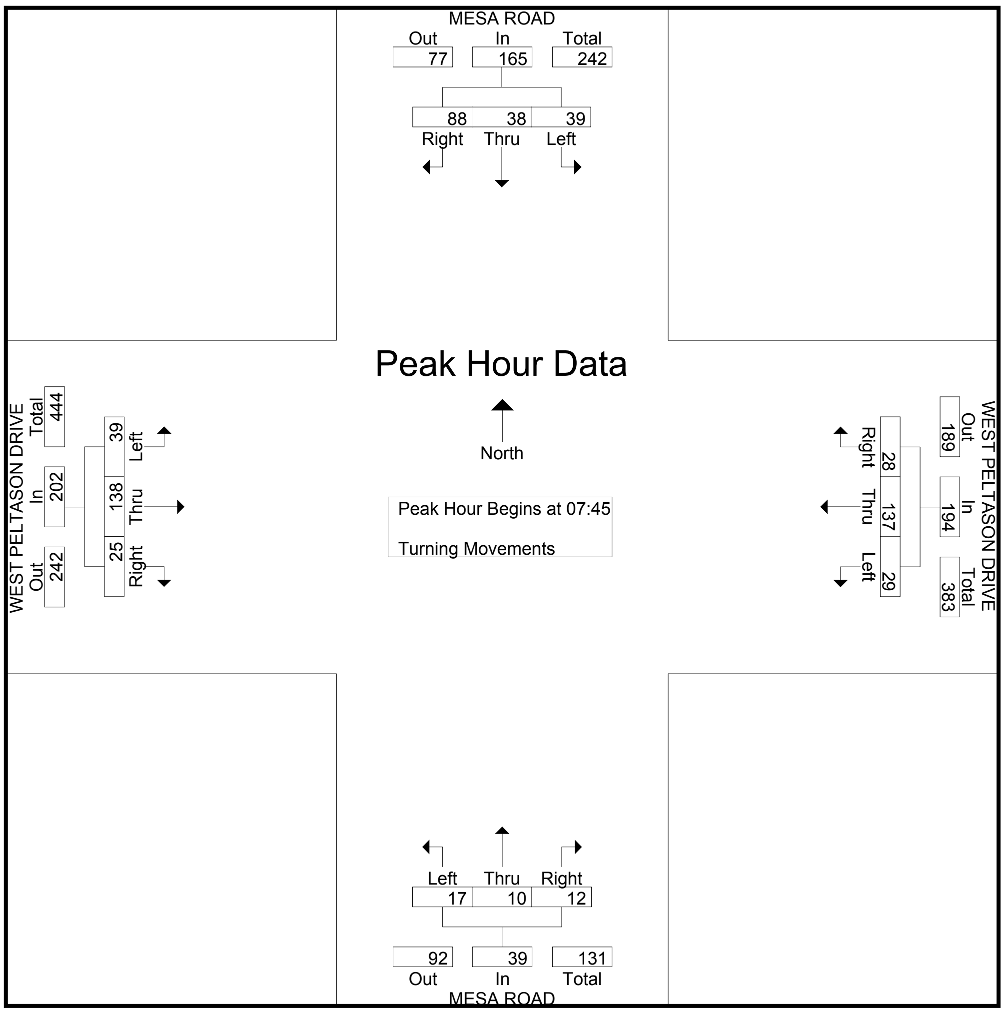
	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	24	**14**	**15**	**53**	**9**	**42**	**12**	**63**	3	3	**5**	11	**7**	**36**	**13**	**56**	**183**
08:00	20	6	15	41	8	32	10	50	3	1	2	6	4	32	6	42	139
08:15	18	9	3	30	4	29	2	35	**4**	**4**	**5**	**13**	3	**37**	11	51	129
08:30	**26**	9	6	41	7	34	5	46	2	2	5	9	**11**	33	9	53	149
Total Volume	88	38	39	165	28	137	29	194	12	10	17	39	25	138	39	202	600
% App. Total	53.3	23	23.6		14.4	70.6	14.9		30.8	25.6	43.6		12.4	68.3	19.3		
PHF	.846	.679	.650	.778	.778	.815	.604	.770	.750	.625	.850	.750	.568	.932	.750	.902	.820



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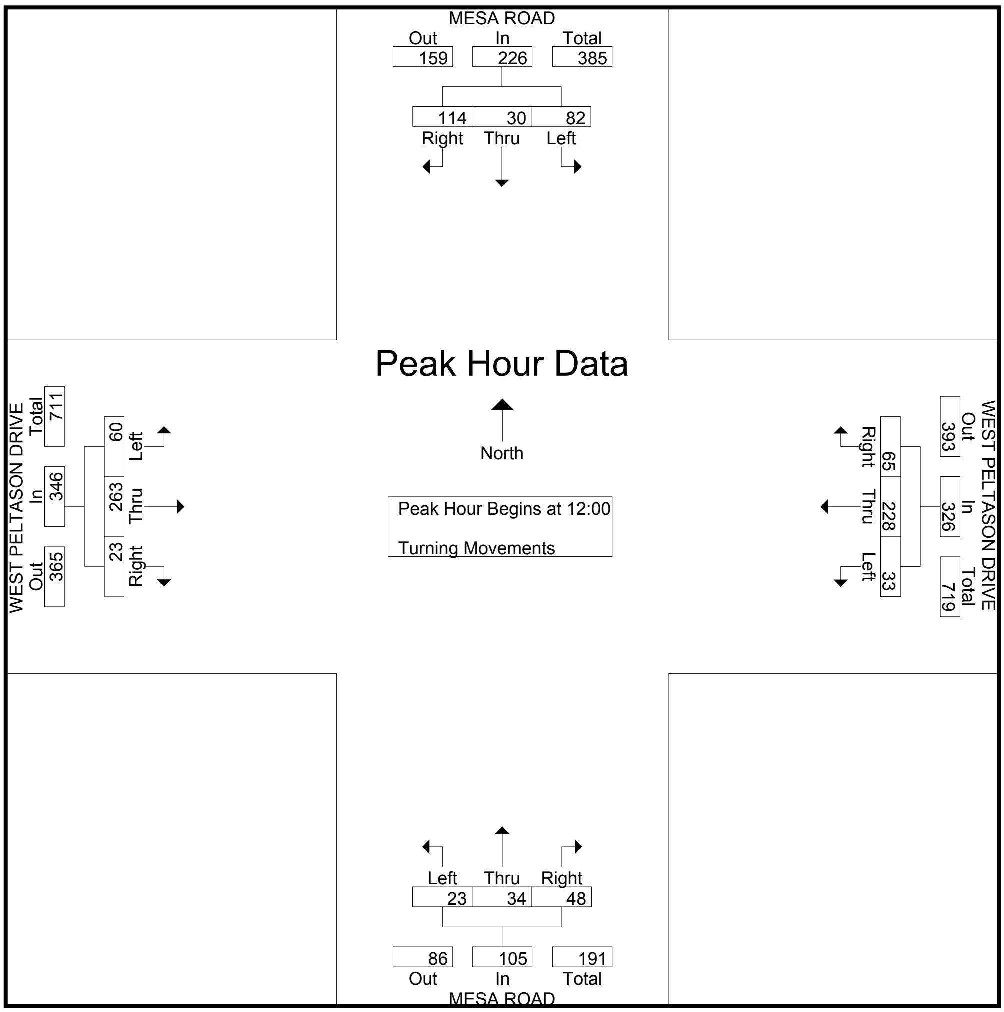
	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 to 12:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00																	
12:00	**32**	6	**28**	**66**	**20**	40	9	69	13	8	**11**	**32**	4	**89**	**20**	**113**	**280**
12:15	24	5	17	46	14	53	**11**	78	**14**	9	3	26	**9**	69	14	92	242
12:30	28	7	26	61	13	64	3	80	11	**10**	**4**	**25**	**3**	**63**	**13**	**79**	**245**
12:45	**30**	**12**	**11**	**53**	**18**	**71**		**99**									
Total Volume	114	30	82	226	65	228	33	326	48	34	23	105	23	263	60	346	1003
% App. Total	50.4	13.3	36.3		19.9	69.9	10.1		45.7	32.4	21.9		6.6	76	17.3		
PHF	.891	.625	.732	.856	.813	.803	.750	.823	.857	.850	.523	.820	.639	.739	.750	.765	.896



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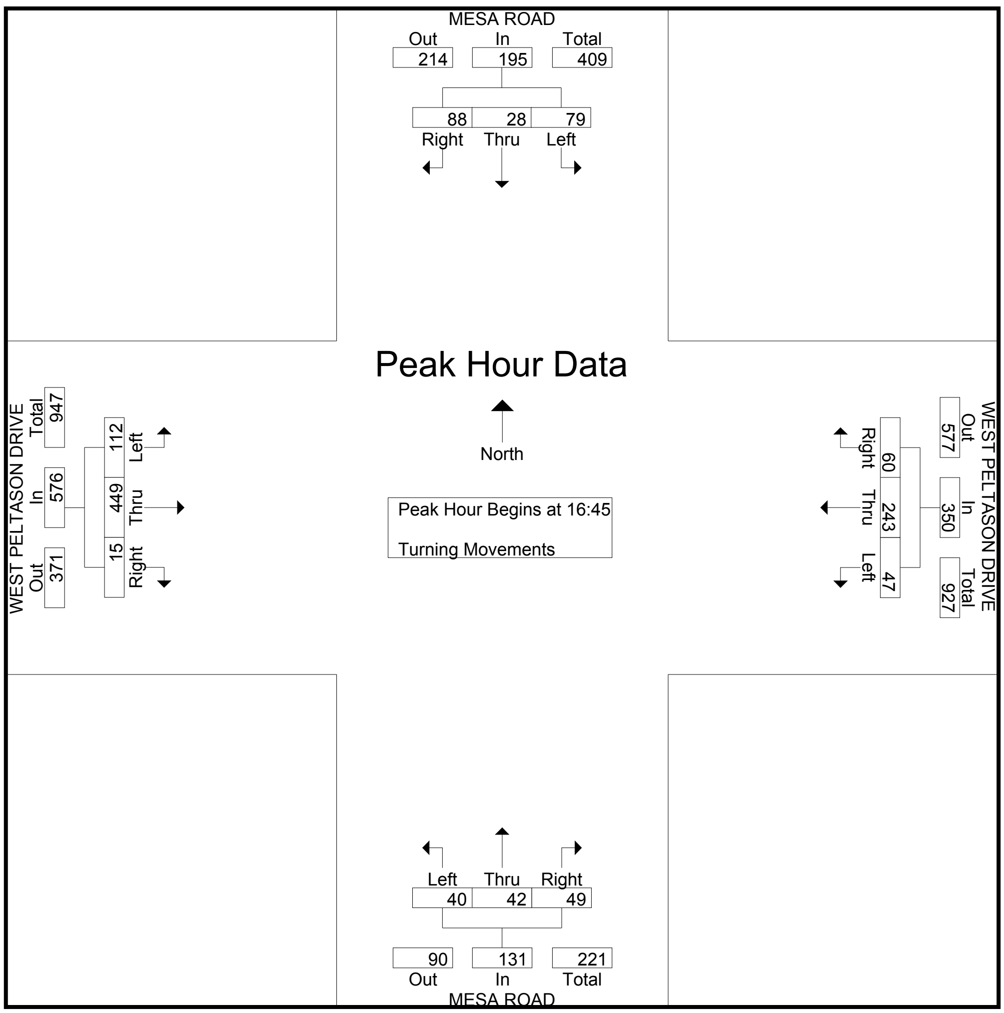
	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	**36**	**13**	**29**	**78**	16	67	**24**	**107**	**23**	9	10	42	**5**	91	28	124	351
17:00	18	6	27	51	**18**	**71**	15	104	10	**19**	**14**	**43**	4	**129**	**38**	**171**	**369**
17:15	16	4	14	34	13	58	4	75	7	5	8	20	1	121	27	149	278
17:30	18	5	9	32	13	47	4	64	9	9	8	26	5	108	19	132	254
Total Volume	88	28	79	195	60	243	47	350	49	42	40	131	15	449	112	576	1252
% App. Total	45.1	14.4	40.5		17.1	69.4	13.4		37.4	32.1	30.5		2.6	78	19.4		
PHF	.611	.538	.681	.625	.833	.856	.490	.818	.533	.553	.714	.762	.750	.870	.737	.842	.848



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City: IRVINE
N-S- Direction: MESA ROAD
E-W Direction: WEST PELTASON DRIVE

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Groups Printed- Bikes

	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound						
Start Time	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:45	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3	0	3
08:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2
08:45	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	0	3
Total	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2	5	0	5
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
12:15	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	0	3
12:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2	5	0	5
16:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
16:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Grand Total	0	0	0	6	0	0	0	5	0	0	0	0	0	0	0	5	16	0	16
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

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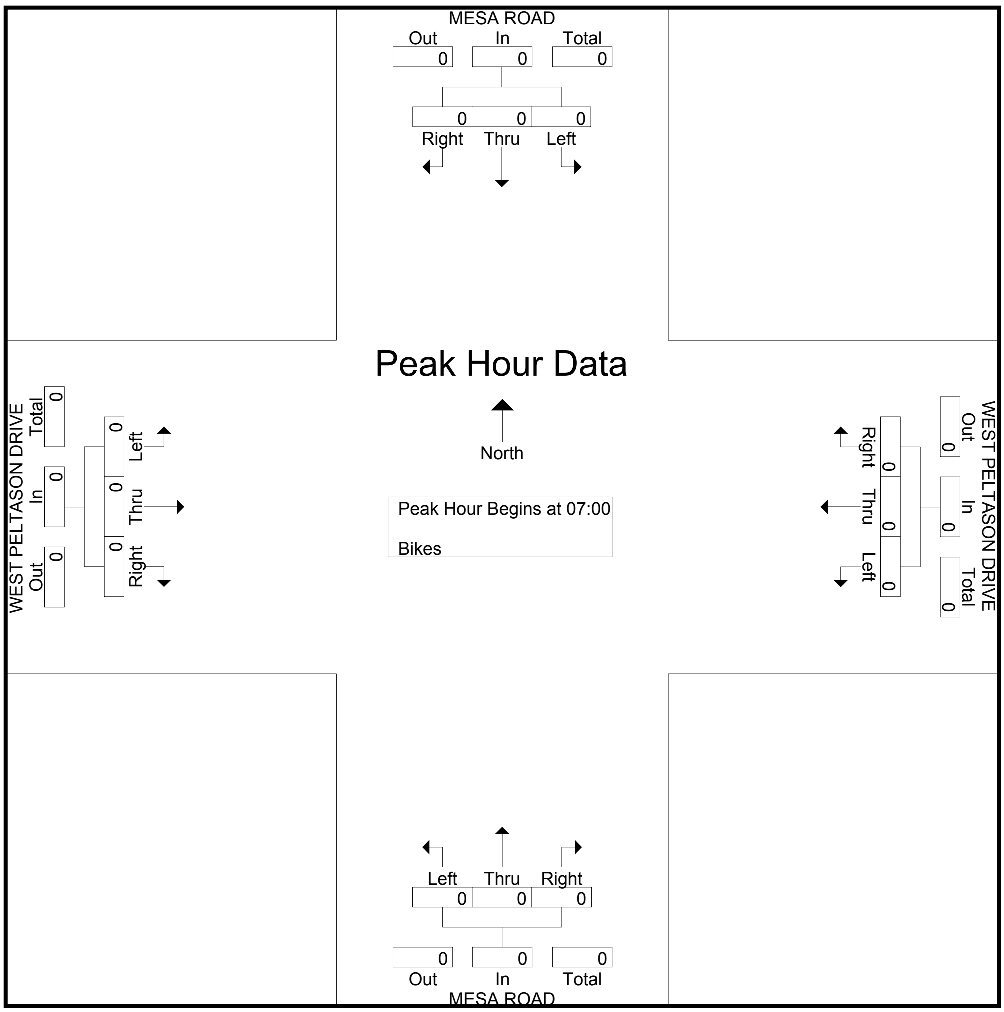
	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



File Name : H1603002
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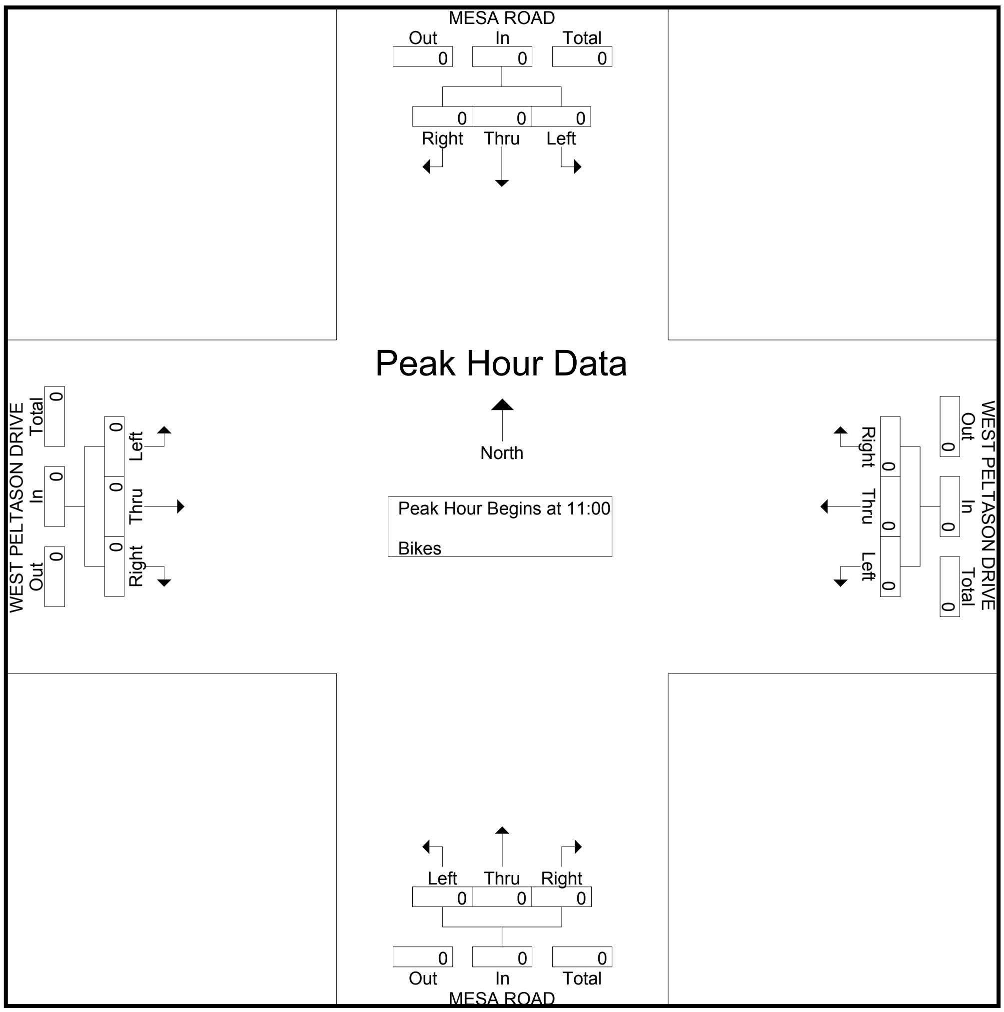
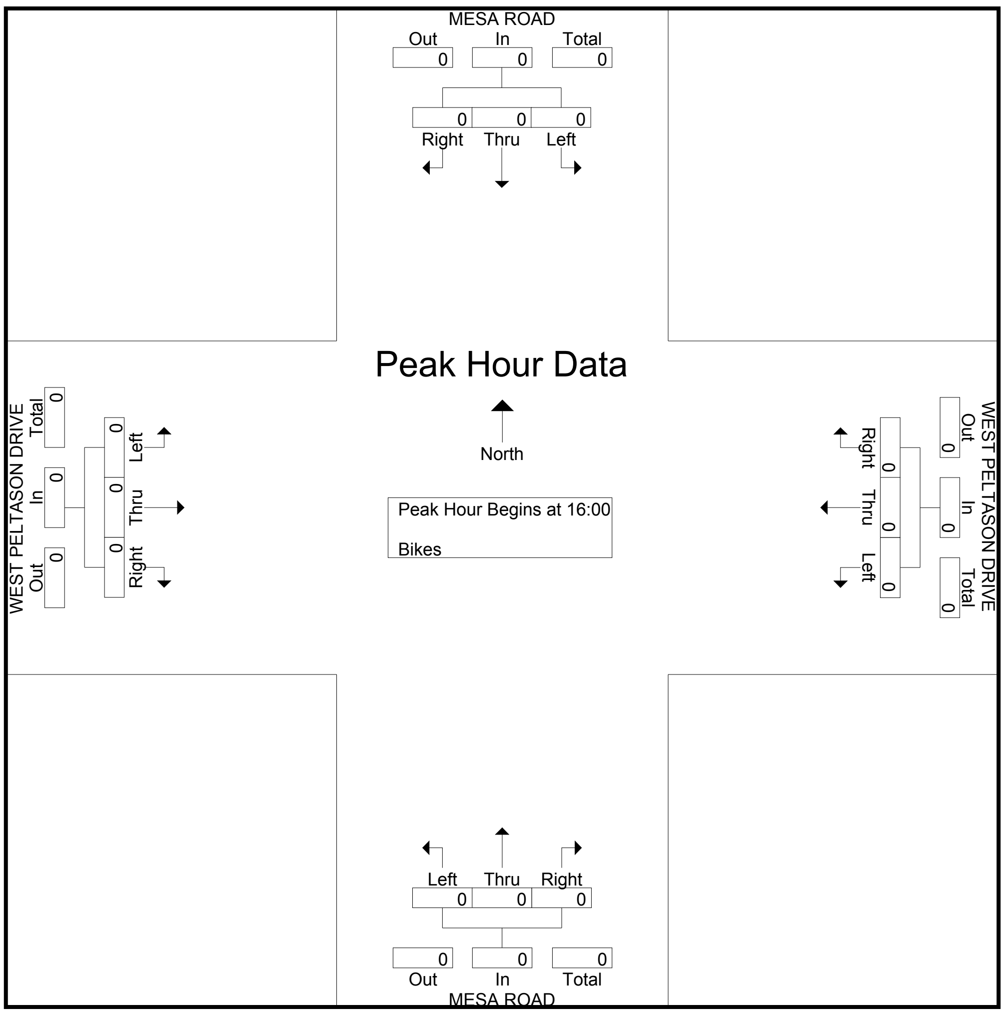
	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 to 12:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00																	
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



	MESA ROAD Southbound				WEST PELTASON DRIVE Westbound				MESA ROAD Northbound				WEST PELTASON DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
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Parking Lot Count

Location: UCI Parking Lot 7
Date: Thursday, March 10, 2016

Time of Day	Occupied Spaces				Total	
	Regular	Service	H/C	Motorcycle		
6:30 AM	2	6	0	0	8	3%
9:00 AM	91	7	5	0	103	41%
10:30 AM	181	6	7	1	195	77%
1:00 PM	214	6	7	1	228	90%
3:30 PM	182	7	7	2	198	78%
6:00 PM	91	7	2	3	103	41%
Spaces Available	**Regular**	**Service**	**H/C**	**Motorcycle**	**Total**	
	231	11	7	4	253	
Max Occupied	**214**	**6**	**7**	**1**	**228**	**90%**

Stantec

UCI Classroom Building Trip Generation Assumptions

Project description: 75,052 sf (1,260 classroom/lecture hall seats, 26 offices/cubicles)

UCI MCTM has no trip rates based on Classrooms size or seats, no trip rates based on Office space. All trip rate/generation info provided is ADT only.

Therefore, trips for this project are based on assumptions about the occupied classroom seats and number of offices/cubicles.

1. Historic average for large lecture hall utilization is 76%, medium lecture hall (250 seeat) utilization is 71%, and small classroom utilization is 67%. Overall classroom utilization is 70%. Assume 80% of the seats filled on any given day. Therefore, 56% (0.70 x 0.80 = 0.56) of the 1,260 seats occupied.
2. Assume 56% of lecture/classroom seats are occupied during AM, mid-day, PM peak hour
3. UCI MCTM assumes .50 commuter student factor (source: Appendix Table A-1 from LRDP 2007 Update TS)
4. Assume 1.6 student/veh occupancy (source: AQMD ridership survey)
5. 1260 seats x .56 = 706 students x .50 = 353 commuter students / 1.6 = **221 commuter student veh**
6. Assume approximately 25 students/classroom, 1 faculty member per classroom
7. UCI MCTM assumes .85 commuter faculty factor (source: App Table A-1)
8. UCI MCTM assumes 1.1 faculty/staff/veh occupancy (source: App Table A-1)
9. 706/25 = 28 faculty x .85 = 24 commuter faculty / 1.1 = **22 commuter faculty veh**
10. Assume 26 offices/cubicles, 26 faculty/staff in addition to classroom faculty
11. UCI MCTM assumes .85 commuter faculty factor (source: App Table A-1)
12. UCI MCTM assumes 1.1 faculty/staff/veh occupancy (source: App Table A-1)
13. 26 faculty/staff x .85 = 22 commuter faculty/staff / 1.1 = **20 faculty/staff veh**

Peak hour IB/OB distribution from Mesa Court Expansion Project peakhourtrips.xls spreadsheet "External Academic" trips:

1. AM peak hour % of ADT = 8.75 → inbound = 8.00 / 8.75 = 91.4%, outbound = 0.75 / 8.75 = 8.6%
2. PM peak hour % of ADT = 9.50 → inbound = 2.00 / 9.50 = 21.1%, outbound = 7.50 / 9.50 = 78.9%
3. Mid-day distribution from Mesa/W Peltason intersection count directed toward Parking Lot 7 (project site) → 86 veh IB (45%), 105 veh OB (55%)

Trip Generation:

1. AM peak hour
   a. Students (221 veh) & Faculty (22 veh): 243 x .914 = 222 IB, 243 x .086 = 21 OB
   b. Office (20 veh): 20 x .914 = 18 IB, 20 x .086 = 2 OB
   c. **Total = 240 IB, 23 OB**

2. Mid-day peak hour
    a. Students (221 veh) & Faculty (22 veh): 243 x .45 = 109 IB, 243 x .55 = 134 OB
    b. Office: nominal (office faculty/staff stay on campus all day)
    c. Total = 109 IB, 134 OB
3. PM peak hour
    a. Students (221 veh) & Faculty (22 veh): 243 x .211 = 51 IB, 243 x .789 = 192 OB
    b. Office (20 veh): 20 x .211 = 4 IB, 20 x .789 = 16 OB
    c. Total = 55 IB, 208 OB

Table 1 Trip Generation

	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour		
	In	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Classrooms									
Students	202	19	221	99	122	221	46	175	221
Faculty	20	2	22	10	12	22	5	17	22
Offices	18	2	20	Nom.	Nom.	Nom.	4	16	20
Total	**240**	**23**	**263**	**109**	**134**	**243**	**55**	**208**	**263**

Faculty/staff-only parking in Lot 7, student and overflow faculty/staff parking in Mesa Parking Structure (MPS) on Mesa Rd north of W. Peltason Dr. **Parking Lot 7 = 242 spaces** for regular vehicles (+ 11 spaces for campus service trucks).

1. AM peak hour, 103 vehicles (43%) currently parked, 139 empty spaces
2. Mid-day peak hour, 222 vehicles (92%) currently parked, 20 empty spaces
3. PM peak hour, 198 vehicles (82%) currently parked, 44 empty spaces
4. During the AM peak hour, faculty/staff vehicles park in Lot 7 (42 veh), students park in MPS (221 veh)
5. During the Mid-day peak hour, 20 office faculty/staff vehicles park in Lot 7, 22 faculty/staff vehicles park in MPS, students park in MPS (221 veh)
6. During PM peak hour, faculty/staff vehicles park in Lot 7 (42 veh), students park in MPS (221 veh)

Trip Distribution (approx. from UCI MCTM)

1. 26% from west on University Dr
2. 31% from east on University Dr
3. 18% from west on Bison Ave
4. 25% from east on Campus Dr

Pedestrian Volumes during AM, Mid-Day, PM peak hours

Vehicles parking in MPS: 353 commuter students + 24 commuter faculty

On-campus students from Mesa Court (approx. 22.5% of total on-campus housing): 315 on-campus stu x .225 = 71 stu

Total peds added to Mesa/W. Peltason intersection: 353 + 24 + 71 = **448 peds/peak hour**

1. Mesa & W Peltason

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	17	.01*	40	.02
NBT	1	1700	10	.01	42	.05*
NBR	0	0	12		49	
SBL	1	1700	39	.02	79	.05*
SBT	1	1700	38	.07*	28	.07
SBR	0	0	88		88	
EBL	1	1700	39	.02*	112	.07
EBT	1	1700	138	.10	449	.27*
EBR	0	0	25		15	
WBL	1	1700	29	.02	47	.03*
WBT	1	1700	137	.10*	243	.18
WBR	0	0	28		60	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.25**		**.45**

Existing

	LANES	CAPACITY	MID-DAY VOL	MID-DAY V/C	VOL	V/C
NBL	1	1700	23	.01	0	.00
NBT	1	1700	34	.05*	0	.00
NBR	0	0	48		0	
SBL	1	1700	82	.05*	0	.00
SBT	1	1700	30	.08	0	.00*
SBR	0	0	114		0	
EBL	1	1700	60	.04*	0	.00
EBT	1	1700	263	.17	0	.00
EBR	0	0	23		0	
WBL	1	1700	33	.02	0	.00
WBT	1	1700	228	.17*	0	.00*
WBR	0	0	65		0	
Clearance Interval				.05*		.00*
TOTAL CAPACITY UTILIZATION				**.36**		**.00**

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	17	.01*	43	.03
NBT	1	1700	11	.01	51	.06*
NBR	0	0	13		53	
SBL	1	1700	44	.03	127	.07*
SBT	1	1700	48	.08*	30	.09
SBR	0	0	92		123	
EBL	1	1700	79	.05*	121	.07
EBT	1	1700	138	.10	449	.27*
EBR	0	0	28		17	
WBL	1	1700	34	.02	48	.03*
WBT	1	1700	137	.13*	243	.19
WBR	0	0	84		73	
Pedestrians				.19*		.14*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.62**

Existing + Project

	LANES	CAPACITY	MID-DAY VOL	MID-DAY V/C	VOL	V/C
NBL	1	1700	23	.01	0	.00
NBT	1	1700	34	.05*	0	.00
NBR	0	0	48		0	
SBL	1	1700	116	.07*	0	.00
SBT	1	1700	30	.10	0	.00*
SBR	0	0	138		0	
EBL	1	1700	80	.05*	0	.00
EBT	1	1700	263	.17	0	.00
EBR	0	0	23		0	
WBL	1	1700	33	.02	0	.00
WBT	1	1700	228	.19*	0	.00*
WBR	0	0	92		0	
Pedestrians				.15*		
Clearance Interval				.05*		.00*
TOTAL CAPACITY UTILIZATION				**.56**		**.00**

APPENDIX D

CEQA Notices

UNIVERSITY OF CALIFORNIA, IRVINE

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

Environmental Planning and Sustainability

4199 Campus Drive, Suite 380
Irvine, CA 92697-2325
(949) 824-6316

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Project Title: Classroom Building
Project Location: University of California, Irvine
Lead Agency: University of California, Irvine
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 Classroom Building project (proposed project) was prepared by the University of California, Irvine (University), and it was determined that a Mitigated Negative Declaration is the appropriate level of analysis.

The proposed project would construct a three-story, 71,818-gross-square-foot (GSF) structure on a 1.2-acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active learning lecture halls, flat-floor active learning classrooms, computer lab, and general assignment classrooms. An existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. A new 40-foot-wide pedestrian radial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned.

The project has been analyzed in the Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) and determined that, with the incorporation of mitigation, it will not have a significant effect on the environment. The document is available at: http://www.eps.uci.edu/EnvironmentalPlanning/index.html. Hard copies of the Draft IS/MND and referenced documents are available for review during business hours at the University of California, Irvine's Office of Environmental Planning and Sustainability. Comments will be received May 16, 2016 through June 15, 2016.

E-mail comments to rgdemerj@uci.edu or mail to:

Richard Demerjian, Director
Office of Environmental Planning and Sustainability
University of California, Irvine
380 University Tower, Irvine, CA 92697

The Draft IS/MND, along with comments received during the public review period, will be considered by the Chancellor in conjunction with project approval. If adopted by the University, the Draft IS/MND will be finalized.

Richard Demerjian, Director

Print Form

Appendix C

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: Classroom Building

Lead Agency: University of California, Irvine — Contact Person: Richard Demerjian, Director
Mailing Address: 380 University Tower, Irvine, CA 92697 — Phone: (949) 824-7058
City: Irvine — Zip: 92697 — County: Orange

Project Location: County: Orange — City/Nearest Community: Irvine
Cross Streets: West Peltason Drive and Mesa Road — Zip Code: 92697
Longitude/Latitude (degrees, minutes and seconds): 33 ° 38 ′ 49.6 ″ N / -117 ° 50 ′ 40.8 ″ W Total Acres: 1.2
Assessor's Parcel No.: ____ Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: SR-73 and I-405 — Waterways: ____
Airports: ____ Railways: ____ Schools: University HS,Turtle Ro

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: Classroom Building
☐ 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:

UC Irvine is not subject to local zoning requirements. Permitted uses in the 2007 LRDP allow educational facilities.

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

The proposed project would construct a three-story, 71,818-gross-square-foot (GSF) structure on a 1.2-acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active learning lecture halls, flat-floor active learning classrooms, computer lab, and general assignment classrooms. An existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. A new 40-foot-wide pedestrian radial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned.

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

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

Starting Date May 13, 2016 Ending Date June 15, 2016

Lead Agency (Complete if applicable):

Consulting Firm:
Address:
City/State/Zip:
Contact:
Phone:

Applicant: University of California, Irvine
Address: 380 University Tower
City/State/Zip: Irvine, CA 92697-2325
Phone: (949) 824-7058

Signature of Lead Agency Representative: **Date:** 5/12/16

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

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:

May 17, 2016

"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: May 17, 2016

Signature

The Orange County Register
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-2209

PROOF OF PUBLICATION

NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION

CLASSROOM BUILDING

UNIVERSITY OF CALIFORNIA, IRVINE

In accordance with California Environmental Quality Act (CEQA) Guidelines and University of California Procedures for Implementation of CEQA, an Initial Study for the Classroom Building project (proposed project) was prepared by the University of California, Irvine (University), and it was determined that a Mitigated Negative Declaration is the appropriate level of analysis.

The proposed project would construct a three-story, 71,818-gross-square-foot (GSF) struc-
ture on a 1.2-acre site on the University campus. The structure would include office space,
and 1,260 classroom seats, including active learning lecture halls, flat-floor active learning
classrooms, computer lab, and general assignment classrooms. An existing on-site modu-
lar would be removed and a portion of Founders' Court would be reconfigured to allow
space for the proposed project. A new 40-foot-wide pedestrian radial mall and bicycle path
would be constructed and two adjacent service drives would be removed and realigned.

The project has been analyzed in the Draft Initial Study/Mitigated Negative Declaration
(Draft IS/MND) and determined that, with the incorporation of mitigation, it will not have a
significant effect on the environment. The document is available at
http://www.eps.uci.edu/EnvironmentalPlanning/index.html. The 30-day public review peri-
od will begin May 16, 2016, through June 15, 2016. Comments may be e-mailed to
rgdemerj@uci.edu or written comments mailed to Richard Demerjian, Director, University
of California, Irvine, Office of Environmental Planning and Sustainability, 380 University
Tower, Irvine, CA 92697. If you have any questions regarding the project, please call (949)
824-7058.

Published: Orange County Register May 17, 2016 R-896 10163898

Print Form

Notice of Determination

Appendix D

To:

☐ Office of Planning and Research

U.S. Mail:	*Street Address:*
P.O. Box 3044	1400 Tenth St., Rm 113
Sacramento, CA 95812-3044	Sacramento, CA 95814

☐ County Clerk
County of: ______________________
Address: ______________________
____

From:
Public Agency: University of California, Irvine
Address: 4199 Campus Drive, Suite 380
Irvine, CA 92627
Contact: Richard Demerjian
Phone: (949) 824-7058

Lead Agency (if different from above):
____
Address: ______________________
____
Contact: ______________________
Phone: ______________________

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2016051050

Project Title: Classroom Building

Project Applicant: University of California, Irvine

Project Location (include county): Irvine, Orange County

Project Description:

The proposed project would construct a three-story, 72,318-gross-square-foot (GSF) structure on a 1.2-acre site that would include office space and 1,260 classroom seats. An existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. A new 40-foot-wide pedestrian radial mall and bicycle path would be constructed and two adjacent service drives would be realigned.

This is to advise that the University of California, Irvine has approved the above
(☐ Lead Agency or ☐ Responsible Agency)

described project on ______________ and has made the following determinations regarding the above
(date)
described project.

1. The project [☐ will ☐ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☐ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☐ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☐ was not] adopted for this project.
6. Findings [☐ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
4199 Campus Drive, Suite 380, Irvine, CA, 92627

Signature (Public Agency): ______________________ Title: ______________________

Date: ______________________ Date Received for filing at OPR: ______________________

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

APPENDIX E

Response to Comments

CLASSROOM BUILDING IS/MND

MAILING LIST

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

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

Orange County Transportation Authority
550 South Main Street
Orange, CA 92868

California Deptartment of Fish & Wildlife
4949 Viewridge Avenue
San Diego, CA 92133

U.S. Fish & Wildlife Service
Division of Ecological Services
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

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

U.S. Army Corps of Engineers
Los Angeles District
911 Wilshire Boulevard
Los Angeles, CA 90017

CA Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630

South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4182

Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

California Department of Transportation
District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-1699

Orange County Fire Authority
P.O. Box 57115
Irvine, CA 92619-7115

Irvine Ranch Water District
15600 Sand Canyon Ave.
Irvine, CA 92618

Public Utilities Commission
320 W. 4th Street, Suite 500
Los Angeles, CA 90013

Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618-3304

Classroom Building

Draft Initial Study
Public Review/Response to Comments

Public Review

The Draft Initial Study/Mitigated Negative Declaration (IS/MND), along with a Notice of Completion (NOC) and Notice of Intent to Adopt a Mitigated Negative Declaration (NOI), were circulated for public review and comment from May 16, 2015 through June 15, 2016. Copies of the document were submitted to the State Clearinghouse; local agencies; UCI faculty, staff, and other members of the campus community; and additional interested groups and persons. On May 16, 2016, a notice regarding the availability of the Draft IS/MND was published in the Orange County Register. Copies of the distribution list and notices are provided in this appendix.

Comments and Responses

Written comments were submitted by the agencies listed below. The letters and the responses to comments are presented on the pages following the Draft IS/MND distribution list.

Commenting Agency	Date
Department of Toxic Substances Control	June 10, 2016
Irvine Ranch Water District	June 13, 2016
Orange County Public Works	June 13, 2016
California Department of Transportation, District 12	June 14, 2016
City of Irvine	June 15, 2016
State Clearinghouse	June 15, 2016

Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

June 10, 2016

Mr. Richard Demerjian, Director (rgdemerj@uci.edu)
University of California, Irvine
380 University Tower
Irvine, California 92697

DTSC REVIEW OF THE DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE UNIVERSITY OF CALIFORNIA, IRVINE – CLASSROOM BUILDING (SCH# 2016051050)

Dear Mr. Demerjian:

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the University of California, Irvine – Classroom Building (project), dated May 2016 and received by DTSC on May 19, 2016. The proposed project would construct a three-story structure on a 1.2-acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active leaning lecture halls, flat-floor active learning classrooms, computer lab, and general assignment classrooms. An existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. A new 40-foot-wide pedestrian redial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned. Based on the review of the Draft IS/MND, DTSC would like to provide the following comments:

> If the existing building within the project area was constructed prior to 1978, lead based paint and organochlorine pesticides (from termiticide applications) may be potential environmental concerns. DTSC recommends that these environmental concerns be investigated and possibly mitigated, in accordance with DTSC's *"Interim Guidance, Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers,"* dated June 9, 2006.

DTSC is also administering the Revolving Loan Fund (RLF) Program which provides revolving loans to investigate and clean up hazardous materials at properties where redevelopment is likely to have a beneficial impact to a community. These loans are available to developers, businesses, schools, and local governments.

For additional information on DTSC's Schools process or RLF Program, please visit DTSC's web site at www.dtsc.ca.gov. If you would like to discuss this matter further, please contact me at (714) 484-5320 or at rana.georges@dtsc.ca.gov.

Sincerely,

Rana Georges
Project Manager
Schools Evaluation and Brownfields Cleanup Branch
Brownfields and Environmental Restoration Program

cc: State Clearinghouse (via e-mail)
Office of Planning and Research
state.clearinghouse@opr.ca.gov

Mr. Michael O'Neill (via e-mail)
Department of Education
moneill@cde.ca.gov

Bedelia Honeycutt (via e-mail)
Department of Education
bhoneycu@cde.ca.gov

David Kereazis (via e-mail)
DTSC CEQA Tracking Center – Sacramento, CA
dave.kereazis@dtsc.ca.gov

B&ERP Reading File – Cypress

CEQA Reading File – Cypress

Response to Department of Toxic Substances Control

Comment 1: The on-site modular was constructed in 1966 and UCI performs lead and asbestos surveying in all buildings constructed prior to 1978. As a routine control, prior to any demolition on campus, the Office of Environmental Health and Safety (EH&S) and the campus project manager coordinate assessment of potentially contaminated buildings, including the on-site modular demolition as part of this project. Furthermore, the standard UCI construction contract specifies that all contractors who disturb or potentially disturb asbestos or lead must comply with all federal, State, and local regulations regarding hazardous materials.

IRVINE RANCH WATER DISTRICT 15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

June 13, 2016

Richard Demerjiian
Director
Office of Environmental Planning & Sustainability
University of California, Irvine
380 University Tower
Irvine, CA 92697

Re: Classroom Building MND

Dear Mr. Demerjiian:

Irvine Ranch Water District (IRWD) has received and reviewed the Notice of Intent to adopt a Mitigated Negative Declaration (MND) for the Classroom Building Project. IRWD offers the following comment.

IRWD has included the overall demands associated with the University of California, Irvine's (UCI) 2007 Long Range Development Plan (LRDP) in IRWD's water demands and sewer flow projections. As projects in the LRDP are developed, IRWD will require UCI to complete studies analyzing the impact of the proposed development on IRWD-owned facilities (potable, recycled, and sewer systems). These studies will verify if there is a need for any additional off-site improvements to existing systems.

Thank you for the opportunity to review this MND. Please contact either the undersigned at (949) 453-5325 or Jo Ann Corey, Engineering Technician III, at (949) 453-5326 if you have any questions.

Sincerely,

FMSanchez

Fiona M. Sanchez
Director of Water Resources

cc: Eric Akiyoshi, IRWD
Jo Ann Corey, IRWD

Response to the Irvine Ranch Water District

Comment 1: Projects associated with the build-out of the 2007 LRDP, including the Classroom Building project, have been included in the Irvine Ranch Water District's (IRWD) water demand and sewer flow projections. UCI is currently in consultation with IRWD and will continue discussions regarding off-site improvements to existing systems.

4

OC Public Works
Integrity, Accountability, Service, Trust
Shane L. Silsby, Director

COUNTY OF ORANGE CALIFORNIA

June 13, 2016 NCL-16-025

Mr. Richard Demerjian, Director
Office of Environmental Planning and Sustainability
University of California, Irvine
380 University Tower
Irvine, California 92697

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration for the Classroom Building Project

Dear Mr. Demerjian:

The County of Orange has reviewed the Notice of Intent to Adopt a Mitigated Negative Declaration for the Classroom Building Project and offers the following comments:

Flood Programs:

1. Page 4.8-6, Hyd-1A, patagraph1: "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."

   The proposed Classroom Building development is likely to increase the surface water runoff. The City of Irvine (City), as the local jurisdiction, should ensure that the local drainage system is suitable to convey the additional discharge and that the flow would not exceed the capacity if existing or planned storm water drainage system.

2. Page 4.8-6, Hyd-1A, paragraph 2: "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."

   We recommend all hydrologic and hydraulic studies conform to the current guidelines and criteria as specified in the Orange County Hydrology Manual (OCHM), Addendum No. 1 to the OCHM, and the Orange County Flood Control District (OCFCD) Design Manual.

Any drainage related mitigation measures need to be reviewed and evaluated by the City in order to ensure that any flooding problems upstream and downstream of the project site are not transferred elsewhere.

3. Page 4.8-4 item d) states: "To avoid significant flooding impacts on or off site the proposed storm drainage system would be designed in accordance with the drainage criteria set forth in LRDP EIR mitigation measures Hyd-1A and Hyd-1B."

   Mitigation measure Hyd-1B was not included in the Tiered Initial Study, nor was it found in the 2007 LRDP EIR. Please review the statement and correct it accordingly. Further review may be required.

If you have any questions or need clarification please do not hesitate to contact Robert McLean at (714) 647-3951 or Anna Brezezick at (714) 647-3989.

Sincerely,

Laree Alonso, Manager, Planning Division
OC Public Works Service Area/OC Development Services
300 North Flower Street
Santa Ana, California 92702-4048
Laree.alonso@ocpw.ocgov.com

cc: Mehdi Sobhani, Manager, OC Public Works/Flood Programs

Response to the Orange County Public Works

Comment 1: A large portion of the proposed project will be constructed on a previously developed and impervious surface and is not anticipated to significantly increase surface flows. In order to address any surface flows from the proposed project, an additional storm drain that will connect to the campus drainage system is included in the preliminary project design. However, the proposed project is design-build and the surface flow calculations and drainage system design will be completed during the design phase. In the event that the surface flows are higher than the baseline, with implementation of mitigation measure Hyd-1A, features will be included in the final design to reduce surface flows to mimic the preexisting condition as required in the contract for the design-build team.

Comment 2: As discussed above, the project is design-build and is in preliminary design stages. If the surface flow calculations are found to be above the preexisting condition and mitigation requiring alteration to the drainage system is required, the City of Irvine will be notified.

Comment 3: Text referencing mitigation measure Hyd-1B on page 4.8-4 has been deleted.

DEPARTMENT OF TRANSPORTATION
DISTRICT 12
3347 MICHELSON DRIVE, SUITE 100
IRVINE, CA 92612-8894
PHONE (949) 724-2086
FAX (949) 724-2592
TTY 711
www.dot.ca.gov

Serious drought.
Help save water!

June 14, 2016

Mr. Richard Demerjian
University of California, Irvine
380 University Tower
Irvine, CA 92697-2325

File: IGR/CEQA
SCH#: 2016051050
Log #: 1753-B
I-405/SR-73

Dear Mr. Demerjian:

The California Department of Transportation (Caltrans) appreciates the opportunity to review and comment on Tiered Mitigated Negative Declaration (MND) for the proposed UCI Classroom Building at Founder's Court project. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The proposed project would construct a three story, 71,818 sq. ft. structure on a 1.2 acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active learning lecture halls, flat floor active learning classrooms, computer lab, and general assignment classrooms. An existing on site modular would be removed and a portion of Founder's Court would be reconfigured to allow space for the proposed project. A new 40-ft wide pedestrian radial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned. This proposed project is located in proximity to State Route 73 (SR-73) and Intestate 405 (I-405). Caltrans is a commenting agency on this project and has the following comments:

- Any hauling of materials should not occur during A.M. and P.M. peak periods of travel on State facilities during demolition and/or construction of the proposed project. All vehicle loads should be covered so that materials do not blow over or onto the Caltrans Right-of-Way (R/W).

Please continue to keep us informed of this project and any future developments that could potentially impact State transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Leila Carver at (949) 756-7827.

Sincerely,

Maureen El Harake

MAUREEN EL HARAKE
Branch Chief, Regional-Community-Transit Planning
District 12

Response to the California Department of Transportation, District 12

Comment 1: The proposed project will adopt construction best management practices (BMPs) that will include construction-related hauling to occur during non-peak travel periods and prevention of material blow-over within public right-of-way.

CITY OF IRVINE
1971

Community Development cityofirvine.org

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

June 15, 2016

Mr. Richard Demerjian
Director of Environmental Planning & Sustainability
380 University Tower
Irvine, CA 92697

SUBJECT: Initial Study and Mitigated Negative Declaration for a New Classroom Building at University of California, Irvine

Thank you for the opportunity to review the Initial Study and Mitigated Negative Declaration for a new three-story, 71,818-gross-square-foot, classroom building on the University of California, Irvine (UCI) campus. The City of Irvine has the following comments:

1. In accordance with Long Range Development Plan (LRDP) Mitigation Measure Tra-1D, UCI should monitor campus trip generation and the performance of specific off-campus intersections (UCI Transportation Fee Program intersections) in relation to enrollment growth for each 3,000-student enrollment increase above 2007-2008 levels.

   Provide the total current student enrollment, including this project, from 2007-2008 until now. Additionally, provide the proportional funding for improvements at the impacted intersections as provided for in LRDP Mitigate Measure Tra-1D.

2. Provide an analysis of the UCI proportional funding for the Capital Improvement Program project involving the widening of University Drive from Campus Drive to MacArthur Boulevard, and the University Drive and Campus Drive intersection.

3. Provide a revised analysis for the timing of the LRDP mitigation measure improvements for the off-site locations.

4. Please expand the traffic analysis study area to include LRDP off-site locations.

Thank you again for the opportunity to review and comment on the Initial Study and Mitigated Negative Declaration. We would appreciate the opportunity to review any further information regarding this project as the planning process proceeds. If you have any questions, please contact me at 949-724-6364 or by email at jequina@cityofirvine.org.

Sincerely,

Justin Equina
Associate Planner

ec: Barry Curtis, Manager of Planning Services
Bill Jacobs, Principal Planner
David Law, Senior Planner
Sun-Sun Murillo, Supervising Transportation Analyst
Farideh Lyons, Senior Transportation Analyst
Lisa Thai, Senior Transportation Analyst

Response to the City of Irvine

Comment 1: The attached UCI LRDP Mitigation Measure Tra-1 Monitoring and Reporting table provides the current status of UCI implementation and monitoring of the Long Range Development Plan (LRDP) mitigation measure Tra-1, of which Tra-1D is one element. UCI's general on-campus enrollment for Academic Year 2015/16 was approximately 28,300, which reaches the first 3,000-student-enrollment threshold described in mitigation measure Tra-1D, based on a 2007/08 general on-campus enrollment of approximately 24,600. In reaching this threshold, UCI has initiated monitoring and analysis of the UCI Transportation Fee Program (UCITP) improvements identified in Tra-1D and has contacted the City regarding the status of the UCITP intersections located within the City's jurisdiction. UCI's fair share (proportional) funding for any UCITP improvements will be established by the percentage of UCI traffic volume at the impacted intersection as described in Tra-1D.

Comment 2: Although the University Drive widening and major pavement rehabilitation project is not included in the UCITP improvements listed in the LRDP EIR, the City has requested that the University contribute to this project by providing University right-of-way at no cost to the project. At the time of the request, the value of the right-of-way was estimated at $3.7 million (City Project Report dated June 2014). Subsequent design adjustments to the project will decrease the overall project cost and the amount of right-of way required. Based on the City'srequest, the appraisal and acquisition process for the right-of-way is currently proceeding through University and City approvals.

Comment 3: The UCITP improvements are off-campus improvements within City jurisdiction. The timing of improvements will depend on several factors including the City's capital improvement program for implementation of these improvements. UCI participation in these improvements would occur following determination of impact and subsequent implementation of measures to reduce the UCI-generated trips contributing to the impact.

Comment 4: As discussed above, the mitigation measure Tra-1 analysis currently underway will include analysis of the LRDP UCITP off-site locations as requested in this comment.

UCI LRDP Mitigation Measure Tra-1 Monitoring

Measure	*Status & Summary of Actions*
TRA-1A: To reduce on- and off-campus vehicle trips and resulting impacts, UCI will continue to implement a range of Transportation Demand Management (TDM) strategies. Program elements will include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking polices that reduce demand, and implement other administrative mechanisms that reduce vehicle trips to and from the campus. UCI shall monitor the performance of TDM programs through annual surveys.	Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 1.94 (based on 2015 survey), the highest of any employer greater than 3,000 in the Orange, LA, and Riverside County SCAQMD. UCI's annual investment in TDM measures is approximately $4.7 million. • 2015 UCI shuttle system ridership was 2.2 million passengers at a cost of $2.8 million. • "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes • 20% Rebate on commuter Metrolink and Amtrak train passes • Incentivized Vanpool, carpool, ridesharing programs • Zipcar car sharing program with 6,000 on campus members • Bicycle program highlights include "ZotWheels" the first bike sharing system in the region, over 3,000 bike parking spaces, significant investment in bikeway infrastructure, bicycle education for campus affiliates of all bicycling levels offered quarterly, and major bi-annual bike education festivals to encourage safe and legal riding.
TRA-1B: UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus.	UCI has implemented 2,910 beds of on-campus student housing (Fall 2016 occupancy) since 2007 with an investment of approximately $354 million. Approximately 47% of UCI students live on-campus. Planning is underway for an additional 2,200 student beds for Fall 2019 occupancy. UCI has constructed or approved 708 affordable on-campus faculty and staff homes at a cost of $275 million since 2007. Approximately 2/3rds of UCI faculty live on campus.
TRA-1C: To enhance transit systems serving the campus and local community, UCI will work cooperatively with the City of Irvine, City of Newport Beach, OCTA and other local agencies to coordinate service and routes of the UCI Shuttle with existing and proposed shuttle and transit programs including the proposed Jamboree/IBC Shuttle, proposed Orange County Great Park Shuttle, Irvine Spectrum Shuttle, and other community transit programs.	UCI works collaboratively with the local community to coordinate transit service including the City of Irvine transportation coordination committee to coordinate City-wide transit programs such as the UCI Shuttle, City I-Shuttle, bike programs, and other transit needs. UCI collaborates regularly with OCTA regarding bus routing, schedules, and UCI ridership.
TRA-1D: UCI will monitor campus trip generation and distribution and the performance of UCITP intersections in relationship to	UCI has reached the first 3,000-student-enrollment increase threshold and has initiated monitoring of UCITP intersections and collecting data for

enrollment growth. Monitoring will be conducted in consultation with the City of Irvine and the City of Newport Beach, and will occur at each 3,000-student increase in enrollment (measured as General Campus three-term average headcount), above the 2007-08 General Campus enrollment level. If UCI monitoring determines that LRDP traffic results in significant traffic impacts at UCITP intersections, UCI will implement measures to reduce vehicle trips contributing to the impact or provide "fair share" funding for improvements at the impacted intersections as described in Mitigation Measures Tra-1E and Tra-1F. UCI's share of funding will be determined by the percentage of UCI traffic volumes compared to the total traffic volumes at the impacted intersections.	analysis. UCI has requesting performance data from responsible jurisdictions.
TRA-1E: UCI will collect UCITP traffic fees from "for-profit" development projects on campus or other campus development as determined by the University. Fees will be provided to the City of Irvine, City of Newport Beach, or other public agencies to fund UCI's share of UCITP improvements when the improvements are implemented, as provided in mitigation measure Tra-1D.	No for-profit development has occurred on campus since 2007; therefore, no for-profit traffic fees have been collected.
TRA-1F: If the City of Irvine or City of Newport Beach implements UCITP improvements following UCI determination that LRDP traffic is causing a significant impact, and UCITP fees collected to date are insufficient to fund UCI's fair share, UCI shall identify and obtain funding for the fair share of identified improvements from an alternative source.	UCI currently holds a traffic fee balance of $2.6 million as a result of traffic fee credits from the City of Irvine, but no determination of impact has been identified to date. 2007 LRDP EIR estimated that UCI additionally generates $2 million per year in Measure M funds for off-campus transportation improvements.
TRA-1G: UCITP fees established for future "for-profit" development on UCI's North Campus shall be commensurate with the traffic fees established in the City of Irvine's IBC Transportation Fee program.	No for-profit development projects have occurred at the North Campus.
TRA-1H: UCI will assess a San Joaquin Hills Transportation Corridor fee to future "for-profit" campus development projects in accordance with the development fee program established by the Joint Powers Agreement entered into by the City of Irvine, the County of Orange, and neighbor cities to help pay for the San Joaquin Hills Transportation Corridor. Future "for-profit" campus development shall be required to pay such fees prior to construction. UCI's obligation to pay its share of the costs of the San Joaquin Hills Transportation Corridor shall be satisfied upon the forwarding of	SJHTC fees have been paid for all University Hills faculty/staff homes. No for-profit projects have occurred since adoption of the 2007 LRDP.

these fees to the Transportation Corridor Agencies or other agency designated to collect such fees.	
TRA-1I: UCI shall review individual projects proposed under the 2007 LRDP for consistency with UC Sustainable Transportation Policy and UCI Transportation Demand Management goals to ensure that bicycle and pedestrian improvements, transit stops, and other project features that promote alternative transportation are incorporated to the extent feasible.	All UCI projects undergo review for consistency with UC Sustainable Transportation Policy and UCI TDM goals.
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.	MM Tra-1J is implemented on all UCI projects.

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

June 15, 2016

Richard Demerjian
University of California, Irvine
380 University Tower
Irvine, CA 92697-2325

Subject: Classroom Building
SCH#: 2016051050

Dear Richard Demerjian:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 14, 2016, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2016051050**
Project Title	Classroom Building
Lead Agency	University of California, Irvine

Type **MND** Mitigated Negative Declaration

Description The proposed project would construct a three story, 71,818 gsf structure on a 1.2 acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active learning lecture halls, flat floor active learning classrooms, computer lab, and general assignment classrooms. An existing on site modular would be removed and a portion of Founder's Court would be reconfigured to allow space for the proposed project. A new 40-ft wide pedestrian radial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned.

Lead Agency Contact

Name Richard Demerjian
Agency University of California, Irvine
Phone (949) 824-7058 ***Fax***
email
Address 380 University Tower
City Irvine ***State*** CA ***Zip*** 92697-2325

Project Location

County Orange
City Irvine
Region
Lat / Long 33° 38' 49.6" N / -117° 50' 40.8" W
Cross Streets West Peltason Dr and Mesa Rd
Parcel No.
Township ***Range*** ***Section*** ***Base***

Proximity to:

Highways SR 73, I 402
Airports
Railways
Waterways
Schools University HS, Turtle R
Land Use UC Irvine is not subject to local zoning requirements. Permitted uses in the 2007 LRDP allow educational facilities.

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

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

Date Received 05/16/2016 ***Start of Review*** 05/16/2016 ***End of Review*** 06/14/2016

Note: Blanks in data fields result from insufficient information provided by lead agency.

Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

clear 6/14/16
E

Edmund G. Brown Jr.
Governor

June 10, 2016

Mr. Richard Demerjian, Director (rgdemerj@uci.edu)
University of California, Irvine
380 University Tower
Irvine, California 92697

DTSC REVIEW OF THE DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE UNIVERSITY OF CALIFORNIA, IRVINE – CLASSROOM BUILDING (SCH# 2016051050)

Dear Mr. Demerjian:

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the University of California, Irvine – Classroom Building (project), dated May 2016 and received by DTSC on May 19, 2016. The proposed project would construct a three-story structure on a 1.2-acre site on the University campus. The structure would include office space and 1,260 classroom seats, including active leaning lecture halls, flat-floor active learning classrooms, computer lab, and general assignment classrooms. An existing on-site modular would be removed and a portion of Founders' Court would be reconfigured to allow space for the proposed project. A new 40-foot-wide pedestrian redial mall and bicycle path would be constructed and two adjacent service drives would be removed and realigned. Based on the review of the Draft IS/MND, DTSC would like to provide the following comments:

> If the existing building within the project area was constructed prior to 1978, lead based paint and organochlorine pesticides (from termiticide applications) may be potential environmental concerns. DTSC recommends that these environmental concerns be investigated and possibly mitigated, in accordance with DTSC's *"Interim Guidance, Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers,"* dated June 9, 2006.

DTSC is also administering the Revolving Loan Fund (RLF) Program which provides revolving loans to investigate and clean up hazardous materials at properties where redevelopment is likely to have a beneficial impact to a community. These loans are available to developers, businesses, schools, and local governments.

For additional information on DTSC's Schools process or RLF Program, please visit DTSC's web site at www.dtsc.ca.gov. If you would like to discuss this matter further, please contact me at (714) 484-5320 or at rana.georges@dtsc.ca.gov.

Sincerely,

Rana Georges
Project Manager
Schools Evaluation and Brownfields Cleanup Branch
Brownfields and Environmental Restoration Program

cc: State Clearinghouse (via e-mail)
Office of Planning and Research
state.clearinghouse@opr.ca.gov

Mr. Michael O'Neill (via e-mail)
Department of Education
moneill@cde.ca.gov

Bedelia Honeycutt (via e-mail)
Department of Education
bhoneycu@cde.ca.gov

David Kereazis (via e-mail)
DTSC CEQA Tracking Center – Sacramento, CA
dave.kereazis@dtsc.ca.gov

B&ERP Reading File – Cypress

CEQA Reading File – Cypress

Response to the State Clearinghouse

Comment 1: The State Clearinghouse included the comment letter from the Department of Toxic Substances Control dated June 10, 2016. This is a duplicate comment letter and was previously responded to above.

APPENDIX F

Mitigation Monitoring and Reporting Program

CLASSROOM BUILDING

MITIGATION MONITORING AND REPORTING PROGRAM - 2016

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
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.	D&CS/EPS	D&CS to review during design EPS to confirm
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: • 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; • Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and • Shielding 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.	D&CS/EPS	D&CS to review during design EPS to confirm
AQ-1	Prior to initiating 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 BMPs: • During grading and site preparation activities, exposed soil areas shall be stabilized via frequent watering, on-toxic chemical stabilization, or equivalent measures at a rate to be determined by the on-site construction supervisor. • 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.	D&CS/EPS	D&CS to confirm and monitor contractor EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	• Disturbed areas designated for landscaping shall be prepared as soon as possible after completion of construction activities. • 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. • 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. • 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. • 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. • Speed limit signs at 15 mph or less shall be installed on all unpaved roads within construction sites. • 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. • 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. • 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. • Heavy duty diesel trucks and gasoline powered equipment shall be turned off if idling is anticipated to last for more than 5 minutes. • Where feasible, the construction contractor shall use alternatively fueled construction equipment, such as		

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	electric or natural gas-powered equipment or biofuel. • Heavy construction equipment shall use low NOx diesel fuel to the extent that it is readily available at the time of construction. • To the extent feasible, construction activities shall rely on the campus's existing electricity infrastructure rather than electrical generators powered by internal combustion engines. • 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. • Where possible, the construction contractor shall provide a lunch shuttle or on-site lunch service for construction workers. • 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. • 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. • 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.		
BR-1	If construction occurs during the nesting season (February 1 through August 31), pre-constructing surveys for active nests shall be performed within 30 days prior to the commencement of any clearing or grading activities at locations	D&CS/EPS	D&CS to coordinate surveys and

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	within 500 feet of the approved limits of disturbance where suitable nesting habitat exists. Construction activities within 300 feet of active nests shall be monitored by a qualified biologist until the biologist determines that the nest is no longer active. Construction may encroach within the 300-foot buffer only at the discretion of the biologist.		incorporate into construction documents EPS to confirm
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 archaeological 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: a. Perform appropriate technical analyses; b. File an resulting reports with South Coast Information Center; and c. Provide the recovered materials to an appropriate repository for curation, in consultation with a culturally-affiliated Native American.	D&CS/EPS	On-site construction supervisor to notify D&CS and EPS who will stop/direct work Submit final report to EPS
Cul-4A	Prior to grading or excavation for future project that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontology 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 ay the end of monitoring.	D&CS/EPS	On-site construction supervisor to notify D&CS and EPS who will stop/direct work Submit final report to EPS
Cul-4B	If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.	D&CS/EPS	Submit documentation to

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
			EPS to report procedures were followed
Cul-4C	For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: 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.	D&CS/EPS	Submit documentation to EPS to report procedures were followed and an attempt to house found fossils occurred
Haz-6A	Prior to initiating on-site construction for future projects that implement the 2007 LRDP and would involve a land or roadway closure, the construction contractor and/or UCI Design and Construction Services shall notify the UCI Fire Marshall. If determined necessary by the UCI Fire Marshal, local emergency services shall be notified of the lane or roadway closure by the Fire Marshall.	D&CS/EPS	D&CS to record notification to the Fire Marshall EPS to confirm
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: 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. Measures that control runoff discharge volumes and durations shall be utilized, where applicable and feasible, on	D&CS/EPS	D&CS to incorporate findings into project design EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	manufactured slopes and newly-graded drainage channels, such as energy dissipaters, revegetation (e.g., hydroseeding and/or plantings), and slope/channel stabilizers.		
Hyd-2A	Prior to initiating on-site construction for future projects that implement the 2007 LRDP, UCI shall approve an erosion control plan for project construction. The plan shall include, but not be limited to, the following applicable measures to protect downstream areas from sediment and other pollutants during site grading and construction: • Proper storage, use, and disposal of construction materials. • Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter. • Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures. • Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures. • Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures. • Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures). • Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping. • Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.	D&CS/EPS	D&CS to prepare erosion control plan and incorporate into construction documents EPS to confirm
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	D&CS/EPS	D&CS to incorporate into construction documents EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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. • 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. • Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment. • 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. • 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.		
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: • 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. • 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. • Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-	D&CS/EPS	D&CS to confirm with contractor and incorporate into construction documents EPS to confirm

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
	campus residential housing shall be limited to the hours of 9:00 amto 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. • Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise. • 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. • 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. • 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. • 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.		