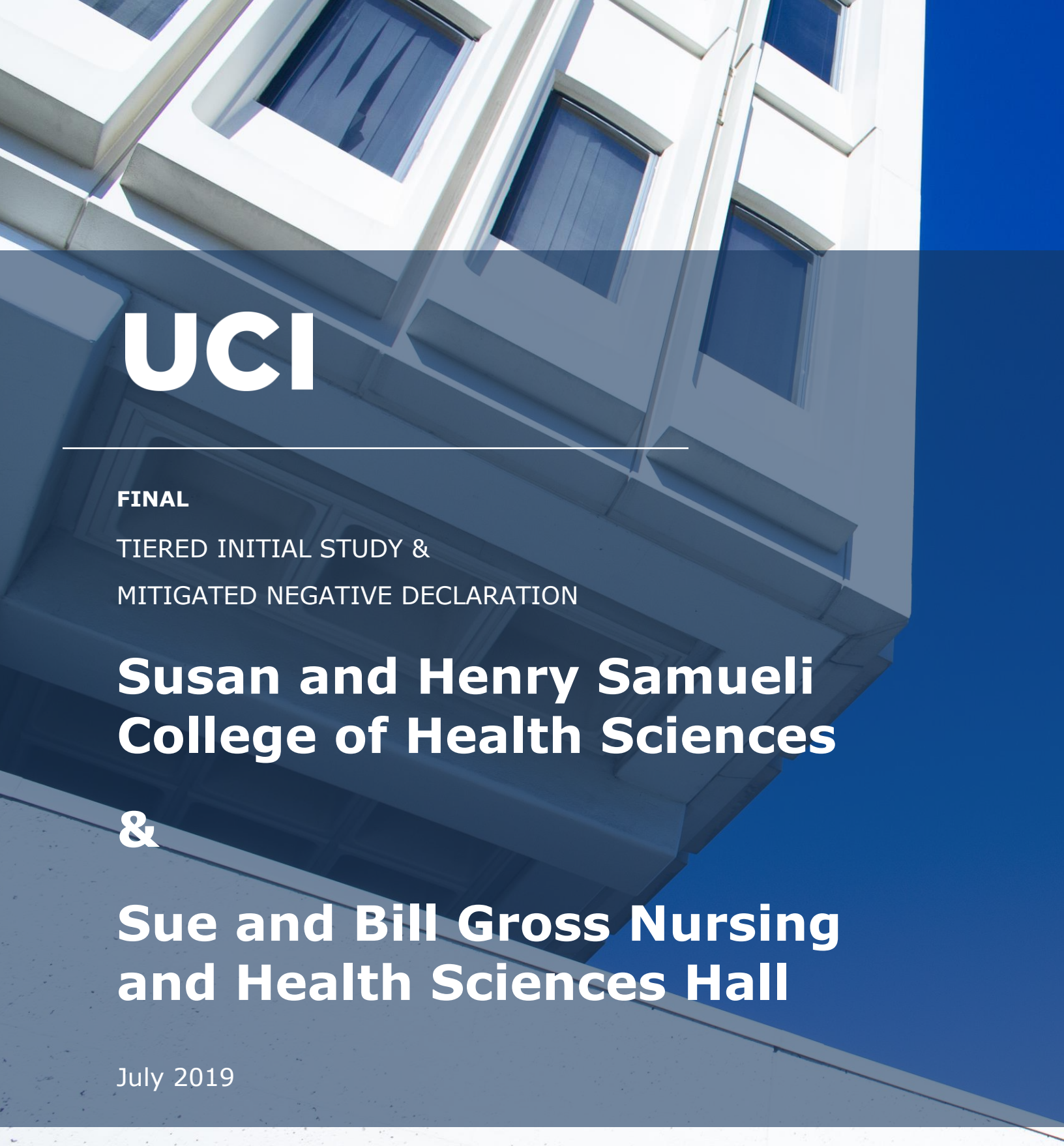

UCI

FINAL

TIERED INITIAL STUDY &

MITIGATED NEGATIVE DECLARATION

Susan and Henry Samueli College of Health Sciences

&

Sue and Bill Gross Nursing and Health Sciences Hall

July 2019

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1.0 PROJECT INFORMATION

1.1 Project Title

Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall

1.2 Lead Agency Name and Address

University of California, Irvine
Office of Physical and Environmental Planning
4199 Campus Drive, Suite 380, Irvine, CA 92697-2325

1.3 Contact Person and Phone Number

Lindsey Hashimoto, Senior Planner
(949) 824-8692

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 1-1). The project site is located in UCI's Health Sciences Quad in the West Campus northerly adjacent to California Avenue and Bison Avenue intersection.

1.5 Custodian of the Administrative Record

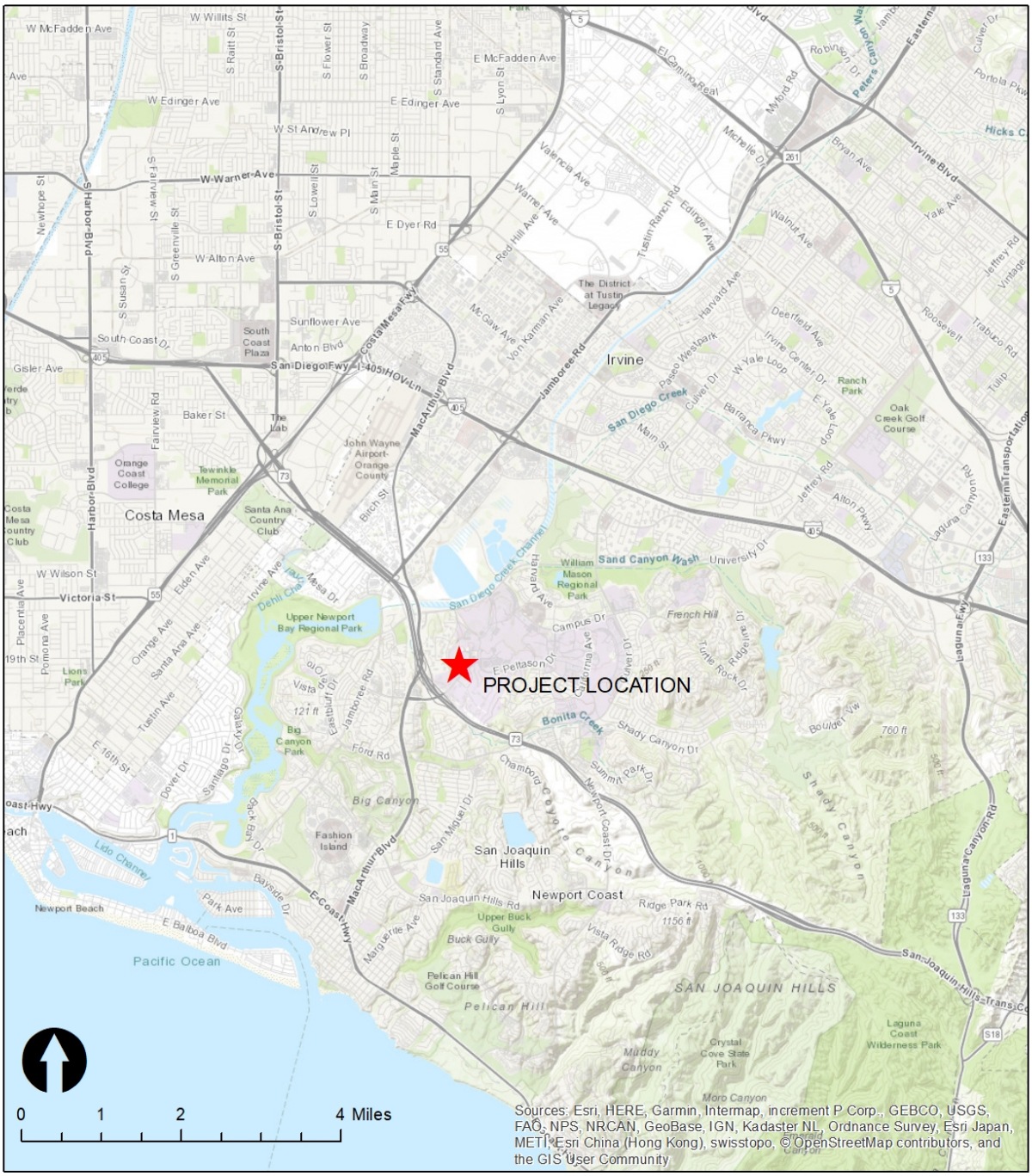
University of California, Irvine
Office of Physical and Environmental Planning
4199 Campus Drive, Suite 380, Irvine, CA 92697-2325

1.6 Documents Incorporated by Reference

The University of California, Irvine Long Range Development Plan (LRDP, UCI, 2007) is a comprehensive land use plan, based on projections through horizon year 2026, which guides campus growth. 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 California Environmental Quality Act (CEQA) Guidelines Sections 15152 and 15168. This document is used to tier subsequent environmental analyses, including this Initial Study/Mitigated Negative Declaration (IS/MND), for campus development.

Exhibit 1-1
Regional Location



2.0 PROJECT DESCRIPTION

2.1 Environmental Setting and Surrounding Land Uses

The proposed 11.4-acre project site is located in the Health Sciences Quad of the West Campus. Surrounding uses include the Gavin Herbert Eye Institute and surface parking Lot 82 to the east; undeveloped land, Lot HT, Hewitt Hall, and Gross Hall to the north; Bison Avenue, surface parking Lot 70, and the University Research Park to the south; and California Avenue and the University Research Park to the west. Existing on-site uses include surface parking Lot 83 and additional parking west of the Gavin Herbert Eye Institute, a vehicle loop, pedestrian walkways, disturbed and nonnative grassland, and ornamental landscaping (see Exhibits 2-1 and 2-2).

2.2 Description of Project

The proposed project would demolish the existing on-site surface parking, vehicle loop, ornamental landscaping, and pedestrian walkways to construct two new structures in the Health Sciences Quad. The proposed project would construct the approximately 95,000-gross-square-foot Sue and Bill Gross Nursing and Health Sciences Hall (Nursing Building) at the north corner of the California Avenue and Bison Avenue intersection, and the approximately 125,000 GSF Susan and Henry Samueli College of Health Sciences (College of Health Sciences) adjacent to the Nursing Building (see Exhibit 2-3). The structures would be approximately five stories with a mechanical penthouse and designed and constructed primarily of concrete, brick, or stone masonry consistent with the architectural design guidelines in the UCI Physical Design Framework and surrounding buildings in the Health Sciences Quad and University Research Park (see Exhibit 2-4).

As shown in Table 2.1-1, the Nursing Building would include approximately 95,000 GSF of instructional/classroom, research, office, and support space for the School of Nursing and School of Population Health.

Table 2.1-1
Nursing Building Space Breakdown (GSF)

Space Type	GSF	% of Total GSF
Instructional/Classroom	26,315	27.7%
Research	26,600	28%
Office	38,855	40.9%
Building Support/Storage	3,230	3.4%
Total	**95,000**	**100%**

Exhibit 2-1
Project Location and Adjacent Land Uses

Exhibit 2-2
Existing Project Views

View 1: Southern boundary of the project site looking northeast toward the project site and Gavin Herbert Eye Institute.

View 2: Center of the project site looking south toward Bison Avenue.

View 3: Center of project site looking northeast toward Gavin Herbert Eye Institute, Gross Hall, and Hewitt Hall.

View 4: East boundary of the project site looking northeast toward Gross Hall and Hewitt Hall.

View 5: North boundary of the project site looking north toward the ephemeral drainage.

View 6: North boundary of the project site looking southeast toward Gavin Herbert Eye Institute.

View 7: West boundary of the project site looking southwest toward California Avenue.

View 8: West boundary of the project site looking west toward the University Research Park.

View 9: South corner boundary of the project site looking north toward the project site.

Exhibit 2-3
Conceptual Site Plan

Exhibit 2-4
Conceptual Perspectives

As shown in Table 2.1-2, approximately 83,500 GSF of the College of Health Sciences building would consist of instructional/classroom, research, office, and support space for the Vice Chancellor for Health Affairs and Schools of Pharmacy and Pharmaceutical Sciences, Population Health, and Medicine.

The Susan Samueli Center for Integrative Medicine is an existing clinic currently located in leased space 2.7 miles northeast of the project site in the city of Costa Mesa. It would be relocated into approximately 25,000 ASF (up to 41,500 GSF) of allotted space within the College of Health Sciences building and renamed the Susan Samueli Integrative Health Institute.

Table 2.1-2
College of Health Sciences Building Space Breakdown (GSF)

Space Type	GSF	% of Total GSF
Clinical	41,500	33.2%
Instructional/Classroom	26,500	21.2%
Research	17,375	13.9%
Office	35,875	28.7%
Building Support/Storage	3,750	3.0%
Total	**125,000**	**100%**

In order to operate the two structures, it is anticipated approximately 100 new full-time faculty and staff would be hired, significantly less than 0.1 percent of the existing on-campus population. The instructional space would be utilized by the existing student population and would not directly increase student enrollment.

Due to the circulation modifications and realignment included as part of the project, 461 existing on-site parking spaces to the west and north of the Gavin Herbert Eye Institute and within Lot 83 would be demolished during construction. These spaces would be replaced at a one-to-one ratio north of the two new buildings and within Lot 83. An additional approximately 350-space surface parking lot would be constructed north of the replacement parking and would be accessed through the existing Lot HT.

To increase vehicular accessibility to the project site, a left-hand turn pocket, pending City of Irvine permit approval, would be installed and a driveway would be constructed on California Avenue at the western project boundary. Existing on-site infrastructure, such as the vehicle loop and pedestrian walkways, would be realigned to accommodate the construction of an internal road bisecting the project site to connect the proposed California Avenue driveway to the existing Lot 83. Other site improvements would include 24-hour lighting in the surface parking lots and ornamental landscaping. Appropriate acoustical and visual buffers, as determined during the final design stages, would be utilized during project construction to minimize potential project related aesthetic and/or noise impacts to existing sensitive receptors in the project vicinity.

Per Section A, Green Building Design, of the UC Sustainable Practices Policy, the proposed project would meet or exceed LEED Silver equivalency and 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 percent. To achieve this goal, the design-build team would evaluate and explore the following measures, including, but not limited to: photovoltaics, radiant floor heating and cooling, passive and active chilled beams, energy efficient lighting, living walls, rainwater collection, minimizing natural gas combustion systems through use of electric powered thermal systems, lifecycle analysis of building materials and systems, sustainable landscaping, high-performance glazing, insulation and radiant barrier, high reflectance roofing materials, energy control systems, efficient exhaust fans, and high efficiency air conditioning equipment where applicable. Construction and operation of the proposed project would increase the amount of greenhouse gas emissions generated and energy consumed by the campus. However, as discussed further in Sections 4.5, Energy, and 4.6, Greenhouse Gas Emissions, the project would not impede the campus' ability to reduce emissions as required by the UC Carbon Neutrality Initiative and Section A of the UC Sustainable Practices policy.

2.2.1 Project Phasing and Site Development

Project construction is anticipated to begin in March 2020 and would occur over 26 months with anticipated completion in April 2022 and occupancy in May 2022. Demolition and grading would occur during the first three months, and construction over the next 26 months.

Grading for the proposed improvements would require cut and fill to create the building pads. The proposed project is anticipated to have approximately 22,230 cubic yards (CY) of cut and 12,446 CY of fill, requiring approximately 9,784 CY of exported soil.

2.2.2 Access

Construction staging is proposed to occur on or adjacent to the project site to the north or west, but would avoid the existing drainage and associated vegetation communities located approximately 150 feet north of the project boundary as discussed further in Section 4.3, Biological Resources. Haul routes during construction would be along Bison Avenue, California Avenue, and East and West Peltason Drives, with site access located at the intersection of California Avenue and Theory Drive.

Operational vehicle access to the project site would occur via the existing driveway on Bison Avenue and the proposed driveway on California Avenue. The new approximately 350-space surface parking lot, replacement parking, and existing Lots HT and 83 located northeast of the project site would serve faculty, staff, students, and visitors. Additional parking would be available in Lot 70 south of Bison Avenue. On-site pedestrian access would be maintained but would be realigned as part of the project to increase accessibility from California Avenue to the existing development in the Health Sciences Quad northeast of the project site.

2.2.3 Utilities

Initial analyses indicate that existing utility systems have adequate capacity to serve the project and are available in the vicinity of the site. The proposed project would receive water services from the Irvine Ranch Water District (IRWD). Potable water would be connected through an existing 12-inch line located in Bison Avenue, recycled water through an existing 12-inch line in California Avenue, and sanitary sewer water through an existing 12-inch line in California Avenue. To provide on-site electricity, the buildings would connect to an existing 12-kilovolt (kV) line north of Gavin Herbert Eye Institute that connects to UCI's electrical substation located east of Health Sciences Road. If any existing connections conflict with the project design, alternative and/or temporary utilities would be provided to all adjacent structures during relocation.

Storm drainage would be collected and treated on site through best management practices (BMPs), then conveyed to an existing 12-inch storm drain located to the south of the project site in Bison Avenue. Low impact development (LID) features may be implemented in compliance with UCI's MS4 permit to retain stormwater flows to the north of the project site before release into the existing ephemeral drainage, which would be determined during the final design phase.

2.3 Consistency with the LRDP

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. The project site is designated as Income-Producing Inclusion Area in the LRDP, which allows for office, research, conference, and clinical uses. Furthermore, the up to 200,000 GSF proposed for the two structures is within the space program identified for the West Campus in the LRDP and analyzed in the LRDP EIR. Therefore, the project is consistent with the 2007 LRDP.

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

Lead Agency

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 IS/MND and approving the proposed project. The Board of Regents of the University of California (The Regents) will consider design and CEQA approval of the proposed project in July 2019.

Responsible Agencies

City of Irvine

3.0 DETERMINATION

On the basis of the initial study that follows:

	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.

Signature — Date: 7.2.19

Richard Demerjian — For

Printed Name

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
Except as provided in Public Resources Code Section 21099, 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 public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				**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 elsewhere on the UCI campus (LRDP EIR, page 4.1-6). Furthermore, the project site is located in the West Campus, which has been previously developed with compatible uses consisting of office and medical office buildings, parking lots, and support facilities. 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 indicates that there are no Officially Designated State Scenic Highways located within proximity to the project site.[1] The closest Eligible State Scenic Highway – Not Officially Designated, Pacific Coast Highway, is located more than two miles southwest and is not visible from the campus. 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: Less than Significant Impact

The two proposed structures would be approximately five stories constructed primarily of concrete, brick, or stone masonry consistent with the architectural guidelines in the UCI Physical Design Framework. Areas adjacent to the project site include multi-story office and medical office buildings constructed with similar materials, such as the University Research Park to the west and the Gavin Herbert Eye Institute to the east of the project site. Additionally, the project site would connect to the Health Sciences Quad to the northeast which includes multi-story academic and research buildings. No applicable regulations govern scenic quality of the viewshed surrounding the project area. Therefore, the proposed project would retain the visual character of the campus and surrounding uses and impacts would be less than significant. No mitigation is required.

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

The proposed project would include outdoor lighting to provide safe levels of illumination for pedestrians, bicyclists, and motorists, such as exterior building mounted fixtures and 24-hour parking lot lighting. Although areas adjacent to the project site have been previously developed, ambient lighting levels would increase with the installation of 24-hour lighting. However, the project site is located within a predominantly developed area of the West Campus where the increase in ambient lighting levels would be minimal. A lighting plan would be prepared during the design phase, as required by mitigation measure Aes-2B, which would include a number of design features to reduce impacts from project light sources, such as standardized cutoff lighting fixtures and shielding to minimize light pollution. Furthermore, all building surfaces would be designed in accordance with mitigation measure Aes-2A to reduce glare for passing motorists and pedestrians. Therefore, with implementation of LRDP EIR mitigation measures Aes-2A and Aes-

[1] http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed March 28, 2019.

2B, potential impacts due to the creation of light and glare would be reduced to a less than significant level.

Mitigation Measures

LRDP EIR 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.

LRDP EIR 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.

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 district 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) 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?				**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?				**X**	
d) Result in other emissions, such as those leading to 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 Kimley-Horn and Associates, Inc. and is included as Appendix A of this IS/MND.

a) Air Quality Management Plan Consistency: No Impact

As part of its enforcement responsibilities, the Environmental Protection Agency (EPA) requires each state with nonattainment areas for air pollutants to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP

must integrate Federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clear Air Act (CCAA) requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the Federal and State ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The project site is located within the South Coast Air Basin (SCAB), which is under South Coast Air Quality Management District's (SCAQMD) jurisdiction. The SCAQMD is required, pursuant to the Federal Clean Air Act (FCAA), to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. To reduce such emissions, the SCAQMD drafted the 2016 Air Quality Management Plan (AQMP), which establishes rules and regulations directed at reducing air pollutant emissions and achieving State and Federal air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the California Air Resources Board (CARB), Southern California Association of Governments (SCAG), and EPA. The AQMP's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.

The proposed project is subject to the SCAQMD AQMP. Criteria for determining consistency with the AQMP are defined by the following indicators:

- Consistency Criterion No. 1: The proposed project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay the timely attainment of the AQMP air quality standards or the interim emissions reductions.

- Consistency Criterion No. 2: The proposed project would not exceed AQMP assumptions or increments based on the years of the project build-out phase.

The violations to which Consistency Criterion No. 1 refers are California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). As shown in Table 4.2-1 and Table 4.2-2 below, the proposed project would not exceed the short-term construction standards or long-term operational standards and would therefore not violate any air quality standards. Therefore, no impact is anticipated, and the proposed project would be consistent with the first criterion.

For Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, which were defined in consultation with local governments and with reference to local general plans. The proposed project is consistent with the UCI Long Range Development Plan (LRDP) land use designation of Income-Producing Inclusion Area, which allows for office space, research and development uses, commercial and retail space,

conference facilities, research facilities, clinical uses, multi-purpose facilities (e.g., auditoriums, arenas), and other commercial or non-profit facilities. Additionally, the project site is zoned as Institutional in the Irvine General Plan, which allows for public and educational facilities. The proposed project's population growth would be nominal and is already anticipated in the Irvine General Plan, and therefore the projections within the AQMP. Additionally, it would not cause the SCAQMD's population or job growth projections used to develop the AQMP to be exceeded. Therefore, the proposed project would not conflict with an air quality plan and no impact would occur. No mitigation is required.

b) Cumulatively Considerable Net Increase of Any Criteria Pollutants: Less Than Significant Impact

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD thresholds of significance.

Construction results in the temporary generation of emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

The duration of construction activities associated with the proposed project are estimated to last up to 26 months. The proposed project is anticipated to require a net cut of approximately 9,784 cubic yards (CY) of soil. Construction-related emissions were calculated using CalEEMod, which is designed to model emissions for land use development projects, based on typical construction requirements. The predicted maximum daily construction-related emissions are summarized in Table 4.2-1. As shown in Table 4.2-1, all criteria pollutant emissions would remain below their respective thresholds. While impacts would be considered less than significant, the proposed project would be subject to compliance with SCAQMD Rules 402 (Nuisance), 403 (Fugitive Dust), and 1113 (Architectural Coatings) to further reduce specific construction-related emissions. This includes prohibiting discharge of air contaminants that would cause injury or nuisance to the public, implementation of best management practices (BMPs) to reduce fugitive dust during construction, and requiring the use of architectural and industrial maintenance coatings with limited ROG content.

Table 4.2-1: Construction-Related Emissions (Maximum Pounds per Day)

Construction Year	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2020	4.81	59.85	35.04	0.09	10.11	6.32
2021	3.03	26.00	25.38	0.07	3.83	1.70
2022	21.61	23.70	24.66	0.07	3.67	1.56
SCAQMD Threshold	*75*	*100*	*550*	*150*	*55*	*150*
Exceed SCAQMD Threshold?	No	No	No	No	No	No
Notes: SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include 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. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.						
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Operational Emissions

The operational emissions of the proposed project would be associated with motor vehicle use and area sources, such as the use of landscape maintenance equipment and architectural coatings. Long-term operational emissions attributable to the proposed project are summarized in Table 4.2-2. As shown in Table 4.2-2**,** the operational emissions would not exceed SCAQMD thresholds for any criteria air pollutants.

Table 4.2-2: Long-Term Operational Emissions (Maximum Pounds per Day)

Source	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions						
Area Source Emissions	5.05	0.00	0.07	0.00	0.00	0.00
Energy Emissions	0.13	1.21	1.01	0.00	0.09	0.09
Mobile Emissions	1.51	6.20	21.74	0.09	7.96	2.17
Total Emissions	6.70	7.41	22.82	0.09	8.05	2.26
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	No	No	No	No	No	No
Winter Emissions						
Area Source Emissions	5.05	0.00	0.07	0.00	0.00	0.00
Energy Emissions	0.13	1.21	1.01	0.00	0.09	0.09
Mobile Emissions	1.49	6.39	20.65	0.08	7.96	2.17
Total Emissions	6.67	7.60	21.73	0.09	8.05	2.26
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	No	No	No	No	No	No
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Area Source Emissions

Area source emissions would be generated due to consumer products, architectural coating, and landscaping that were previously not present on the site. As shown in Table 4.2-2, the unmitigated area source emissions of the proposed project would not exceed SCAQMD thresholds for either the winter or summer seasons.

Energy Source Emissions

Energy source emissions would be generated due to the electricity usage associated with the proposed project. The primary uses of electricity would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.2-2, the unmitigated energy source emissions would not exceed SCAQMD thresholds for criteria pollutants.

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, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern. NO_X and ROG react with sunlight to form O_3, known as photochemical smog. Additionally, wind currents readily transport PM_{10} and $PM_{2.5}$. However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions were estimated using CalEEMod, as recommended by the SCAQMD. The project trip generation estimates were based on rates from the project-specific Traffic Study prepared by Stantec and is included as Appendix E of this IS/MND. The proposed project would generate 969 average daily trips (ADT). As shown in Table 4.2-2, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants.

Cumulative Construction Emissions

The SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the construction-related project emissions by themselves would not exceed the SCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether individual project emissions have the potential to affect cumulative regional air quality, it can be expected that the project-related construction emissions would not be cumulatively considerable. The SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the FCAA mandates. The analysis assumed fugitive dust controls would be utilized during construction, including frequent water applications. SCAQMD rules, mandates, and compliance with adopted AQMP emissions control measures would also be imposed on construction projects throughout the SCAB, which would include related cumulative projects. As concluded above, the construction-related impacts of the proposed project would be less than significant. Compliance with

SCAQMD rules and regulations would further minimize the construction-related emissions. Therefore, project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality.

Cumulative Operational Impacts

The SCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, individual project emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the operational thresholds of significance based on the level above which individual project emissions would result in a cumulatively considerable contribution to the SCAB's existing air quality conditions. Therefore, a project that exceeds the SCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact. As shown in Table 4.2-2, the operational emissions of the proposed project would not exceed SCAQMD thresholds. Therefore, the operational emissions would not result in cumulatively considerable contribution to significant cumulative air quality impacts.

Therefore, in compliance SCAQMD Rules 402 (Nuisance), 403 (Fugitive Dust), and 1113 (Architectural Coatings), the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment and impacts would be less than significant. No mitigation is required.

c) Sensitive Receptors: Less Than Significant Impact

Localized Construction Significance Analysis

To identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction. The SCAQMD provided the Final Localized Significance Threshold Methodology (dated June 2003 [revised 2008]) for guidance, which assists lead agencies in analyzing localized impacts from project-specific emissions.

Because CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 4.2-3 (Equipment-Specific Grading Rates), is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate SRA for the localized significance thresholds is the Central Orange County Coastal area (SRA 20), which includes the project site, and the project is anticipated to disturb a maximum of 3.5 acres in a single day.

Table 4.2-3: Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Graded per 8-Hour Day	Operating Hours per Day	Acres Graded per Day
Grading	Graders	1	0.5	8	0.5

	Dozers	1	0.5	8	0.5
	Scrapers	1	1.0	8	1.0
	Tractors/Loaders/Backhoes	3	0.5	8	1.5
Total Acres Graded per Day					3.5

The nearest sensitive receptors are the academic buildings in the Health Sciences Quad located east of the project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 25 meters were utilized in this analysis for receptors closer than 25 meters. Table 4.2-4 presents the results of localized emissions during project construction.

Table 4.2-4: Localized Significance of Construction Emissions (Maximum Pounds per Day)

Construction Activity	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Demolition	33.20	21.75	1.66	1.54
Site Preparation	42.42	21.51	9.92	6.27
Grading	50.20	31.96	5.90	3.54
Building Construction	19.19	16.85	1.12	1.05
Paving	11.12	14.58	0.57	0.52
Architectural Coating	1.41	1.81	0.08	0.08
SCAQMD Localized Screening Threshold (3.5 acres at 25 meters)	*164*	*1,328*	*11*	*7*
Exceed SCAQMD Threshold?	No	No	No	No

Table 4.2-4 shows that the emissions of these pollutants on the peak day of project construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the proposed project would result in a less than significant impact concerning LSTs during construction activities.

Localized Operational Significance Analysis

LSTs for receptors located at 25 meters for SRA 20 were utilized in this analysis. As the project site is 11.4 acres, the five-acre LST threshold was conservatively used, which is conservative as the thresholds increase with project size. The on-site operational emissions are compared to the LST thresholds in Table 4.2-5, which shows that the maximum daily emissions of on-site pollutants during project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the proposed project would result in a less than significant impact concerning LSTs during operational activities.

Table 4.2-5: Localized Significance of Operational Emissions (Maximum Pounds per Day)

Activity	Nitrogen Oxide (NOx)	Carbon Monoxide (CO)	Coarse Particulate Matter	Fine Particulate Matter

			(PM10)	(PM2.5)
Area Sources	0.00	0.07	0.00	0.00
SCAQMD Localized Screening Threshold (adjusted for 5 acres at 25 meters)	197	1,711	4	2
Exceed SCAQMD Threshold?	No	No	No	No

Criteria Pollutant Health Impacts

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (*Sierra Club v. County of Fresno* [Friant Ranch, L.P.] [2018] Cal.5th, Case No. S219783).

As previously discussed, project emissions would be less than significant and would not exceed SCAQMD thresholds (refer to Table 4.2-1 and Table 4.2-2). Localized effects of on-site project emissions on nearby receptors were also found to be less than significant (refer to Table 4.2-4 and Table 4.2-5). The LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or State AAQS. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect public health, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. As shown above, project-related emissions would not exceed the regional thresholds or the LSTs, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based ambient air quality standards.

Carbon Monoxide Hotspots

An analysis of CO "hot spots" is needed to determine whether the change in the Level of Service (LOS) of an intersection resulting from the proposed project would have the potential to result in exceedances of the CAAQS or NAAQS. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The SCAB was re-designated as attainment in 2007 and is no longer addressed in the SCAQMD AQMP. The 2003 AQMP is the most recent version that addresses CO concentrations. As part of the SCAQMD CO Hotspot Analysis, the Wilshire Boulevard/Veteran Avenue intersection, one of the most congested intersections in

Southern California with approximately 100,000 ADT, was modeled for CO concentrations. This modeling effort identified a CO concentration high of 4.6 ppm, which is well below the 35-ppm Federal standard. The proposed project would not produce the volume of traffic required to generate a CO hot spot. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection even as it accommodates 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any intersections in the project vicinity resulting from 969 ADT attributable to the proposed project. Therefore, impacts would be less than significant.

Construction-Related Diesel Particulate Matter

Project construction would generate diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

The use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and the exhaust from construction equipment would dissipate rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The closest sensitive receptors to the project site are located approximately 30 feet from the project limits, and further from the major project construction areas.

California Office of Environmental Health Hazard Assessment has not identified short-term health effects from DPM. Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time. Construction activities would be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than five minutes to further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. For these reasons, DPM generated by project construction activities would not expose sensitive receptors to substantial amounts of air toxics.

Therefore, the impacts due to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant. No mitigation is required.

d) Emission Odors: Less than Significant Impact

The SCAQMD CEQA Air Quality Handbook identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed project would not include any of the land uses that have been identified as odor sources by SCAQMD.

During construction-related activities, some odors that may be detected are those typical of construction vehicles (e.g., diesel exhaust from grading and construction equipment). These odors are a temporary short-term impact that is typical of construction projects and would disperse rapidly. Therefore, because the proposed project would not include uses that have been identified as odor sources, impacts due to project emission odors would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

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 state or federally protected wetlands (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 site-specific Biological Resources Report was prepared by Michael Baker International and is included as Appendix B of this IS/MND.

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

The project-specific Biological Resources Report surveyed 27 acres within the Health Sciences Quad, which includes the 11.4-acre project site. The project site is located on a partially graded and developed site located in the south of the Health Sciences Quad. Undeveloped areas of the project site include disturbed and nonnative grassland.

One special-status plant species, Robinson's pepper-grass, has a moderate potential to occur on the project site, but was not observed during the biological surveying that occurred on December

3, 2018. The Robinson's pepper grass, has a California Rare Plant Rank (CRPR) designation of 4 and is not considered a significant take under CEQA. Therefore, additional focused surveys for rare plants are not required.

Two special-status wildlife species, the coastal California gnatcatcher and the northern harrier, were observed during surveying immediately north of the project site. Within the Orange County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), take of NCCP Identified Species is authorized on all lands owned by Participating Landowners outside the NCCP Reserve System. Therefore, as a Participating Landowner, UCI development activities that impact habitat occupied by Identified Species in the NCCP/HCP and its Implementation Agreement, which includes the coastal California gnatcatcher and northern harrier, is exempt under the NCCP Act, Federal Endangered Species Act (FESA), and California Endangered Species Act (CESA). Therefore, impacts to the special-status species would be less than significant.

Two special-status wildlife species, white-tailed kite and California horned lark, have a moderate potential to occur on the project site; however, neither of these species were observed during biological surveying that occurred on December 3, 2018. Due to the moderate potential of the two special-status wildlife species and the presence of marginally suitable habitat within the surveyed area north of the project site, potential impacts to wildlife species could occur. Therefore, with implementation of mitigation measures BR-1, BR-2, BR-3, and BR-4, which would survey wildlife prior to the start of construction, monitor wildlife during construction, and conduct pre-construction nesting bird surveys, impacts to special-status species would be reduced to a less than significant level.

b) Riparian Habitat: Less than Significant Impact with Project-level Mitigation Incorporated

c) Wetlands: Less than Significant Impact with Project-level Mitigation Incorporated

Due to previous grading and on-site development, the project site contains only ornamental and disturbed and nonnative grassland. Qualified biologists surveyed the project site on December 3, 2018 and no riparian habitat or wetlands were observed. However, there is an existing ephemeral drainage and three special-status vegetation communities, coastal sage scrub, southern willow scrub, and mule fat scrub, which could be impacted during construction due to its adjacency to the project site. Project-level mitigation measure BR-1, which requires staking of the habitat and drainage, is required to ensure that no impacts would occur during construction.

Additionally, the proposed project would comply with the General Construction Storm Water Permit program, which would implement construction control measures to be specified in the project's Storm Water Pollution Prevention Plan (SWPPP) and install and maintain the post-construction best management practices (BMPs) to be specified in the project's Water Quality Management Plan (WQMP). Compliance with the permit would ensure that runoff from the developed site does not violate any water quality standards.

Therefore, with implementation of project-specific mitigation measure BR-1, which would require staking of the jurisdictional areas and associated special-status plant communities, potential impacts to riparian habitat and wetlands would be reduced to a less than significant level.

d) Wildlife Corridors: Less than Significant Impact with Project-level Mitigation Incorporated

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 located more than 1,000 feet 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 NCCP Reserve System lands on the campus (LRDP EIR, page 4.3-47). However, north of the project site is undeveloped and contains marginally suitable habitat for wildlife to occur as discussed in 4.3(a) above. Therefore, with implementation of mitigation measures BR-2 and BR-3, impacts to wildlife would be reduced to a less than significant level.

e) Conflict with Applicable Policies: No Impact

As discussed above in 4.3(a), 4.3(b), and 4.3(c), with the incorporation of project-specific mitigation measures BR-2 and BR-3, the proposed project would not conflict with applicable federal, state, or local policies for biological resources. Additionally, the University is the only agency with local land use jurisdiction over the project site. No specific UC policies have been adopted for the project site protecting biological resources. Therefore, the proposed project would not conflict with local 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 project site itself is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat conservation plan. As discussed in 4.3(a) above, the proposed project does not conflict with the Orange County NCCP/HCP. Therefore, no impacts would occur. No mitigation is required.

Mitigation Measures

BR-1: Prior to the start of construction, the existing ephemeral drainage and special-status vegetation communities located to the north of the project site shall be staked off and remain until project construction completion. No routing, staging, or any work shall occur within the drainage or special-status vegetation communities.

BR-2: Prior to clearing, mowing, or ground-breaking activities, a qualified biologist shall conduct a focused wildlife clearance survey for special-status wildlife species with the potential to occur within the project site. Focused surveys shall be inclusive of the entire survey area. If

individuals of special-status wildlife species are found, they shall be allowed to move out of harm's way on their own accord. If they do not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate distance from the project site, unless they are a Federally and/or State-listed species in which coordination and direction from USFWS and/or CDFW, respectively, shall be required.

BR-3: During construction, prior to the end of each work day, all open pipes and trenches shall be covered adequately to prevent wildlife from falling in and getting trapped. Prior to the start of construction each day, the construction site shall be checked, including vegetation, open pipes and trenches, and under staged vehicles, equipment, and materials. If species are found, measures adherent to mitigation measure BR-2 described shall be implemented.

BR-4: In order to avoid impacts to nesting birds, project activities shall occur outside of the peak avian breeding season, which runs from February 1st through August 31st. If project construction is necessary during the bird breeding season, a qualified biologist with experience in conducting bird breeding surveys shall conduct surveys for nesting birds, within three days prior to the work in the area, and ensure no nesting birds in the project area would be impacted by the project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer shall be a minimum width of 300 feet (500 feet for raptors), be delineated by temporary fencing, and remain in effect as long as construction is occurring or until the nest is no longer active. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or other possible factors.

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 pursuant to Section 15064.5?					**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		**X**			
c) Disturb any human remains, including those interred outside of formal cemeteries?				**X**	

Discussion

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

a) Historical Resources: No Impact

As discussed in Section 2.0, Project Description, the only existing on-site structural uses are surface parking, a vehicle loop, and pedestrian walkways associated with the adjacent Gavin Herbert Eye Institute, none of which would be considered an historical resource under Section 15064.5 of the CEQA Guidelines. Furthermore, LRDP EIR Table 4.4-2 lists campus buildings that would be at least 50 years old by the LRDP horizon year of 2025 and eligible for the Register of Historical Resources based on age (page 4.4-15). None of the structures listed are located on the project site. Therefore, the proposed project would not cause a substantial adverse change to an historical resource and no impact 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. Two archaeological sites have been discovered and recorded in the

West Campus, one of which is located within the project site boundary where an andesite core tool was discovered along with fossil remains. However, both the archaeological and paleontological resources were previously recovered and recorded during construction of the University Research Park to the west of the project site. To date there has been no evidence of additional archaeological resources within the project boundary, but there is possibility 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, and 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) 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 7050.5 of the California Health and Safety Code and Public Resources Code 5097.98, 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 Native American, s/he would contact the Native American Heritage Commission (NAHC) within 24 hours, who would in turn, notify the person they identify as the most likely descendent (MLD) of the human remains. Further actions would be determined by the MLD who has 48 hours after notification of the NAHC to make recommendations regarding the disposition of the remains. Therefore, compliance with the California Health and Safety Code and Public Resources Code would reduce potential impacts to human remains to a less than significant level. No mitigation is required.

Mitigation Measures

LRDP EIR 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.

4.5 Energy

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) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?					**X**

Discussion

Energy thresholds were added in the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018. As such, an Energy section was not specifically included in the 2007 LRDP EIR. However, many energy-related issues are discussed in Section 5.0 of the LRDP EIR, which addresses climate change and greenhouse gas emissions.

a) Energy Resources: Less than Significant Impact

b) Conflict with Renewable Energy or Efficiency Plan: No Impact

The proposed project would be constructed to adhere to the UC Sustainable Practices Policy, which implements system-wide building standards to reduce energy use through green building design and clean energy. Although construction of the proposed project would increase the amount of energy use on the campus, as discussed in Section 2.0, Project Description, the project would incorporate various sustainable project design features (e.g., water conservation measures, meet or exceed LEED Silver rating, exceed Title 24 by 20 percent, use energy efficient lighting, use electricity for all space and water heating, etc.) in compliance with the UC Sustainable Practices Policy. In order for the campus to reach the carbon neutrality goal of zero emissions of scope 1 and 2 sources by 2025 and scope 3 sources by 2050 as required by the Carbon Neutrality

Initiative and the UC Sustainable Practices Policy, the campus has identified a tiered set of strategies. These strategies include low-carbon growth through green building programs, reducing existing emissions through deep energy efficiency, replacing fossil fuel-based energy by deploying of on-site renewable energy and procuring off-site renewable energy, and mitigating the remaining carbon emissions through offset programs. Furthermore, the proposed project would not impede the campus' ability to reduce energy usage as it would achieve a high attainment of energy efficiency in accordance with UC policy.

Therefore, in compliance with the UC Sustainable Practices Policy, the proposed project would not result in inefficient or unnecessary consumption of energy nor would it conflict with a State or local plan for renewable energy or energy efficiency. No mitigation is required.

4.6 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) Directly or indirectly cause 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 direct or indirect 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**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		**X**			

Discussion

Geology and soils and paleontological resources are discussed in Sections 4.5 and 4.4, respectively, of the 2007 LRDP EIR.

a) Expose People or Structures to:

i) Fault Rupture: 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, but a locally mapped fault trace, known as the "UCI Campus Fault," traverses the campus. A Restricted Use Zone (RUZ) extending 50 feet beyond both sides of this fault has been established to prevent the construction of new development on the fault in case of rupture (LRDP EIR, pages 4.5-8 through 9). The RUZ does not extend onto the project site, which is located approximately three-quarter mile southwest of the fault. Grading, foundation, and building structure elements would be designed to meet or exceed the California Building Code (CBC) seismic safety standards and comply with the UC Seismic Safety Policy. Therefore, due to project site location and compliance with the CBC, impacts due to fault rupture would be less than significant.

ii) Seismic Ground Shaking: Less than Significant Impact

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, approximately 35 miles northeast of the campus could generate an 8.0 magnitude level of energy, and movement along the San Jacinto Fault, approximately 30 miles away, could release ground motion energy estimated at 7.5 on the Richter scale (LRDP EIR, page 4.5-2).

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, and people within the proposed project could be exposed to these hazards. However, grading, foundation, and building structure elements would be designed to meet or exceed the CBC seismic safety standards. In addition, the University has adopted a number of programs and procedures to reduce the hazards from seismic shaking, including compliance with the UC Seismic Safety Policy, which to the extent feasible, requires earthquake engineering standards for new construction and renovation projects to provide an acceptable level of earthquake safety for campus users. Therefore, compliance with the CBC, UC Seismic Safety Policy, and implementation of recommendations in the site-specific geotechnical study conducted during the design phase would reduce any potential hazards associated with seismic ground shaking to a less than significant level. No mitigation is required.

iii) Liquefaction: Less than Significant Impact

Liquefaction occurs when loosely deposited granular soils with silt and clay content undergoes loss of strength when subjected to strong earthquake-induced ground shaking. The 2007 LRDP EIR indicates that a majority of soils on the UCI campus are characterized as terraced deposits. Additionally, the project-specific Preliminary Geotechnical Data Report, which surveyed the project site indicates that only a small area is susceptible to liquefaction. However, due to the density of the shallow soils and the depth to the groundwater table, liquefaction is not likely to occur at the project site. Therefore, compliance with the CBC, UC Seismic Safety Policy, and implementation of recommendations in the site-specific geotechnical investigation conducted

during the design phase would reduce any potential hazards associated with liquefaction to a less than significant level. No mitigation is required.

iv) Landslide: Less than Significant Impact

Landslides often occur due to strong ground shaking, which is due to generally weak soil and rock on sloping terrain. However, as discussed in 4.6-4(a)(iii), the majority of soils on the campus are characterized as terraced deposits. Additionally, the project site, which has been partially graded and disturbed, is located on relatively level terrain with minimal sloping, which characterizes a low potential for landslides. Furthermore, the project site is not located in an area considered to be susceptible to seismically induced landslides according to the California Geological Survey.[1] Therefore, impacts due to landslides would be less than significant. No mitigation is required.

b) Soil Erosion: Less than Significant Impact

As noted in the LRDP EIR, earth-disturbing activities associated with project construction that may result in soil erosion would be temporary. The project would comply with the CBC, which regulates excavation and grading activities, and the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities, which requires preparation of an erosion control plan and implementation of construction best management practices (BMPs) to prevent soil erosion. Such BMPs could include, but not limited to, 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).

Although the proposed project would increase impermeable surfaces on the project site, soil erosion is not anticipated to occur during operation. As discussed in Section 4.8, Hydrology and Water Quality, in the event that storm water runoff were to increase, velocities would be reduced to preexisting conditions to the extent feasible (LRDP mitigation measure Hyd-1A). Therefore, impacts due to soil erosion would be less than significant. No additional mitigation is required.

c) Soil Instability: Less than Significant Impact

If loose or compressible soil materials occur on site, they may be subject to settlement under increased loads. Soil instability may also occur 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 detailed site-specific geotechnical investigation would be conducted during the design phase and any recommendations would be implemented in accordance with the CBC. Therefore, potential impacts associated with unstable materials would be reduced to a less than significant level. No mitigation is required.

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[1] https://maps.conservation.ca.gov/cgs/informationwarehouse/landslides/. Accessed April 3, 2019.

d) Expansive Soils: Less than Significant Impact

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

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 and implementation of the recommendations in the detailed project-specific geotechnical investigation conducted during the design phase 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 include a sanitary waste disposal system and no impact would occur. No mitigation is required.

f) Paleontological Resources and Geologic Features: Project Impact Adequately Addressed in the 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 on 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, which requires monitoring during grading and proper recovery if fossils are found, would reduce impacts to paleontological resources to a less than significant level (LRDP EIR, page 4.4-20).

Mitigation Measures

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

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

LRDP EIR 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.

4.7 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

Greenhouse gas (GHG) issues are discussed in Section 5.0 of the 2007 LRDP EIR. A project-specific Greenhouse Gas Assessment was prepared by Kimley-Horn and Associates, Inc. and is included as Appendix C of this IS/MND.

a) Greenhouse Gas Emissions: Less than Significant Impact

Short-Term Construction Greenhouse Gas Emissions

The proposed project would result in direct GHG emissions from construction-related activities. The duration of construction is estimated to last up to 26 months and require a net cut of approximately 9,784 cubic yards (CY) of soil. The approximate daily GHG emissions generated by construction equipment utilized to build the proposed project, calculated using California Emissions Estimator Model (CalEEMod), are included in Table 4.7-1.

Table 4.7-1: Construction-Related Greenhouse Gas Emissions

Category	$MTCO_2e$
Total Construction Emissions	1,594
30-Year Amortized Construction	53
Source: CalEEMod version 2016.3.2. Refer to Appendix D for model outputs.	

As shown in Table 4.7-1, construction-related activities would generate approximately 1,594 metric tons of carbon dioxide equivalent (MTCO2e) of GHG emissions over the course of construction. Construction GHG emissions are typically summed and amortized over the project's lifetime (assumed to be 30 years), then added to the operational emissions. The amortized construction-related project emissions would be 53 MTCO2e per year.

Long-Term Operational Greenhouse Gas Emissions

Operational emissions would occur over the life of the proposed project. GHG emissions would result from direct sources, such as project-generated vehicular traffic and operation of landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water and wastewater to the site, emissions associated with solid waste generated, and any fugitive refrigerants from air conditioning or refrigerators. As shown in Table 4.7-2, operational GHG emissions combined with construction-related GHG emissions, would generate approximately 1,859 $MTCO_2e$ annually. The proposed project would not exceed the South Coast Air Quality Management District (SCAQMD) GHG threshold of 3,000 $MTCO_2e$ per year, which is the standard used for non-industrial project screening. Therefore, project-related GHG emissions would be less than significant. No mitigation is required.

Table 4.7-2: Project Greenhouse Gas Emissions

Emissions Source	$MTCO_2e$ per Year
Construction Amortized Over 30 Years	53
Area Source	0
Energy	614
Mobile	1,104
Waste	73
Water and Wastewater	15
Total	**1,859**
SCAQMD Project Threshold	*3,000*
Exceeds Threshold?	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix D for model outputs.	

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

The proposed project would comply with the UC Sustainable Practices Policy, which establishes goals and policies to reduce GHG emissions from various sources system-wide. The policy includes goals in various areas of sustainable practices including green building design, clean energy, climate protection, transportation, building operations, zero waste, procurement, foodservices, and water systems.

As required by the UC Sustainable Practices Policy, all new buildings are required to outperform

the California Building Code (CBC) energy-efficiency standards (Title 24) by at least 20 percent or meet whole-building energy performance targets identified within the policy. On-site fossil fuel combustion is limited to the extent feasible, and buildings are required to achieve U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) "Silver" standards at minimum and strive to achieve LEED "Gold" or higher. Additionally, the proposed project would not impede or conflict with any of the sustainable practices of the policy, including campus-wide clean energy, energy efficiency, renewable energy, and sustainable transportation.

The proposed project would also be consistent with the UCI Climate Action Plan (CAP), which identifies UCI's long-term vision and commitment to reduce its GHG emissions in support of the UC 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 49 percent from projected emissions), climate neutrality by the year 2025 (for on-site combustion of fossil fuels and purchased electricity), and climate neutrality by the year 2050 (for UCI commuters and university-funded air travel). As discussed in 4.7-1(a) above, GHG emissions from the proposed project would be approximately 1,859 $MTCO_2e$ per year with implementation of the green building requirements of the UC Sustainable Practices Policy and would not surpass the SCAQMD threshold of 3,000 $MTCO_2e$ per year.

The proposed project demonstrates consistency with CAP goals, measures, and emission reduction targets, and would not conflict with any regulation adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, the proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.8 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 or excessive noise for people residing or working in the project area?				**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		**X**			
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				**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

As discussed in the 2007 LRDP EIR, implementation would include development of facilities that use hazardous materials in teaching and research activities (page 4.6-25). Also, with an increase in on-campus facilities, expansion of maintenance and cleaning services would be required, which would increase the use, handling, storage, and disposal of products routinely used in building maintenance, some of which may contain hazardous materials. This, in turn, would

result in an increase in the amount of hazardous materials that are used, stored, transported, and disposed and could increase the potential for an accident or accidental release of hazardous materials or wastes.

The proposed facilities, research, academic, office, and clinical space and associated surface parking, would be similar to those already present on campus, and specifically within the Health Sciences Quad where the project site is located. These facilities may use a variety of chemicals, compounds, and other materials that are considered hazardous. However, the type, form, and concentrations of potentially hazardous materials proposed for use during operation and maintenance at the proposed project and how these would be transported, used, and stored, would be consistent with existing practices by UCI's Office of Environmental Health and Safety.

As discussed in the 2007 LRDP EIR, transportation of hazardous materials and wastes along any City or State roadway or rail lines within or near the campus is subject to all relevant Department of Transportation (DOT), California Highway Patrol (CHP), and California Department of Health Services (DHS) hazardous materials and wastes transportation regulations, as applicable. Regular inspections of licensed waste transporters are conducted by a number of agencies to ensure compliance with requirements that range from the design of vehicles used to transport wastes to the procedures to be followed in case of spills or leaks during transit.

Temporary, short-term related hazards for the project would include transport, storage, use, and disposal of asphalt, fuels, solvents, paints, thinners, acids, curing compounds, grease, oil, fertilizers, coating materials, and other hazardous substances 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). 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. 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 sites exist on-site (LRDP EIR, page 4.6-32). The project site is not included in any database of sites compiled pursuant to Section 65962.5 of the California Government Code, referred to as the Cortese List, and collected by the California Environmental Protection Agency (CalEPA 2016a). Specifically, the project site is not identified on (1) the California Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List, also called Envirostor; (2) DTSC's list of hazardous waste facilities where the

DTSC has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment; (3) State Water Resources Control Board's (SWRCB) Leaking Underground Storage Tank (LUST) sites, also called GeoTracker; (4) the SWRCB's list of Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO); and (5) the SWRCB's list of solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit. Therefore, no impact due to hazardous materials sites would occur. No mitigation is required.

e) Airport Land Use Plan: Less than Significant Impact

The campus is located in the John Wayne Airport (JWA) planning area, which is approximately two miles northwest of the project site. The Airport Land Use Commission for Orange County has established Runway Protection Zones (RPZ) for JWA, also called Accident Potential Zones (APZ), which define the surrounding areas that are more likely to be affected if an aircraft-related accident were to occur. Those zones do not extend to the campus, including the project site, and 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 campus. Additionally, as reported in the 2007 LRDP EIR, no accidents have occurred near the campus within the past 26 years (page 4.6-33).

As discussed in the 2007 LRDP EIR (page 4.9-33), JWA's 60 CNEL contour does not extend to the UCI campus and excessive noise due to the airport would not occur on the project site. Therefore, impacts due to the proximity to an airport would be less than significant. No mitigation is required.

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

In the event of a road closure, prior to the start of construction, the contractor would comply with LRDP EIR mitigation measure Haz-6A to ensure sufficient notification to the UCI Fire Marshal to allow coordination of emergency services that may be affected (LRDP EIR, page 4.6-34). Furthermore, the proposed project during both construction and operation would comply with 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 and compliance with the Emergency Response Plan, 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 LRDP EIR concluded that areas prone to wildfire within the campus are vegetation communities, such as coastal sage scrub and grassland (4.6-35), which are flashy fuels that can easily ignite during dry conditions. The proposed project site is located in the West Campus and surrounded by development along three sides; however, to the north is undeveloped land

containing various plant communities, including nonnative grassland and coastal sage scrub, as discussed in Section 4.3, Biological Resources. However, as discussed in the LRDP EIR, due to the limited quantities of native vegetation it is unlikely for a large scale wildfire to occur on the campus (page 4.6-36). Additionally, the use to be constructed adjacent to the undeveloped space to the north is an approximately 350-space surface parking lot, an entirely unenclosed area, which would have a limited number of people within it at any given time walking to and from their vehicles. No habitable structure would be constructed adjacent to the undeveloped area to the north of the project site. Therefore, the proposed project would not subject people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts would be less than significant. No mitigation is required.

Mitigation Measures

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

4.9 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 or otherwise substantially degrade surface or groundwater quality?		**X**			
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?					**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 or through the addition of impervious surfaces, in a manner which would:					
i) Result in substantial erosion or siltation on- or off-site;		**X**			
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;		**X**			
iii) Create or contribute runoff water which		**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
would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or					
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				**X**	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?					**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

Applicable water quality standards developed by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) for storm water are complied with through required permits, including the General Construction Storm Water Permit, which would control pollutants contained in runoff generated from campus properties (LRDP EIR, page 4.17-19).

Potential water quality impacts during the construction would be stockpiled soils and materials stored outdoors on or adjacent to the project site 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 and other hazardous materials, concrete slurries, and asphalt materials. These pollutants could impact water quality if washed, blown, or tracked off site to areas susceptible to wash off by storm water or non-storm water and could drain to one or

more of the local receiving waters (LRDP EIR, page 4.7-21). Landscaping could also result in water quality impacts due to the use of fertilizers. If discharged, they could adversely affect aquatic plants and animals downstream in receiving waters through a reduction in oxygen levels and an increase in eutrophication (LRDP EIR, page 4.7-21).

The proposed project would comply with the General Construction Storm Water Permit program, which would implement construction control measures to be specified in the project's Storm Water Pollution Prevention Plan (SWPPP) and install and maintain the post-construction best management practices (BMPs) to be specified in the project's Water Quality Management Plan (WQMP). Compliance with the permit would ensure that runoff from the developed site does not violate any water quality standards.

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. Furthermore, 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 measures Hyd-2A and Hyd-2B, which requires preparation of an erosion control plan during the design phase and implementation of design features to prevent contaminants from entering the storm system.

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 is provided water by the Irvine Ranch Water District (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) Substantially Alter the Existing Drainage Pattern which would:

i) Result in Substantial Erosion or Siltation: Project Impact Adequately Addressed in the LRDP EIR

For the project site, features that control run-off volumes and durations to minimize or eliminate erosion and siltation would be depicted on final construction plans. Any slopes would be landscaped and energy dissipaters and other control devices would be incorporated as needed. Drainage control measures would be implemented during rough grading to ensure that discharge volumes and durations are controlled on newly graded channels. Standard construction 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.

ii) Substantially Increase the Rate of Surface Runoff and Result in Flooding: Project Impact Adequately Addressed in LRDP EIR

The project site is currently partially undeveloped and would be converted to mostly impervious surfaces increasing the rate and amount of runoff. To avoid significant flooding impacts on- or off-site, the proposed storm drain system would be designed in accordance with the drainage criteria set forth in the LRDP mitigation measures Hyd-1A and Hyd-2B. The drainage system would be built to maintain or reduce 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, as well as site design, mechanical, structural, and non-structural measures to filter pollutants from site runoff prior to discharge into the existing storm drain networks. Therefore, with implementation of LRDP EIR mitigation measures Hyd-1A and Hyd-2B, impacts to the alteration of the drainage pattern would be reduced to a less than significant level.

iii) Exceed Capacity of Stormwater Drainage Systems: Project Impact Adequately Addressed in LRDP EIR

Storm drainage would be collected and treated on site through best management practices (BMPs), then conveyed to an existing 12-inch storm drain located to the south of the project site in Bison Avenue. Low impact development (LID) features or BMPs would be implemented in compliance with UCI's MS4 permit to retain any stormwater flows to the north of the project site before release into the existing ephemeral drainage.

Due to the increase in impervious surfaces, additional runoff would be calculated during the design phase of the project and the collection system would be upgraded to increase capacity, if needed. The on-site drainage system, which may include on-site retention basins or LID features, would be designed to provide sufficient capacity to manage the level of water runoff anticipated upon completion of construction. Therefore, with implementation of Hyd-1A and Hyd-2B, impacts due to additional polluted runoff would be less than significant.

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

The campus is located approximately three miles from the Pacific Ocean where 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 with potential for seiche and is relatively flat, which is not conducive for 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.

e) Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan: No Impact

Groundwater is not used on the campus as a source of water, thus, the project is not subject to the requirements of a groundwater management plan.

As described in responses provided above, the proposed project would not be a substantial source of pollutants that would result in significant impacts to surface water or groundwater quality. Additionally, the proposed project would implement and comply with the UCI Stormwater Management Plan (SWP)[1] as required by MS4 permit requirements under the Clean Water Act. All projects constructed on the campus are subject to review by the Office of Environmental Health and Safety, who ensure project compliance with the SWP and NPDES permit. Therefore, in compliance with the UCI SWP, the proposed project would not conflict with a water quality control plan or groundwater management plan and no impact would occur. No mitigation is required.

Mitigation Measures

LRDP EIR 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.

LRDP EIR 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:

[1] https://www.ehs.uci.edu/programs/enviro/stormwater/UCI_StormWater_ManagementPlan.pdf. Accessed April 4, 2019.

- 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.

LRDP EIR 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.

4.10 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) Cause a significant environmental impact with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?					**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 would construct research, office, instructional, and clinical space and associated surface parking in the West Campus. Surrounding uses include the Gavin Herbert Eye Institute and surface parking Lot 82 to the east; undeveloped land, Lot HT, Hewitt Hall, and Gross Hall to the north; Bison Avenue, surface parking Lot 70, and the University Research Park to the south; and California Avenue and the University Research Park to the west. The addition of research, office, instructional, and clinical space in the West Campus would be consistent with existing adjacent uses.

The proposed project would not affect the land use pattern of the surrounding community, either on- or off-campus. No existing bikeways, roadways, or driveways would be removed as part of the project. New pedestrian walkways would be constructed and existing walkways would be realigned to increase connectivity to the existing structures in the Health Sciences Quad located to the northeast of the project site. 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, Policy, or Regulation: No Impact

As discussed in Section 2.0, Project Description, 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. The project site is designated as Income Producing Inclusion Area in the LRDP, which allows for office, research, and clinical uses and multi-purpose facilities. Furthermore, the project scope of approximately 95,000 GSF Nursing Building and approximately 125,000 GSF College of Health Sciences, including the approximately 25,000 ASF allotted for clinical space, is within the total space program identified for the West Campus in the LRDP and analyzed in the LRDP EIR.

In addition, the proposed project would comply with the UC Sustainable Practices Policy and the Climate Action Plan (2016 Update). Refer to Section 4.6, Greenhouse Gas Emissions, for a detailed analysis regarding the project's compliance. Therefore, the proposed project would not conflict with the LRDP or any other applicable plan adopted to mitigate environmental effects and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.11 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) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?		**X**			
b) Generation of excessive groundborne vibration or groundborne noise levels?		**X**			
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?					**X**

Discussion

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

a) Noise Standards: Project Impact Adequately Addressed in the LRDP EIR

Project construction is projected to require conventional construction techniques and standard equipment such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous

trucks. Specialized construction activities that generate unusually loud and repetitive noise such as pile driving 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 project construction. The heaviest of these trucks would likely be required during the grading phase; however, construction-related truck traffic would comply with the City of Irvine's Designated and Restricted Truck Routes.

As indicated in the LRDP EIR, the project would generate noise that could expose nearby receptors to elevated noise levels during its approximately 24-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 90 dBA at 50 feet from the source and propagates as a point source that decays at a rate of 6 dB 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.

The proposed project would construct new buildings and surface parking adjacent to existing development of similar use. For operation of the project, existing ambient noise sources in the immediate vicinity of the project site include vehicular traffic from the surrounding surface parking lots, California Avenue, Bison Avenue, and pedestrian traffic. As discussed in Section 4.14, Transportation and Traffic, due to the relatively small volume of traffic expected to be associated with the AM and PM peak trips of the project (75 AM peak trips and 90 PM peak trips), 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 an office/research/clinical building would be similar to the existing uses surrounding the project site, which includes similar uses. 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.

Additionally, the LRDP EIR uses the State of California Land Use Compatibility for Community Noise Environment to address potential noise impacts (page 4.9-7). Office uses have a "normally acceptable" range of 50 to 70 dB CNEL. As discussed above and 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). Table 4.9-4 in the 2007 LRDP EIR provides the existing traffic noise levels and estimated LRDP buildout noise levels along roadway segments throughout the campus. The nearest roadway segment to the project site, Bison Avenue between California Avenue and East Pelatson Drive, has an estimated 67 dBA CNEL at 50 feet from the centerline at LRDP buildout, which is within the 50 to 70 dB CNEL range for office uses and is consistent with the average daily trips (ADT) estimated for the project site.

Therefore, with implementation of LRDP mitigation measure Noi-2A, which would reduce potential noise impacts during construction, the proposed project would not conflict with a noise standard.

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

The long-term operation of the proposed project 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. Construction may create a nuisance level of vibration-generated noise to existing sensitive receivers in the surrounding area. 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) Private Airstrips and Public Airport Noise: No Impact

No private airstrips are located in the vicinity of the campus. As discussed in the 2007 LRDP EIR (page 4.9-33), the nearest airport's (John Wayne) 60 CNEL contour[1] 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.

Mitigation Measures

LRDP EIR 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

[1] https://www.ocair.com/reportspublications/AccessNoise/cnelnoisecontours/2017.pdf. Accessed April 2, 2019.

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.

4.12 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 unplanned 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 people or housing, 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 Unplanned Population Growth: Less than Significant Impact

The proposed project, as described in Section 2.0, Project Description, would construct two buildings to house research, office, instructional, and clinical space. In order to operate the structures, it is anticipated approximately 100 new full-time faculty and staff would be hired, significantly less than 0.1 percent of the existing on-campus population. The instructional space would be utilized by the existing student population and would not directly increase student enrollment.

The existing 10,000 ASF Susan Samueli Center for Integrative Medicine, currently located off-campus 2.7 miles northeast of the project site in the city of Costa Mesa, would be relocated into 25,000 ASF of allotted space within the College of Health Sciences building. The relocation would result in approximately 100 additional off-campus daily users. However, the physical size of the clinic would not significantly increase with the relocation; therefore, substantial growth of

clientele is not anticipated and, due to its small size, would not induce substantial population growth of the area.

Additionally, the 100 new faculty and staff proposed to be hired and the 220,000 GSF proposed within the College of Health Sciences and Nursing buildings (including the 25,000 ASF of clinical space) are within the total faculty and staff population and building square footage buildout capacities analyzed within the 2007 LRDP EIR, which found that implementation of the 2007 LRDP would not result in significant impacts due to population growth.

Therefore, because the proposed project is consistent with the 2007 LRDP and the LRDP EIR, it would not substantially induce unplanned population growth and impacts would be less than significant. No mitigation is required.

b) Displace Existing People or Housing: No Impact

No existing housing would be demolished during construction. Therefore, the proposed project would not displace people or housing that would require the construction of replacement housing elsewhere and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.13 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: Less than Significant

Fire protection and emergency response services to the campus are provided by the Orange County Fire Authority (OCFA). The primary responder serving the campus, OCFA Fire Station #4, is located north of the campus on the corner of California and Harvard Avenues. Of the station's calls, UCI generated 923 calls, or approximately 38%, during 2016. According to an analysis conducted by OCFA in November 2006, this station had adequate capacity to accommodate existing demand on the main campus. Built in 1966, the station has no current plans for its expansion (LRDP EIR, page 4.11-6).

As discussed in Section 4.11, Population and Housing, the proposed project would hire 100 full-time faculty and staff population and will have an anticipated 100 off-campus daily visitors associated with the clinical space. However, these increases are within population and building capacities previously analyzed in the 2007 LRDP EIR and would not result in unplanned population growth on the UCI campus. Additionally, due to the negligible increase of population, it would not significantly increase demand for fire services. Furthermore, the project site is located within a five travel minute coverage area by OCFA. In 2016, the average response

time to UCI was six minutes and 56 seconds, which is within the standard adopted by OCFA, where a unit should be on-site within seven minutes and 20 seconds for 80 percent of emergency calls.[1] Therefore, the proposed project would not require the need for new fire protection facilities and impacts to services would be less than significant. No mitigation is required.

b) Police Protection: Less than Significant

The UCI Police Department (UCIPD) is located in the Public Services building on the East Campus approximately one-half mile northeast 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).

As discussed in Section 4.11, Population and Housing, the proposed project would not increase the campus population beyond what was planned for in the 2007 LRDP and analyzed in its EIR, and would not result in a significant increase in demand for police services. Furthermore, there are no current plans to expand or construct additional police facilities on the campus. Therefore, the proposed project would not require the construction of new police facilities and impacts to services would be less than significant. No mitigation is required.

c) Schools: Less than Significant

The Irvine Unified School District (IUSD) provides kindergarten through grade 12 (k-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 the campus population beyond what was planned for in the 2007 LRDP and analyzed in its EIR. Therefore, the proposed project would not require the need for new off-campus educational facilities and impacts to services would be less than significant. No mitigation is required.

d) Parks: Less than Significant Impact

As discussed in Section 4.11, Population and Housing, the proposed would not increase the campus population beyond what was planned for in the 2007 LRDP and analyzed in its EIR. Existing on-campus recreational facilities located throughout the campus, including Aldrich Park, Crawford Athletics Complex, and the Anteater Recreation Center have sufficient capacity to support the project and would not require the construction of new park facilities. Therefore, impacts to parks would be less than significant. No mitigation is required.

e) Other Public Facilities: Less than Significant

As discussed above and in Section 4.11, Population and Housing, the proposed project would not

[1] http://www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC_FINAL.pdf. Accessed March 24, 2019.

substantially increase on-campus population beyond what was planned for in the 2007 LRDP and analyzed in its EIR. Furthermore, public facilities, such as libraries, exist on-campus and would not result in the need for the construction of new facilities within the surrounding community. Therefore, impacts to other public facilities would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.14 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 substantially increase faculty, staff, student, or visitor populations and, therefore, would not result in accelerated deterioration of recreational uses on or off-campus. In addition, campus and community populations have access to on-campus recreational facilities, including the Anteater Recreation Center (ARC), Aldrich Park, and Crawford Athletics Complex. The 2007 LRDP EIR assumed that the current level of maintenance of campus recreational facilities would continue and that substantial facility deterioration would not occur (page 4.12-5). Therefore, impacts to existing recreational facilities would be less than significant. No mitigation is required.

b) Construction of Recreational Facilities: No Impact

The proposed project would construct two buildings, surface parking, a driveway, and

pedestrian walkways on the project site. No recreational facilities are included in the project scope. Additionally, the proposed project would not directly induce unplanned population growth and would not require the construction of new or expansion of existing recreational facilities. Therefore, no impacts due to construction or expansion of recreational facilities as a result of the project would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.15 Transportation

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, which is based on the traffic study prepared by Austin-Foust Associates, Inc. (now Stantec Consulting Services, Inc.) in 2007. In addition, a 2019 project-level study was prepared by Stantec Consulting Services, Inc. and is included as Appendix D.

Changes to the Transportation thresholds were included in the 2018 CEQA Guidelines Update, which became effective on December 28, 2018. Compliance is required after the grace period ends on July 1, 2020. Currently, the City of Irvine has not yet adopted VMT thresholds and the University is currently evaluating VMT models and data. As such, this Transportation section uses the previous thresholds to analyze impacts.

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

Roadways

Trip generation rates for the proposed project are estimated based on the UCI Main Campus Traffic Model (MCTM), developed as part of the 2007 LRDP EIR Traffic Study, for Faculty and Clinical uses. Table 4.15-1 shows the derivation of the estimated trip generation and corresponding trip rates for the proposed project. As shown in the table, the project would

generate a total of 937 daily trips of which 75 trips would occur during the AM peak hour and 90 trips during the PM peak hour.

Table 4.15-1: Proposed Project Trip Generation Summary

Project ADT Trip Generation					
Land Use	**Amount**	**Unit**	**Rate A**	**Rate B**	**Total**
Faculty	25	PER	21	40	37*
Medical Clinic	25	TSF	825	75	900
Total					937

Peak Hour Trip Rates (Percent of ADT)

	AM Peak Hour		PM Peak Hour	
Land Use	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Academic Use - Faculty	8.00%	0.70%	2.00%	7.50%
Medical Clinic	6.50%	1.50%	3.00%	6.50%

Project Peak Hour Trip Generation

	AM Peak Hour			PM Peak Hour			
Land Use	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**ADT**
Faculty	3	0	3	1	3	4	37
Medical Clinic - External Trips	54	12	66	25	54	79	825
Medical Clinic - Internal Trips	5	1	6	2	5	7	75
Medical Clinic - Total Trips	59	13	72	27	59	86	900
Total Trips	62	13	75	28	62	90	937

Trip Distribution

The trips accessing the project site would use Bison Avenue, California Avenue, and West Peltason Drive to access the surrounding circulation system. Project trip distribution was determined based on the project site location in relation to the surrounding uses while taking into account the proposed driveway locations, existing traffic flow patterns, and engineering judgement. Approximately 60 percent of the trips are estimated to use the Bison Avenue driveway, with 25 percent oriented toward the west on Bison Avenue and approximately 35 percent oriented toward the east on Bison Avenue and continuing along West Peltason Drive and East Peltason Drive. Approximately 40 percent of the project trips are anticipated to use the new driveway on California Avenue to access the site. Of those, approximately 20 percent are oriented towards the north on California Avenue and the remaining 20 percent are oriented towards the south on California Avenue.

Site Access

The primary access to the project site would be via the intersection of Bison Avenue and the project driveway opposite of Health Science Road, located approximately midway between

California Avenue and Peltason Drive. It is a full-access driveway and is currently stop-controlled; however, new traffic signal is currently being installed at this intersection. A secondary site access is proposed on California Avenue approximately 650 feet north of Bison Avenue. It would be a full access driveway with stop-control for the driveway.

Existing Plus Project Conditions

Existing-plus-project peak hour volumes were obtained by adding the project-generated peak hour trips to the existing intersection turning movement volumes at the study intersections.

The existing and existing-plus-project LOS based on existing lane configurations are summarized in Table 4.15-15-25-2. As shown in the table, the study intersections continue to operate at LOS A and LOS B during the AM and PM peak hours with the addition of the proposed project traffic. The proposed project would result in less than significant impact at the study intersections under existing conditions.

Table 4.15-15-2: Existing Plus Project Intersection LOS Summary

Intersection	Existing				Existing + Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1. SR 73 NB Ramps & Bison Ave	0.47	A	0.55	A	0.48	A	0.55	A	0.01	0.00
2. California Ave & Bison Ave	0.49	A	0.60	A	0.52	A	0.62	B	0.03	0.02
3. W. Peltason Dr & Bison Ave	0.54	A	0.65	B	0.54	A	0.65	B	0.00	0.00

LRDP Buildout with Project Analysis

LRDP buildout with project peak hour volumes were obtained by adding the project-generated peak hour trips to the LRDP buildout without project volumes. The LRDP buildout with and without project ICU values and LOS of the study intersections are summarized in Table 4.15-3 below.

The intersections operate at an acceptable LOS D or better during the AM and PM peak hours. The project has no significant impact on the study intersections under LRDP buildout conditions and therefore no mitigation is required.

Table 4.15.15-3: LRDP Build-out with-Project Intersection LOS Summary

Intersection	LRDP Build-out without Project				LRDP Build-out with Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1. SR 73 NB Ramps & Bison Ave	0.63	B	0.67	B	0.64	B	0.68	B	0.01	0.01
2. California Ave & Bison Ave	0.83	D	0.80	C	0.89	D	0.83	D	0.06	0.03
3. W. Peltason Dr & Bison Ave	0.74	C	0.70	B	0.74	C	0.70	B	0.00	0.00

b) Conflict with Congestion Management Program: No Impact

The nearest elements of the Orange County Congestion Management Program (CMP) highways and arterials network are Jamboree Road and MacArthur Boulevard located approximately 1.5 miles from the project site. CMP monitoring is conducted at the intersections of Jamboree Road/I-405 northbound and southbound ramps and at Jamboree Road/MacArthur Boulevard (LRDP EIR page 4.13-23). The CMP indicates that a significant impact may occur if a project generates more than 2,400 or more vehicle trips per day or contributes 1,600 or more vehicle trips per day into the CMP highway system. As discussed in 4.15(a) above, the project would generate approximately 937 ADT, which is significantly below the CMP threshold. 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 two 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 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 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

Construction staging is proposed to occur on or adjacent to the project site to the north or west. Haul routes during construction would be along Bison Avenue, California Avenue, and East and West Peltason Drives, with site access located at the intersection of California Avenue and Theory Drive. As described in Section 4.8, Hazards and Hazardous Materials, all lane closures during construction would be reviewed by the UCI Fire Marshal prior to construction to ensure adequate emergency access at all times. Therefore, with review of the proposed project by the UCI Fire Marshal, impacts related to emergency access during construction would be less than significant.

Operational vehicle access to the project site would occur via the existing driveway on Bison Avenue and the proposed driveway to be constructed on California Avenue. Existing on-site infrastructure, such as the vehicle loop and pedestrian walkways, would be realigned to accommodate the construction of an internal road bisecting the project site to connect the proposed California Avenue driveway to the existing Lot 83. The project would have two main

campus arterial access points, California Avenue and Bison Avenue, and would be designed consistent with the existing campus roadway network. Therefore, impacts due to inadequate emergency access during project operation 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). As such, the proposed project would not require the removal of transit routes or bicycle paths, and would not hinder implementation of TDM measures on the campus. Therefore, the proposed project would not conflict with alternative transportation plans, policies and programs and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.16 Tribal 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 cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape, that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				**X**	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				**X**	

Discussion

Tribal cultural resources thresholds were added in the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018. As such, a Tribal Cultural Resources section was not specifically included in the 2007 LRDP EIR. However, many tribal cultural resources-related issues are discussed in Section 4.4 of the LRDP EIR, which addresses historical, archeological, paleontological, and tribal resources.

a) Eligible for Listing in Local or California Register of Historical Resources: Less than Significant Impact

b) Resources Significance to a California Native American Tribe: Less than Significant Impact

Cultural fieldwork surveys were conducted in 1999 as part of the adjacent University Research Park project to the west of the project site across California Avenue. As discussed in Section 4.4, Cultural Resources, shellfish, evidence of prehistoric food remains, and prehistoric stone tool fragments were uncovered near the surface and recovered by a qualified archaeologist. Further field investigation of the site, which extended from the University Research Park into the Health Sciences Quad and the project site, found no indications of additional buried cultural deposits (LRDP EIR, page 4.4-4). No evidence of the site being eligible for listing on a historical register was been uncovered during the previous site surveying. Although no buried cultural resources have been uncovered during the previous investigation, earth-moving activities during project construction could uncover cultural resources. With implementation of mitigation measures, Cul-1C, as described in Section 4.4, Cultural Resources, and Cul-4A, as described in Section 4.6, Geology and Soils, which would require retention of an archaeological/paleontological monitor and consultation with a culturally-affiliated Native American, impacts would be less than significant.

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 January 8, 2019. UCI received notification from the Gabrieleño Band of Mission Indians requesting that an affiliated Native American monitor be on-site during ground disturbance activities. UCI has agreed with the Gabrieleño Band of Mission Indians' request and would have a Native American monitor on-site alongside the archeological/paleontological monitor during earthmoving activities for the project.

With the implementation of LRDP EIR mitigation measure Cul-1C and Cul-4A (hiring a qualified archaeological/paleontological monitor for ground-disturbing activities and to ensure the protection of any resources that may be discovered) and agreements in place with the Gabrieleño to monitor on-site earthwork during construction, impacts to tribal cultural resources would be reduced to a less than significant level. No additional mitigation beyond Cul-1C and Cul-4A, as described within Sections 4.4 and 4.6 of this IS/MND, is required.

Mitigation Measures

No mitigation measures are required.

4.17 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) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				**X**	
b) Have sufficient water supplies available to serve the project and reasonably forseeable future development during normal, dry, and multiple dry years?				**X**	
c) 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**	

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) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X	
e) Comply with applicable federal, state, and local management and reduction 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) Construction of New or Expansion of Existing Water, Wastewater, Electrical, Natural Gas, or Telecommunications Facilities: Less than Significant Impact

As discussed in Section 2.0, Project Description, initial analyses indicate that existing utility systems have adequate capacity to serve the project and are available in the vicinity of the site. The proposed project would receive water services from the Irvine Ranch Water District (IRWD). Potable water would be connected through an existing 12-inch line located in Bison Avenue, recycled water through an existing 12-inch line in California Avenue, and sanitary sewer water through an existing 12-inch line in California Avenue. To provide on-site electricity, the buildings would connect to an existing 12-kilovolt (kV) line north of Gavin Herbert Eye Institute that connects to UCI's electrical substation located east of Health Sciences Road.

Construction impacts would occur as part of the general site development phase while utility improvements are installed; however, no alterations to existing main line facilities would be required to provide adequate service to the project site that would require the construction of new off-site utility facilities. Therefore, construction of these components would not result in the construction of new or expansion of utility facilities and impacts would be less than significant. No mitigation is required.

b) Water Supplies: Less than Significant Impact

The 2015 IRWD Urban Water Management Plan (UWMP, 2015) projects district-wide water supply availability and demand through 2035, including the 2007 LRDP buildout. IRWD staff in consultation with UCI reviewed projected water service demand related to implementation of the 2007 LRDP for consistency with the 2005 UWMP and concluded that water supply reliability would not be compromised (LRDP EIR, page 4.14-17). Because the proposed project does not increase campus population or estimated water demand beyond what was analyzed in the 2007 LRDP EIR, the irrigation needs throughout the campus would continue to be fully met through reclaimed water supplies.

Although implementation of the 2007 LRDP would result in less than significant impacts to water supply, UCI 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 identify feasible programs, projects, and measures to reduce domestic water demand.

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 to water supplies would be less than significant. No mitigation is required.

c) Wastewater Capacity: Less than Significant Impact

The Michaelson Water Recycling Plant (MWRP) currently treats up to 28 million gallons per day (mgd) of wastewater, and an additional upgrade to 33 mgd is scheduled to be completed in 2025. IRWD forecasts 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 Section 2.0, Project Description, the MWRP would have sufficient capacity to accommodate the anticipated wastewater generation throughout the IRWD service area, including the proposed project. Therefore, the impact to wastewater treatment capacity would be less than significant (LRDP EIR, pages 4.14-12 through 13). No mitigation is required.

d) Solid Waste: Less than Significant Impact

The Frank R. Bowerman Landfill is permitted to receive a daily maximum of 11,500 tons per day and is expected to close 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 its 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.

e) Solid Waste Regulations: No Impact

The University of California is not subject to Assembly Bill 939 or other local agency regulations pertaining to solid waste management. Nonetheless, the University of California has adopted the Sustainable Practices Policy that requires campuses to undertake aggressive programs to reduce solid waste generation and disposal (LRDP EIR, 4.14-20). This includes voluntary compliance with the State Agency Integrated Waste Management Plan and prioritization of waste and recycling for LEED credits, including a life cycle assessment for reuse of building materials. Furthermore, Section F of the UC Sustainable Practices Policy, Recycling and Waste Management, requires the ultimate goal of zero waste by 2020. The campus currently has an 83 percent diversion rate from local landfills that has been achieved through recycling, composting, and reusing. Continued outreach programs, increased sustainable purchasing options, and proper hazardous waste disposal have the campus on track to reach 95 percent, or "zero waste". 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.

4.18 Wildfire

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
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				**X**	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				**X**	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				**X**	

Discussion

Wildfire thresholds were added in the 2018 CEQA Guidelines Update, which became effective on December 28, 2018. As such, a Wildfire section was not specifically included in the 2007 LRDP EIR. However, many wildfire-related issues are discussed in Section 4.6 of the LRDP EIR, which addresses hazards and hazardous materials.

a) Impair Adopted Emergency Response Plan: Less than Significant Impact

The University maintains a campus-wide Emergency Operations Plan (EOP)[1] that establishes policies, procedures, and organizational infrastructure for the campus to address potential emergency scenarios, such as earthquake, active shooter, laboratory fire, cyber threat, public health emergency, hazardous waste spill or release, terrorism, civil disturbance, and wildland fire. The proposed project would be consistent with surrounding uses (research, office, instructional, and clinical) facilities, and would not result in additional hazards not previously addressed within the EOP.

In the event that either California Avenue or Bison Avenue would need to be closed during project construction, access by fire protection, ambulances, police, or other emergency vehicles would be maintained for the active construction zones and surrounding land uses. All closures during construction would be reviewed by the UCI Fire Marshal, as discussed in Section 4.8, Hazards and Hazardous Materials, to ensure adequate emergency access at all times. Therefore, the proposed project would not substantially impair an adopted emergency response plan and no impact would occur. No additional mitigation is required.

b) Expose Occupants to Wildfire: Less than Significant Impact

Areas designated as having a high wildfire risk generally have characteristics such as steep slopes, dense native vegetation, and limited vehicle access and water supplies. The proposed project site is characterized by gradual slopes but a relatively flat surface and is surrounded on three sides with urban development, including vehicle access and a fire suppression line located in Bison Avenue. The area north of the project site is currently undeveloped and as discussed in Section 4.3, Biological Resources, contains various plant communities, including nonnative grassland and coastal sage scrub. However, as discussed in the Section 4.8, Hazards and Hazardous Materials and the LRDP EIR, due to the limited quantities of native vegetation it is unlikely for a large scale wildfire to occur on the campus (page 4.6-36). Additionally, the use to be constructed adjacent to the undeveloped space is an approximately 350-space surface parking lot, an entirely unenclosed area, which would have a limited number of people within it at any given time walking to and from their vehicles. No habitable structure would be constructed adjacent to the undeveloped area to the north of the project site.

The California State Board of Forestry and Fire Prevention has identified areas where the State has primary financial responsibility for preventing and suppressing fires, and are referred to as State Responsibility Areas (SRAs).[2] Lands where neither the State nor federal government has any legal responsibility for providing fire protection are referred to as Local Responsibility Areas (LRAs). UCI, including the proposed project site, is located in a LRA and the Orange County Fire Authority (OCFA) is responsible for fire prevention and suppression services. As shown in

[1] https://police.uci.edu/em/EmergencyManagementPlan.pdf. Accessed March 15, 2019.

[2] http://www.fire.ca.gov/firepreventionfee/sraviewer_launch. Accessed March 15, 2019.

mapping by CalFire, the campus is not located in a LRA Very High Fire Hazard Severity Zone (VHFHSZ).[3] The project would not construct additional development in a high fire hazard area and would not hinder regional wildfire suppression efforts. Therefore, exposing project occupants to wildfire would be less than significant. No mitigation is required.

c) Infrastructure that May Exacerbate Fire Risk: Less than Significant Impact

As discussed in 4.19(b), the project site is not located in a high wildfire risk area. Additionally, the site is adequately served by existing access roads and utilities that would be connected within developed areas to the south and east of the project site, including connections in California Avenue and Bison Avenue. Therefore, the proposed project would not require the installation or maintenance of infrastructure that would exacerbate fire risk and impacts would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation required.

[3] http://egis.fire.ca.gov/FHSZ/. Accessed March 15, 2019.

4.19 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 substantially 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 4.18, no significant environmental impacts that are not mitigatable were identified in the responses to questions regarding project effects. The area north of the proposed project contains sensitive biological resources and has the potential for wildlife occurrence that could be impacted during construction; however, project-level mitigation measures BR-1, BR-2, and BR-3 would reduce impacts to a less than significant level by requiring wildlife monitoring and staking the ephemeral drainage and associated plant communities to the north of the project site. There are no known historic resources on site, but in the event that a prehistoric, archaeological, or tribal cultural resource is discovered during grading, compliance with LRDP EIR mitigation measures Cul-1C, Cul-4A, Cul-4B, and Cul-4C and having an on-site tribal cultural resources monitor during earthmoving activities, 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 Section 2.0, 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 IS/MND. As discussed in Sections 4.1 through 4.18, 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 IS/MND. 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 the project itself 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 during project operation. Therefore, impacts due to direct or indirect effects on humans would be less than significant.

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APPENDIX A

Air Quality Assessment

Air Quality Assessment
for the proposed
College of Health Sciences and Nursing Building
at the University of California, Irvine

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LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
ADT	average daily traffic
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
COHS	College of Health Sciences
CY	cubic yards
DPM	diesel particulate matter
EHS	Environmental Health and Safety
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
H_2S	hydrogen sulfide
IGP	Irvine General Plan
Pb	lead
LST	local significance threshold
LRDP	Long Range Development Plan
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
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
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SRA	source receptor area
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SIP	State Implementation Plan
SF	square foot
SO_{4-2}	sulfates
SO_2	sulfur dioxide
TAC	toxic air contaminant
C_2H_3Cl	vinyl chloride
UC	University of California
UCI	University of California, Irvine

1 INTRODUCTION

This report documents the results of an Air Quality Assessment completed for the University of California Irvine (UCI) College of Health Sciences and Nursing Building. The purpose of this Air Quality Assessment is to evaluate the potential construction and operational emissions associated with the proposed Project and determine the Project's level of impact on the environment.

1.1 PROJECT LOCATION

The Project is in Orange County (County), in the City of Irvine (City) within the UCI campus; see Exhibit 1: Regional Vicinity. The 11.4-acre Project site is located in the west side of the UCI campus adjacent to the northeast corner of California Avenue and Bison Avenue intersection; see Exhibit 2: Site Vicinity. Regional access to the Project site is provided via Interstate 405 and State Route 73 located to the north and west, respectively. Local access to the Project site is provided via University Avenue and Bison Avenue.

1.2 PROJECT DESCRIPTION

The Project proposes to develop two new four- to five-story structures including a College of Health and Science (COHS) Building and a Nursing Building, a 300-space surface parking lot, as well as an interim parking lot providing up to 200 parking stalls; see Exhibit 3: Site Plan. The new buildings on campus would provide additional academic and clinical facilities, as well as parking for the additional students and faculty. The Project would generate 100 additional faculty and approximately 100 overall daily off-campus visitors. The overall student population would not directly increase. The Project proposes a total of 125,000 square feet (SF) of total floor area for the COHS Building with 100,000 SF dedicated to academic use and 25,000 SF dedicated to clinical use. The Nursing Building is proposed to have a total of 95,000 SF of total floor area that is dedicated to academic use. The COHS Building and Nursing Buildings would be oriented parallel to California Avenue and Bison Avenue, respectively. Building frontages are designed facing away from the street. The Project site is inside the UCI campus and is zoned for institutional land uses. Surrounding land uses include preservation and recreational land use to the north, as well as low to medium-high density residential land uses surrounding the eastern half of the UCI campus.

Project Construction and Phasing

Project construction is anticipated to occur beginning in March 2020 and last approximately 26 months, ending in April 2022. Grading for the proposed improvements would require cut and fill to create building pads. The Project is anticipated to require a net cut of approximately 9,784 cubic yards (CY) of soil. Final grading plans would be approved by the UCI Building Official before Grading Permit issuance. All infrastructure (i.e., storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

Exhibit 1: Regional Vicinity

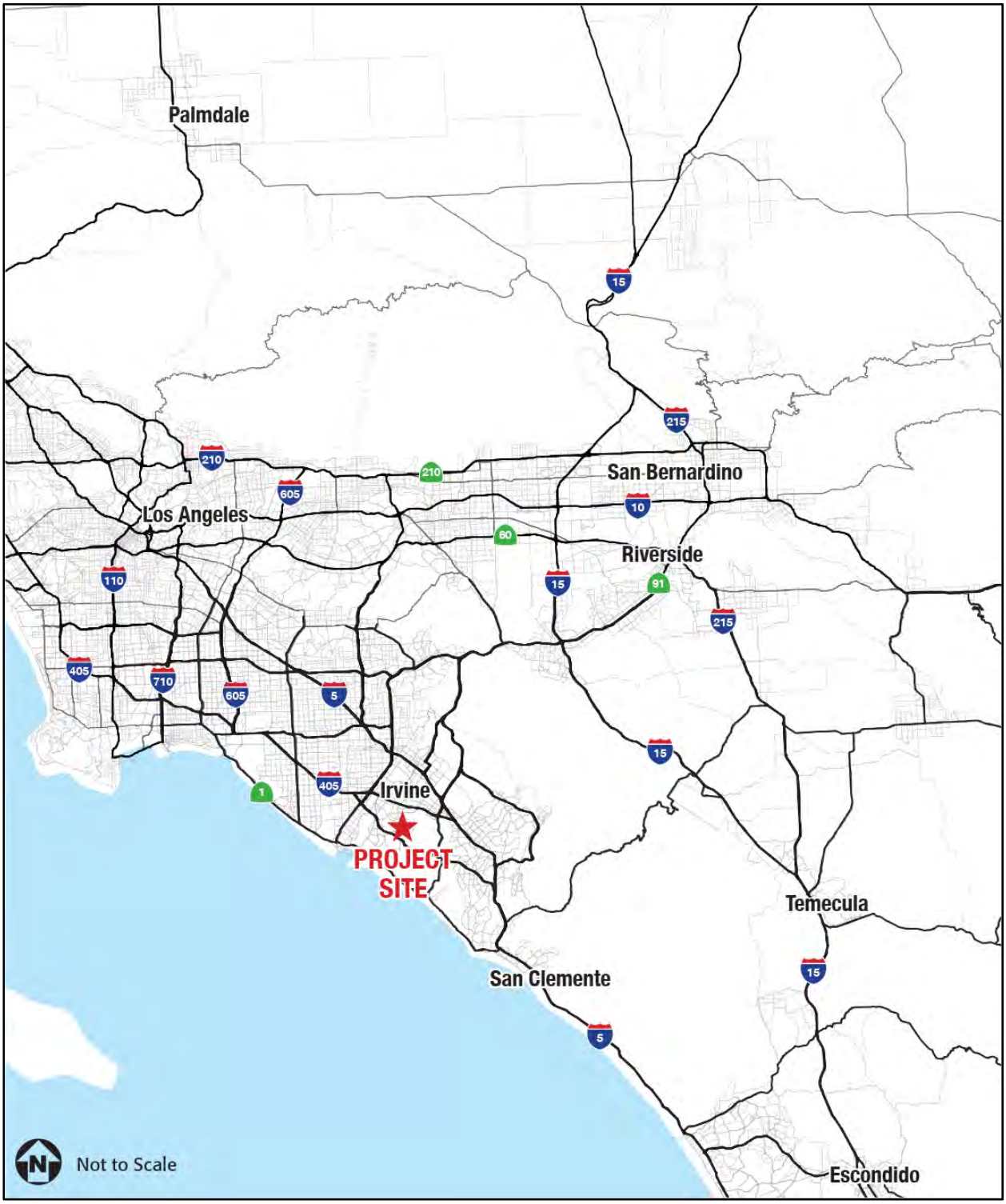

Exhibit 2: Site Vicinity

Source: Google Maps, 2019.

Exhibit 3: Site Plan

2 ENVIRONMENTAL SETTING

2.1 CLIMATE AND METEOROLOGY

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The proposed Project is located within the 6,645-square-mile South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, as well as all of Orange County. The SCAB is on a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the southwest and high mountains forming the remainder of the perimeter[1]. The SCAB's air quality is determined by natural factors such as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

The SCAB is part of a semi-permanent high-pressure zone in the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. This usually mild weather pattern is occasionally interrupted by periods of extreme heat, winter storms, and Santa Ana winds. The annual average temperature throughout the SCAB ranges from low 60 to high 80 degrees Fahrenheit with little variance. With more oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

Contrasting the very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rainfall occurs between the months of November and April. Summer rainfall is reduced to widely scattered thundershowers near the coast, with slightly heavier activity in the east and over the mountains.

Although the SCAB has a semiarid climate, the air closer to the Earth's surface is typically moist because of the presence of a shallow marine layer. Except for occasional periods when dry, continental air is brought into the SCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog are frequent and low clouds known as high fog are characteristic climatic features, especially along the coast. Annual average humidity is 70 percent at the coast and 57 percent in the SCAB's eastern portions.

Wind patterns across the SCAB are characterized by westerly or southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is typically higher during the dry summer months than during the rainy winter.

Between periods of wind, air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During winter and fall, surface high-pressure systems over the SCAB, combined with other meteorological conditions, result in very strong, downslope Santa Ana winds. These winds normally continue for a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. The SCAB's air quality generally ranges from fair to poor and is like air quality in most of coastal

[1] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

In addition to the characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which air pollutants are mixed. These inversions are the marine inversion and the radiation inversion. The height of the base of the inversion at any given time is called the "mixing height." The combination of winds and inversions is a critical determinant leading to highly degraded air quality for the SCAB in the summer and generally good air quality in the winter.

2.2 AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants.

Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are primary air pollutants. Of these, CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. For example, the criteria pollutant ozone (O_3) is formed by a chemical reaction between ROG and NO_X in the presence of sunlight. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in Table 1: Air Contaminants and Associated Public Health Concerns.

Table 1: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC)[1] and nitrogen oxides (NO_X) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Table 1: Air Contaminants and Associated Public Health Concerns (continued)

Pollutant	Major Man-Made Sources	Human Health Effects
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

Notes:
[1] Volatile Organic Compounds (VOCs or ROGs) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including 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).

Source: California Air Pollution Control Officers Association, *Health Effects*, http://www.capcoa.org/health-effects/, Accessed December 4, 2018.

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes more than 200 compounds, including particulate emissions from diesel-fueled engines.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and trapped in the bronchial and alveolar regions of the lung.

Ambient Air Quality

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Existing levels of

ambient air quality, historical trends, and projections near the Project site are documented by measurements made by the South Coast Air Quality Management District (SCAQMD), the SCAB's air pollution regulatory agency that maintains air quality monitoring stations, which process ambient air quality measurements.

Ozone (O_3), Nitrogen Dioxide (NO_2), and particulate matter (PM_{10} and $PM_{2.5}$) are pollutants of concern in the SCAB. The closest air monitoring station to the proposed Project site that monitors ambient concentrations for O_3 and NO_2 is the Costa Mesa – Mesa Verde Drive Monitoring Station (located approximately 4.7 miles northwest of the Project). The closest monitoring station that measures PM_{10} and $PM_{2.5}$ is the Mission Viejo – 26081 Via Pera Monitoring Station (located approximately 10.2 miles east of the Project). Local air quality data from 2015 to 2017 are provided in Table 2: Ambient Air Quality Data. Table 2 lists the monitored maximum concentrations and number of exceedances of federal or state air quality standards for each year.

Table 2: Ambient Air Quality Data

Pollutant	2015	2016	2017
Ozone (O_3)[1]			
1-hour Maximum Concentration (ppm)	0.099	0.090	0.088
8-hour Maximum Concentration (ppm)	0.079	0.068	0.075
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	1	0	0
NAAQS 8-hour (>0.070 ppm)	2	0	4
Carbon Monoxide (CO)[1]			
1-hour Maximum Concentration (ppm)	2.98	2.06	1.72
Number of Days Standard Exceeded			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0
Nitrogen Dioxide (NO_2)[1]			
1-hour Maximum Concentration (ppm)	52.4	59.8	45.3
Number of Days Standard Exceeded			
NAAQS 1-hour (>100 ppm)	52	51	–
CAAQS 1-hour (>0.18 ppm)	60	60	60
Particulate Matter Less Than 10 Microns (PM_{10})[2]			
National 24-hour Maximum Concentration	49.0	59.0	58.2
State 24-hour Maximum Concentration	48.0	59.3	58.2
State Annual Average Concentration (20 µg/m^3)	–	–	18.8
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	–	0	0
CAAQS 24-hour (>50 µg/m^3)	–	–	7
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)[2]			
National 24-hour Maximum Concentration	31.5	24.7	19.5
State 24-hour Maximum Concentration	31.5	24.7	19.5
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 µg/m^3)	0	0	–

Notes: NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m^3 = micrograms per cubic meter; NM = not measured

[1] Measurements at Costa Mesa – Mesa Verde Drive Monitoring Station, 2850 Mesa Verde Drive East, Costa Mesa, CA 92626 (CARB# 70112).

[2] Measurements at Mission Viejo – 26081 Via Pera Monitoring Station, 26081 Via Pera, Mission Viejo, CA 92691 (CARB# 30002).

Source: Pollutant measurements from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam).

2.3 SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors in proximity to localized sources of toxics 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. Sensitive land uses surrounding the Project site consist mostly of low to medium-high density residences, educational institutions, and recreational facilities. Table 3: Sensitive Receptors, lists the distances and locations of sensitive receptors within the Project vicinity.

Table 3: Sensitive Receptors

Receptor Type/Description	Distance and Direction from the Project Site
UCI Educational Facilities	Adjacent to the north
UCI Campus Village Housing	800 feet to the northeast
UCI Health Gottschalk Medical Plaza	1,180 feet to the north
UCI Ayala Science Library	1,670 feet to the northeast
Crawford Field	1,690 feet to the northeast
Crawford Pool	2,130 feet to the northeast
Single-Family Residences	2,240 feet to the southwest
Anteater Stadium	2,330 feet to the north
Aldrich Park	2,370 feet to the northeast
Newport Bluffs Apartments	2,400 feet to the southwest

3 REGULATORY SETTING

3.1 FEDERAL

Federal Clean Air Act

Air quality is federally protected by the Federal Clean Air Act (FCAA) and its amendments. Under the FCAA, the EPA developed the primary and secondary National Ambient Air Quality Standards (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 FCAA requires that each state prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The U.S. Environmental Protection Agency (EPA) can withhold certain transportation funds from states that fail to comply with the FCAA's planning requirements. 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 Code of Federal Regulations 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. Applicable federal standards are summarized in Table 4: State and Federal Ambient Air Quality Standards.

3.2 STATE OF CALIFORNIA

California Air Resources Board

CARB administers California's air quality policy. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The applicable State standards are summarized in Table 4.

Table 4: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]	Federal Standards[2]
Ozone (O_3) [2, 5, 7]	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm
	1 Hour	0.09 ppm (180 µg/m^3)	NA
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.10 ppm[11]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2) [8]	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)
	Annual Arithmetic Mean	NA	0.03 ppm (80 µg/m^3)
Particulate Matter (PM_{10}) [1, 3, 6]	24-Hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	NA
Fine Particulate Matter ($PM_{2.5}$) [3, 4, 6, 9]	24-Hour	NA	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
Sulfates (SO_{4-2})	24 Hour	25 µg/m^3	NA
Lead (Pb) [10, 11]	30-Day Average	1.5 µg/m^3	NA
	Calendar Quarter	NA	1.5 µg/m^3
	Rolling 3-Month Average	NA	0.15 µg/m^3
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (0.15 µg/m^3)	NA
Vinyl Chloride (C_2H_3Cl) [10]	24 Hour	0.01 ppm (26 µg/m^3)	NA

Notes:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; – = no information available

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. Measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe carbon monoxide standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

[2] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m$_3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3.

[3] Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard. NAAQS are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

[4] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

[5] The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.

[6] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[7] The 8-hour California ozone standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006.

[8] On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO_2 NAAQS.

[9] In December 2012, EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

[10] CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure below which there are no adverse health effects determined.

[11] National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; California Air Resources Board, *Ambient Air Quality Standards*, May 6, 2016.

3.3 REGIONAL

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino Counties. The agency's primary responsibility is ensuring that federal and state ambient air quality standards are attained and maintained in the SCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The SCAQMD is also the lead agency in charge of developing the AQMP, with input from the Southern California Association of Governments (SCAG) and CARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB, in coordination with federal agencies, provides the control element for mobile sources.

The 2016 AQMP was adopted by the SCAQMD Governing Board on March 3, 2017. The purpose of the AQMP is to set forth a comprehensive and integrated program that would lead the SCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to update the SCAQMD's commitments towards meeting the federal 8-hour ozone standards. The AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2016 *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and updated emission inventory methodologies for various source categories.

The SCAQMD has published the *CEQA Air Quality Handbook* (approved by the SCAQMD Governing Board in 1993 and augmented with guidance for Local Significance Thresholds [LST] in 2008). The SCAQMD guidance helps local government agencies and consultants develop environmental documents required by California Environmental Quality Act (CEQA) and identifies thresholds of significance for criteria pollutants for both construction and operation (see discussion of thresholds below). With the help of the *CEQA Air Quality Handbook* and associated guidance, local land use planners and consultants can analyze and document how existing and proposed projects affect air quality, in order to meet the CEQA review process requirements. The SCAQMD periodically provides supplemental guidance and updates to the handbook on their website.

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. Under federal law, SCAG is designated as a Metropolitan Planning Organization and under state law as a Regional Transportation Planning Agency and a Council of Governments.

The state and national attainment status designations for the SCAB are summarized in Table 5: South Coast Air Basin Attainment Status. The SCAB is currently designated as a nonattainment area concerning the state ozone, PM_{10}, and $PM_{2.5}$ standards, as well as the national 8-hour ozone and $PM_{2.5}$ standards. The SCAB is designated as attainment or unclassified for the remaining state and federal standards.

Table 5: South Coast Air Basin Attainment Status		
Pollutant	**Federal**	**State**
Ozone (O_3) (1 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Ozone (O_3) (8 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Particulate Matter ($PM_{2.5}$) (24 Hour Standard)	Non-Attainment (Serious)	--
Particulate Matter ($PM_{2.5}$) (Annual Standard)	Non-Attainment (Moderate)	Non-Attainment
Particulate Matter (PM_{10}) (24 Hour Standard)	Attainment (Maintenance)	Non-Attainment
Particulate Matter (PM_{10}) (Annual Standard)	--	Non-Attainment
Carbon Monoxide (CO) (1 Hour Standard)	Attainment (Maintenance)	Attainment
Carbon Monoxide (CO) (8 Hour Standard)	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Nitrogen Dioxide (NO_2) (Annual Standard)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Sulfur Dioxide (SO_2) (24 Hour Standard)	--	Attainment
Lead (Pb) (30 Day Standard)	Unclassifiable/Attainment	--
Lead (Pb) (3 Month Standard)	--	Attainment
Sulfates (SO_{4-2}) (24 Hour Standard)	--	Attainment
Hydrogen Sulfide (H_2S) (1 Hour Standard)	--	Unclassified

Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; U.S. EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, January 31, 2019.

The following is a list of SCAQMD rules that are required of construction activities associated with the proposed Project:

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression Best Available Control Measures are summarized below.

a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.

b) All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.

c) All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.

d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

3.4 LOCAL

Environmental Health and Safety Department

UCI's Environmental Health and Safety (EHS) Department is responsible for implementing the UCI Clean Air Program which facilitates 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 that meets 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, 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 EHS and maintaining records. The Facilities Management and the Design and Construction Services departments provide building and renovation plans to EHS for review and report new air emission sources to EHS. The Parking and Transportation Services department, while not directly involved with the Clean Air Program, reduces air emissions by implementing the Alternative Transportation Program to reduce vehicular traffic and associated emissions.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 AIR QUALITY THRESHOLDS

Based upon the criteria derived from CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- 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;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

South Coast Air Quality Management District Thresholds

The SCAQMD significance criteria may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if a proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality during project construction and operations, as shown in Table 6: South Coast Air Quality Management District Emissions Thresholds.

Table 6: South Coast Air Quality Management District Emissions Thresholds

Criteria Air Pollutants and Precursors (Regional)	Construction-Related Average Daily Emissions (pounds/day)	Operational-Related Average Daily Emission (pounds/day)
Reactive Organic Gases (ROG)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_X)	100	55
Sulfur Oxides (SO_X)	150	150
Coarse Particulates (PM_{10})	150	150
Fine Particulates ($PM_{2.5}$)	55	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook,* 1993 ($PM_{2.5}$ threshold adopted June 1, 2007).

Localized Carbon Monoxide

In addition to the daily thresholds listed above, the proposed Project would be subject to the ambient air quality standards. These are addressed through an analysis of localized CO impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 ppm
- 8-hour = 9 ppm

The significance of localized impacts depends on whether ambient CO levels near the Project site are above State and Federal CO standards. The SCAB has been designated as attainment under the 1-hour and 8-hour standards.

Localized Significance Thresholds

In addition to the CO hotspot analysis, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at new development sites (off-site mobile source emissions are not included in the LST analysis). LSTs represent the maximum emissions that can be generated at a project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or state ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb 5.0 acres or less on a single day. The Project is located within SCAQMD SRA 20 (Central Orange County Coastal). Table 7: Local Significance Thresholds (Construction/Operations), shows the LSTs for a 1-acre, 2-acre, and 5-acre project site in SRA 20 with sensitive receptors located within 25 meters of the Project site.

Table 7: Local Significance Thresholds (Construction/Operations)

Project Size	Nitrogen Oxide (NO_x) – lbs/day	Carbon Monoxide (CO) – lbs/day	Coarse Particulates (PM_{10}) – lbs/day	Fine Particulates ($PM_{2.5}$) – lbs/day
1 Acre	92/92	639/639	4/1	3/1
2 Acres	131/131	945/945	7/2	5/2
5 Acres	197/197	1,711/1,711	14/4	9/2

Source: South Coast Air Quality Management District, *Localized Significance Threshold Methodology,* July 2008.

4.2 METHODOLOGY

This air quality impact analysis considers construction and operational impacts associated with the proposed Project. Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with proposed Project construction would generate emissions of criteria air pollutants and precursors. Air quality impacts were assessed according to CARB and SCAQMD recommended methodologies. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 AIR QUALITY ANALYSIS

Threshold 5.1 Would the Project conflict with or obstruct implementation of the applicable air quality plan?

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Project site is located within the SCAB, which is under SCAQMD's jurisdiction. The SCAQMD is required, pursuant to the FCAA, to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. To reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State (California) and Federal air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the CARB, the SCAG, and the EPA. The AQMP's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The Project is subject to the SCAQMD's AQMP. Criteria for determining consistency with the AQMP are defined by the following indicators:

- **Consistency Criterion No. 1**: The Project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of the AQMP's air quality standards or the interim emissions reductions.
- **Consistency Criterion No. 2**: The Project would not exceed the AQMP's assumptions or increments based on the years of the Project build-out phase.

The violations to which Consistency Criterion No. 1 refers are CAAQS and NAAQS. As shown in Table 8 and Table 9 below, the Project would not exceed the short-term construction standards or long-term operational standards and would therefore not violate any air quality standards. Thus, no impact is expected, and the Project would be consistent with the first criterion.

Concerning Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The proposed Project is consistent with the goals of the UCI *Long Range Development Plan*[2] (LRDP) and *Strategic Plan*[3] and would not require a zone change

[2] University of California, Irvine, *Long Range Development Plan*, 2007.
[3] University of California, Irvine, *Strategic Plan*, 2016.

or a City of Irvine *General Plan* (IGP) amendment. Figure 5-2 of the LRDP shows the Project site as designated as Income-Producing Inclusion Area. The proposed Project is consistent with the primary uses allowed under Income-Producing Inclusion Area land use category, which include office space, research and development uses, commercial and retail space, conference facilities, research facilities, clinical uses, multi-purpose facilities (e.g., auditoriums, arenas), and other commercial or non-profit facilities. Additionally, Figure A-3 in the IGP Land Use Element shows the Project site in an Institutional land use zone suitable for public and educational facilities. The Project's forecast population growth would be nominal and is already anticipated in the IGP (and accordingly the projections within the AQMP). Additionally, it would not cause the SCAQMD's population or job growth projections used to develop the AQMP to be exceeded. Thus, a less than significant impact would occur, as the Project is also consistent with the second criterion.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.2 Would the Project 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?

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the Project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Construction results in the temporary generation of emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

The duration of construction activities associated with the proposed Project are estimated to last up to 26 months. The Project is anticipated to require a net cut of approximately 9,784 cubic yards (CY) of soil. Construction-related emissions were calculated using CalEEMod, which is designed to model emissions for land use development projects, based on typical construction requirements. See Appendix A: Air Quality Data for more information regarding the construction assumptions used in this analysis. The Project's predicted maximum daily construction-related emissions are summarized in Table 8: Construction-Related Emissions. As shown in Table 8, all criteria pollutant emissions would remain below their respective thresholds. While impacts would be considered less than significant, the proposed Project would be subject to compliance with SCAQMD Rules 402, 403, and 1113, described in the Regulatory Setting – Regional section above, to further reduce specific construction-related emissions.

Table 8: Construction-Related Emissions (Maximum Pounds Per Day)						
Construction Year	**Reactive Organic Gases (ROG)**	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Sulfur Dioxide (SO_2)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
2020	4.81	59.98	35.12	0.09	10.11	6.32
2021	21.64	26.00	25.38	0.07	3.83	1.70
2022	21.61	11.16	15.00	0.02	0.73	0.57
SCAQMD Threshold	*75*	*100*	*550*	*150*	*55*	*150*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Notes: SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include 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. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.						
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Operational Emissions

The Project's operational emissions would be associated with motor vehicle use and area sources, such as the use of landscape maintenance equipment and architectural coatings. Long-term operational emissions attributable to the proposed Project are summarized in Table 9: Long-Term Operational Emissions. Note that emissions rates differ from summer to winter because weather factors are dependent on the season and these factors affect pollutant mixing, dispersion, ozone formation, and other factors. As shown in Table 9**,** the Project's operational emissions would not exceed SCAQMD thresholds for any criteria air pollutants. Therefore, the Project's operational emissions would result in a less than significant long-term regional air quality impact.

Table 9: Long-Term Operational Emissions (Maximum Pounds Per Day)						
Source	**Reactive Organic Gases (ROG)**	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Sulfur Dioxide (SO_2)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Summer Emissions						
Area Source Emissions	5.05	0.00	0.07	0.00	0.00	0.00
Energy Emissions	0.13	1.21	1.01	0.00	0.09	0.09
Mobile Emissions	1.51	6.20	21.74	0.09	7.96	2.17
Total Emissions	**6.70**	**7.41**	**22.82**	**0.09**	**8.05**	**2.26**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area Source Emissions	5.05	0.00	0.07	0.00	0.00	0.00
Energy Emissions	0.13	1.21	1.01	0.00	0.09	0.09
Mobile Emissions	1.49	6.39	20.65	0.08	7.96	2.17
Total Emissions	**6.67**	**7.60**	**21.73**	**0.09**	**8.05**	**2.26**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Area Source Emissions

Area Source Emissions would be generated due to consumer products, architectural coating, and landscaping that were previously not present on the site. As shown in Table 9, the Project's unmitigated area source emissions would not exceed SCAQMD thresholds for either the winter or summer seasons. Therefore, mitigation measures are not required, and a less than significant impact is anticipated.

Energy Source Emissions

Energy source emissions would be generated due to the Project's electricity and natural gas usage. The Project's primary uses of electricity and natural gas would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 9, the Project's unmitigated energy source emissions would not exceed SCAQMD thresholds for criteria pollutants. As such, the Project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, the Project's operational air quality impacts would be less than significant.

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, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern. NO_X and ROG react with sunlight to form O_3, known as photochemical smog. Additionally, wind currents readily transport PM_{10} and $PM_{2.5}$. However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions were estimated using CalEEMod, as recommended by the SCAQMD. The Project's trip generation estimates were based on trip generation rates from the Project Traffic Study. The Project would generate 969 average daily trips (ADT). As shown in Table 9, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, impacts associated with mobile source emissions would be less than significant.

Cumulative Construction Emissions

The SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the Project's construction-related emissions by themselves would not exceed the SCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether individual Project emissions have the potential to affect cumulative regional air quality, it can be expected that the Project-related construction emissions would not be cumulatively considerable. The SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal Clean Air Act mandates. The analysis assumed fugitive dust controls would be utilized during construction, including frequent water applications. SCAQMD rules, mandates, and compliance with adopted AQMP emissions control measures would also be imposed on construction projects throughout the SCAB, which would include related cumulative projects. As concluded above, the Project's construction-related impacts would be less than significant. Compliance with SCAQMD rules and regulations would further minimize the proposed Project's construction-related emissions. Therefore, Project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality. The

Project's construction-related emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Operational Impacts

The SCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, individual project emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the operational thresholds of significance based on the level above which individual project emissions would result in a cumulatively considerable contribution to the SCAB's existing air quality conditions. Therefore, a project that exceeds the SCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in Table 9, the Project's operational emissions would not exceed SCAQMD thresholds. As a result, the Project's operational emissions would not result in cumulatively considerable contribution to significant cumulative air quality impacts. Adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Project operations would not contribute cumulatively considerable net increase of nonattainment criteria pollutants.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.3 Would the Project expose sensitive receptors to substantial pollutant concentrations?

Localized Construction Significance Analysis

The nearest sensitive receptors to the Project site are the UCI educational facilities adjacent to the Project property line, located approximately 30 feet (9 meters) to the north. To identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. 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 impacts from Project-specific emissions.

Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 10: Equipment-Specific Grading Rates, is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate SRA for the localized significance thresholds is the Central Orange County Coastal area (SRA 20) since this area includes the Project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced look-up tables for projects that disturb areas less than or equal to 5 acres. Project construction is anticipated to disturb a maximum of 3.5 acre in a single day.

Table 10: Equipment-Specific Grading Rates					
Construction Phase	**Equipment Type**	**Equipment Quantity**	**Acres Graded per 8-Hour Day**	**Operating Hours per Day**	**Acres Graded per Day**
Grading	Graders	1	0.5	8	0.5
	Dozers	1	0.5	8	0.5
	Scrapers	1	1.0	8	1.0
	Tractors/Loaders/Backhoes	3	0.5	8	1.5
				Total Acres Graded per Day	**3.5**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.					

The SCAQMD's methodology states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs." Therefore, for the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest sensitive receptors to the Project site are the UCI educational facilities located approximately 30 feet (9 meters) to the north. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 25 meters were utilized in this analysis for receptors closer than 25 meters. Table 11: Localized Significance of Construction Emissions, presents the results of localized emissions during Project construction.

Table 11: Localized Significance of Construction Emissions (Maximum Pounds Per Day)				
Construction Activity	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Demolition	33.20	21.75	1.66	1.54
Site Preparation	42.42	21.51	9.92	6.27
Grading	50.20	31.96	5.90	3.54
Building Construction	19.19	16.85	1.12	1.05
Paving	11.12	14.58	0.57	0.52
Architectural Coating	1.41	1.81	0.08	0.08
SCAQMD Localized Screening Threshold (3.5 acres at 25 meters)	*164*	*1,328*	*11*	*7*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

Table 11 shows that the emissions of these pollutants on the peak day of Project construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the Project would result in a less than significant impact concerning LSTs during construction activities.

Localized Operational Significance Analysis

LSTs for receptors located at 25 meters for SRA 20 were utilized in this analysis. As the Project site is 11.4 acres, the 5-acre LST threshold was conservatively used. The five-acre localized significance threshold is conservative as the thresholds increase with project size. The on-site operational emissions are compared to the LST thresholds in Table 12: Localized Significance of Operational Emissions. Table 12 shows that the maximum daily emissions of on-site pollutants during Project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the Project would result in a less than significant impact concerning LSTs during operational activities.

Table 12: Localized Significance of Operational Emissions (Maximum Pounds Per Day)				
Activity	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Area Sources	0.00	0.07	0.00	0.00
SCAQMD Localized Screening Threshold (adjusted for 5 acres at 25 meters)	*197*	*1,711*	*4*	*2*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

Criteria Pollutant Health Impacts

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (*Sierra Club v. County of Fresno* [Friant Ranch, L.P.] [2018] Cal.5th, Case No. S219783).

As previously discussed, Project emissions would be less than significant and would not exceed SCAQMD thresholds (refer to Table 8 and Table 9). Localized effects of on-site project emissions on nearby receptors were also found to be less than significant (refer to Table 11 and Table 12). The LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect public health, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. As shown above, project-related emissions would not exceed the regional thresholds or the LSTs, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based ambient air quality standards.

Carbon Monoxide Hotspots

An analysis of CO "hot spots" is needed to determine whether the change in the level of service of an intersection resulting from the proposed Project would have the potential to result in exceedances of the CAAQS or NAAQS. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The SCAB was re-designated as attainment in 2007 and is no longer addressed in the SCAQMD's AQMP. The 2003 AQMP is the most recent version that addresses CO concentrations. As part of the SCAQMD *CO Hotspot Analysis*, the Wilshire Boulevard/Veteran Avenue intersection, one of the most congested intersections in Southern California with approximately 100,000 ADT, was modeled for CO concentrations. This modeling effort identified a CO concentration high of 4.6

ppm, which is well below the 35-ppm Federal standard. The proposed Project considered herein would not produce the volume of traffic required to generate a CO hot spot in the context of SCAQMD's *CO Hotspot Analysis*. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection even as it accommodates 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any intersections in the Project vicinity resulting from 969 ADT attributable to the Project. Therefore, impacts would be less than significant.

Construction-Related Diesel Particulate Matter

Project construction would generate DPM emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

The use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and exhaust from construction equipment would dissipate rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The closest sensitive receptors to the Project site are located approximately 30 feet from the Project limits, and further from the major Project construction areas.

California Office of Environmental Health Hazard Assessment has not identified short-term health effects from DPM. Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time. Construction activities would be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than five minutes to further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. For these reasons, DPM generated by Project construction activities, in and of itself, would not expose sensitive receptors to substantial amounts of air toxics and the Project would result in a less than significant impact.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.4 Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The SCAQMD *CEQA Air Quality Handbook* identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Project would not include any of the land uses that have been identified by the SCAQMD as odor sources.

During construction-related activities, some odors (not substantial pollutant concentrations) that may be detected are those typical of construction vehicles (e.g., diesel exhaust from grading and construction equipment). These odors are a temporary short-term impact that is typical of construction projects and would disperse rapidly. The project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, the proposed Project would not create objectionable odors.

Mitigation Measures: No mitigation is required.

Level of Significance: No impact.

6 REFERENCES

1. California Air Pollution Control Officers Association, *Health Effects*, 2018.
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3. California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from 2015 to 2017*, 2018.
4. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
5. California Air Resources Board, *Current Air Quality Standards*, 2016.
6. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, 2000.
7. City of Irvine, *General Plan*, 2015.
8. LPA, *Phase 1 Grading Exhibit Parking Estimate*, 2018.
9. Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, 2015.
10. Randy Morris Architect, *Site Plan & Driveway Elevations*, November 2018.
11. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
12. South Coast Air Quality Management District, *Air Quality Management Plan,* 2016.
13. South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
14. South Coast Air Quality Management District, *Localized Significance Threshold Methodology*, 2009.
15. State of California, Department of Finance, E-*5 Population and Housing Estimates for Cities, Counties and the State - January 1, 2011-2018*. Sacramento, California, May 2018.
16. University of California, Irvine, *Long Range Development Plan*, 2007.
17. University of California, Irvine, *Strategic Plan*, 2016.
18. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
19. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, 2018.
20. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.

Appendix A

Air Quality Modeling Data

UCI COHS - Orange County, Summer

UCI COHS

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	25.00	1000sqft	0.57	25,000.00	0
University/College (4Yr)	25.00	Employee	4.48	195,000.00	0
Other Asphalt Surfaces	103.00	1000sqft	2.36	103,000.00	0
Parking Lot	500.00	Space	4.50	200,000.00	0
City Park	0.05	Acre	0.05	2,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029-298*0.00617=546.4263 to avoid double counting

Land Use - anticipated square footage of buildings and parking areas per site plan

Construction Phase - anticipated construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Grading - anticipated earthwork

Vehicle Trips - based on ITE trip rates for Academic Use and Medical Clinic

Energy Use -

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Energy Mitigation - Latest building code plus LEED

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	18.00
tblGrading	MaterialExported	0.00	9,784.00
tblLandUse	LandUseSquareFeet	17,644.56	195,000.00
tblLandUse	LandUseSquareFeet	2,178.00	2,200.00
tblLandUse	LotAcreage	0.41	4.48
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	13.22	36.00

tblVehicleTrips	WD_TR	8.96	2.76

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					
2020	4.7908	59.8541	35.0407	0.0909	18.2675	2.2065	20.4662	9.9840	2.0311	12.0069	0.0000	9,204.7020	9,204.7020	2.2564	0.0000	9,261.1113
2021	21.6144	25.9762	25.3846	0.0711	2.9862	0.9912	3.9773	0.8044	0.9318	1.7362	0.0000	7,158.7627	7,158.7627	0.8464	0.0000	7,179.9226
2022	21.5913	11.1546	15.0057	0.0243	0.4918	0.5690	0.7366	0.1304	0.5235	0.5679	0.0000	2,359.6405	2,359.6405	0.7171	0.0000	2,377.5673
Maximum	**21.6144**	**59.8541**	**35.0407**	**0.0909**	**18.2675**	**2.2065**	**20.4662**	**9.9840**	**2.0311**	**12.0069**	**0.0000**	**9,204.7020**	**9,204.7020**	**2.2564**	**0.0000**	**9,261.1113**

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					
2020	4.7908	59.8541	35.0407	0.0909	7.9140	2.2065	10.1128	4.2962	2.0311	6.3190	0.0000	9,204.7020	9,204.7020	2.2564	0.0000	9,261.1113
2021	21.6144	25.9762	25.3846	0.0711	2.8356	0.9912	3.8267	0.7674	0.9318	1.6992	0.0000	7,158.7627	7,158.7627	0.8464	0.0000	7,179.9226
2022	21.5913	11.1546	15.0057	0.0243	0.4662	0.5690	0.7279	0.1241	0.5235	0.5658	0.0000	2,359.6405	2,359.6405	0.7171	0.0000	2,377.5673
Maximum	**21.6144**	**59.8541**	**35.0407**	**0.0909**	**7.9140**	**2.2065**	**10.1128**	**4.2962**	**2.0311**	**6.3190**	**0.0000**	**9,204.7020**	**9,204.7020**	**2.2564**	**0.0000**	**9,261.1113**

	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**	**48.42**	**0.00**	**41.75**	**52.49**	**0.00**	**40.02**	**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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Energy	0.1328	1.2070	1.0139	7.2400e-003		0.0917	0.0917		0.0917	0.0917		1,448.3803	1,448.3803	0.0278	0.0266	1,456.9873
Mobile	1.5149	6.2041	21.7407	0.0862	7.8986	0.0608	7.9594	2.1122	0.0566	2.1688		8,751.8605	8,751.8605	0.3432		8,760.4409
Total	**6.6992**	**7.4117**	**22.8214**	**0.0934**	**7.8986**	**0.1528**	**8.0514**	**2.1122**	**0.1486**	**2.2607**		**10,200.3838**	**10,200.3838**	**0.3714**	**0.0266**	**10,217.5806**

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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Energy	0.1039	0.9449	0.7938	5.6700e-003		0.0718	0.0718		0.0718	0.0718		1,133.9339	1,133.9339	0.0217	0.0208	1,140.6723
Mobile	1.5149	6.2041	21.7407	0.0862	7.8986	0.0608	7.9594	2.1122	0.0566	2.1688		8,751.8605	8,751.8605	0.3432		8,760.4409
Total	**6.6704**	**7.1496**	**22.6012**	**0.0918**	**7.8986**	**0.1329**	**8.0315**	**2.1122**	**0.1287**	**2.2408**		**9,885.9374**	**9,885.9374**	**0.3653**	**0.0208**	**9,901.2656**

	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	0.43	3.54	0.96	1.68	0.00	13.03	0.25	0.00	13.40	0.88	0.00	3.08	3.08	1.62	21.69	3.10

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	3/1/2020	3/31/2020	5	22	
2	Site Preparation	Site Preparation	4/1/2020	4/24/2020	5	18	
3	Grading	Grading	4/25/2020	6/12/2020	5	35	
4	Building Construction	Building Construction	6/13/2020	10/15/2021	5	350	
5	Paving	Paving	10/16/2022	12/2/2022	5	35	
6	Architectural Coating	Architectural Coating	12/3/2021	4/21/2022	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 6.86

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 330,000; Non-Residential Outdoor: 110,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40

Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,223.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	218.00	86.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	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 - 2020

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	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0576	0.0363	0.4910	1.6400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0576**	**0.0363**	**0.4910**	**1.6400e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**163.5065**	**163.5065**	**3.7300e-003**		**163.5997**

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	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0576	0.0363	0.4910	1.6400e-003	0.1589	1.1100e-003	0.1600	0.0423	1.0200e-003	0.0433		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0576**	**0.0363**	**0.4910**	**1.6400e-003**	**0.1589**	**1.1100e-003**	**0.1600**	**0.0423**	**1.0200e-003**	**0.0433**		**163.5065**	**163.5065**	**3.7300e-003**		**163.5997**

3.3 Site Preparation - 2020

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975

Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0692	0.0436	0.5892	1.9700e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

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					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.7233**	**2.1974**	**9.9207**	**4.2454**	**2.0216**	**6.2670**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0692	0.0436	0.5892	1.9700e-003	0.1907	1.3300e-003	0.1920	0.0508	1.2300e-003	0.0520		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.1907**	**1.3300e-003**	**0.1920**	**0.0508**	**1.2300e-003**	**0.0520**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

3.4 Grading - 2020

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					8.7050	0.0000	8.7050	3.6013	0.0000	3.6013			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7050**	**2.1739**	**10.8789**	**3.6013**	**2.0000**	**5.6013**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.2639	9.6082	2.4278	0.0268	0.6084	0.0311	0.6395	0.1666	0.0298	0.1963		2,980.8280	2,980.8280	0.3090		2,988.5526
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	0.0769	0.0484	0.6547	2.1900e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		218.0087	218.0087	4.9700e-003		218.1330
Total	**0.3407**	**9.6566**	**3.0824**	**0.0289**	**0.8320**	**0.0326**	**0.8646**	**0.2258**	**0.0311**	**0.2570**		**3,198.8367**	**3,198.8367**	**0.3140**		**3,206.6856**

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					3.7214	0.0000	3.7214	1.5396	0.0000	1.5396			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.7214**	**2.1739**	**5.8953**	**1.5396**	**2.0000**	**3.5395**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.2639	9.6082	2.4278	0.0268	0.5807	0.0311	0.6118	0.1598	0.0298	0.1895		2,980.8280	2,980.8280	0.3090		2,988.5526
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	0.0769	0.0484	0.6547	2.1900e-003	0.2119	1.4800e-003	0.2134	0.0564	1.3600e-003	0.0578		218.0087	218.0087	4.9700e-003		218.1330

Total	**0.3407**	**9.6566**	**3.0824**	**0.0289**	**0.7926**	**0.0326**	**0.8252**	**0.2162**	**0.0311**	**0.2473**		**3,198.8367**	**3,198.8367**	**0.3140**		**3,206.6856**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.2747	8.9593	2.3647	0.0214	0.5495	0.0468	0.5962	0.1581	0.0447	0.2028		2,331.7088	2,331.7088	0.1886		2,336.4234
Worker	0.8378	0.5278	7.1357	0.0238	2.4367	0.0161	2.4528	0.6462	0.0148	0.6611		2,376.2951	2,376.2951	0.0542		2,377.6493
Total	**1.1125**	**9.4871**	**9.5004**	**0.0453**	**2.9862**	**0.0629**	**3.0491**	**0.8044**	**0.0596**	**0.8639**		**4,708.0039**	**4,708.0039**	**0.2428**		**4,714.0728**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.2747	8.9593	2.3647	0.0214	0.5259	0.0468	0.5727	0.1524	0.0447	0.1971		2,331.7088	2,331.7088	0.1886		2,336.4234
Worker	0.8378	0.5278	7.1357	0.0238	2.3096	0.0161	2.3257	0.6150	0.0148	0.6299		2,376.2951	2,376.2951	0.0542		2,377.6493
Total	**1.1125**	**9.4871**	**9.5004**	**0.0453**	**2.8356**	**0.0629**	**2.8984**	**0.7674**	**0.0596**	**0.8269**		**4,708.0039**	**4,708.0039**	**0.2428**		**4,714.0728**

3.5 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	0.2295	8.0680	2.1881	0.0212	0.5495	0.0168	0.5662	0.1581	0.0160	0.1741		2,311.6155	2,311.6155	0.1813		2,316.1471
Worker	0.7868	0.4761	6.6213	0.0230	2.4367	0.0158	2.4525	0.6462	0.0145	0.6608		2,293.7833	2,293.7833	0.0491		2,295.0113
Total	**1.0163**	**8.5441**	**8.8094**	**0.0442**	**2.9862**	**0.0325**	**3.0187**	**0.8044**	**0.0306**	**0.8349**		**4,605.3988**	**4,605.3988**	**0.2304**		**4,611.1583**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	0.2295	8.0680	2.1881	0.0212	0.5259	0.0168	0.5427	0.1523	0.0160	0.1684		2,311.6155	2,311.6155	0.1813		2,316.1471
Worker	0.7868	0.4761	6.6213	0.0230	2.3096	0.0158	2.3254	0.6150	0.0145	0.6296		2,293.7833	2,293.7833	0.0491		2,295.0113
Total	**1.0163**	**8.5441**	**8.8094**	**0.0442**	**2.8356**	**0.0325**	**2.8681**	**0.7674**	**0.0306**	**0.7979**		**4,605.3988**	**4,605.3988**	**0.2304**		**4,611.1583**

3.6 Paving - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.5135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6163**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0512	0.0297	0.4252	1.5200e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		151.9802	151.9802	3.0700e-003		152.0569
Total	**0.0512**	**0.0297**	**0.4252**	**1.5200e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**151.9802**	**151.9802**	**3.0700e-003**		**152.0569**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.5135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6163**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0512	0.0297	0.4252	1.5200e-003	0.1589	1.0600e-003	0.1600	0.0423	9.8000e-004	0.0433		151.9802	151.9802	3.0700e-003		152.0569
Total	**0.0512**	**0.0297**	**0.4252**	**1.5200e-003**	**0.1589**	**1.0600e-003**	**0.1600**	**0.0423**	**9.8000e-004**	**0.0433**		**151.9802**	**151.9802**	**3.0700e-003**		**152.0569**

3.7 Architectural Coating - 2021

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**21.4555**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.1588	0.0961	1.3364	4.6400e-003	0.4918	3.1800e-003	0.4950	0.1304	2.9300e-003	0.1334		462.9654	462.9654	9.9100e-003		463.2133
Total	**0.1588**	**0.0961**	**1.3364**	**4.6400e-003**	**0.4918**	**3.1800e-003**	**0.4950**	**0.1304**	**2.9300e-003**	**0.1334**		**462.9654**	**462.9654**	**9.9100e-003**		**463.2133**

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**21.4555**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.1588	0.0961	1.3364	4.6400e-003	0.4662	3.1800e-003	0.4694	0.1241	2.9300e-003	0.1271		462.9654	462.9654	9.9100e-003		463.2133
Total	**0.1588**	**0.0961**	**1.3364**	**4.6400e-003**	**0.4662**	**3.1800e-003**	**0.4694**	**0.1241**	**2.9300e-003**	**0.1271**		**462.9654**	**462.9654**	**9.9100e-003**		**463.2133**

3.7 Architectural Coating - 2022

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**21.4412**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.1501	0.0871	1.2473	4.4700e-003	0.4918	3.1200e-003	0.4949	0.1304	2.8700e-003	0.1333		445.8085	445.8085	9.0000e-003		446.0336
Total	**0.1501**	**0.0871**	**1.2473**	**4.4700e-003**	**0.4918**	**3.1200e-003**	**0.4949**	**0.1304**	**2.8700e-003**	**0.1333**		**445.8085**	**445.8085**	**9.0000e-003**		**446.0336**

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**21.4412**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.1501	0.0871	1.2473	4.4700e-003	0.4662	3.1200e-003	0.4693	0.1241	2.8700e-003	0.1270		445.8085	445.8085	9.0000e-003		446.0336
Total	**0.1501**	**0.0871**	**1.2473**	**4.4700e-003**	**0.4662**	**3.1200e-003**	**0.4693**	**0.1241**	**2.8700e-003**	**0.1270**		**445.8085**	**445.8085**	**9.0000e-003**		**446.0336**

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	1.5149	6.2041	21.7407	0.0862	7.8986	0.0608	7.9594	2.1122	0.0566	2.1688		8,751.8605	8,751.8605	0.3432		8,760.4409

Unmitigated	1.5149	6.2041	21.7407	0.0862	7.8986	0.0608	7.9594	2.1122	0.0566	2.1688		8,751.8605	8,751.8605	0.3432		8,760.4409

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hospital	900.00	254.50	222.75	2,756,573	2,756,573
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	69.00	78.00	0.00	181,521	181,521
Total	969.00	332.50	222.75	2,938,094	2,938,094

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hospital	16.60	8.40	6.90	64.90	16.10	19.00	73	25	2
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Hospital	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Other Asphalt Surfaces	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Parking Lot	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
University/College (4Yr)	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	0.1039	0.9449	0.7938	5.6700e-003		0.0718	0.0718		0.0718	0.0718		1,133.9339	1,133.9339	0.0217	0.0208	1,140.6723
NaturalGas Unmitigated	0.1328	1.2070	1.0139	7.2400e-003		0.0917	0.0917		0.0917	0.0917		1,448.3803	1,448.3803	0.0278	0.0266	1,456.9873

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					
City Park	0	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
Hospital	4121.23	0.0444	0.4040	0.3394	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.8509	484.8509	9.2900e-003	8.8900e-003	487.7322
Other Asphalt Surfaces	0	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
Parking Lot	0	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
University/College (4Yr)	8190	0.0883	0.8029	0.6745	4.8200e-003		0.0610	0.0610		0.0610	0.0610		963.5294	963.5294	0.0185	0.0177	969.2552

Total		**0.1328**	**1.2070**	**1.0139**	**7.2400e-003**		**0.0917**	**0.0917**		**0.0917**	**0.0917**		**1,448.3803**	**1,448.3803**	**0.0278**	**0.0266**	**1,456.9873**

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					
City Park	0	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
Hospital	3.07041	0.0331	0.3010	0.2529	1.8100e-003		0.0229	0.0229		0.0229	0.0229		361.2248	361.2248	6.9200e-003	6.6200e-003	363.3714
Other Asphalt Surfaces	0	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
Parking Lot	0	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
University/College (4Yr)	6.56803	0.0708	0.6439	0.5409	3.8600e-003		0.0489	0.0489		0.0489	0.0489		772.7091	772.7091	0.0148	0.0142	777.3009
Total		**0.1039**	**0.9449**	**0.7938**	**5.6700e-003**		**0.0718**	**0.0718**		**0.0718**	**0.0718**		**1,133.9339**	**1,133.9339**	**0.0217**	**0.0208**	**1,140.6723**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Unmitigated	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524

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	0.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.4634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2100e-003	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Total	**5.0515**	**6.1000e-004**	**0.0668**	**0.0000**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**		**0.1429**	**0.1429**	**3.8000e-004**		**0.1524**

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	0.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.4634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2100e-003	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524

Total	**5.0515**	**6.1000e-004**	**0.0668**	**0.0000**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**		**0.1429**	**0.1429**	**3.8000e-004**		**0.1524**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

UCI COHS

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	25.00	1000sqft	0.57	25,000.00	0
University/College (4Yr)	25.00	Employee	4.48	195,000.00	0
Other Asphalt Surfaces	103.00	1000sqft	2.36	103,000.00	0
Parking Lot	500.00	Space	4.50	200,000.00	0
City Park	0.05	Acre	0.05	2,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029-298*0.00617=546.4263 to avoid double counting

Land Use - anticipated square footage of buildings and parking areas per site plan

Construction Phase - anticipated construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Grading - anticipated earthwork

Vehicle Trips - based on ITE trip rates for Academic Use and Medical Clinic

Energy Use -

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Energy Mitigation - Latest building code plus LEED

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	18.00
tblGrading	MaterialExported	0.00	9,784.00
tblLandUse	LandUseSquareFeet	17,644.56	195,000.00
tblLandUse	LandUseSquareFeet	2,178.00	2,200.00
tblLandUse	LotAcreage	0.41	4.48
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	13.22	36.00

tblVehicleTrips	WD_TR	8.96	2.76

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					
2020	4.8074	59.9799	35.1195	0.0904	18.2675	2.2071	20.4662	9.9840	2.0317	12.0069	0.0000	9,148.0182	9,148.0182	2.2635	0.0000	9,204.6046
2021	21.6353	26.0043	25.0855	0.0694	2.9862	0.9918	3.9780	0.8044	0.9324	1.7368	0.0000	6,979.1035	6,979.1035	0.8526	0.0000	7,000.4191
2022	21.6116	11.1575	14.9723	0.0242	0.4918	0.5690	0.7366	0.1304	0.5235	0.5679	0.0000	2,351.5071	2,351.5071	0.7169	0.0000	2,369.4297
Maximum	**21.6353**	**59.9799**	**35.1195**	**0.0904**	**18.2675**	**2.2071**	**20.4662**	**9.9840**	**2.0317**	**12.0069**	**0.0000**	**9,148.0182**	**9,148.0182**	**2.2635**	**0.0000**	**9,204.6046**

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					
2020	4.8074	59.9799	35.1195	0.0904	7.9140	2.2071	10.1128	4.2962	2.0317	6.3190	0.0000	9,148.0182	9,148.0182	2.2635	0.0000	9,204.6046
2021	21.6353	26.0043	25.0855	0.0694	2.8356	0.9918	3.8273	0.7674	0.9324	1.6998	0.0000	6,979.1035	6,979.1035	0.8526	0.0000	7,000.4191
2022	21.6116	11.1575	14.9723	0.0242	0.4662	0.5690	0.7279	0.1241	0.5235	0.5658	0.0000	2,351.5071	2,351.5071	0.7169	0.0000	2,369.4297
Maximum	**21.6353**	**59.9799**	**35.1195**	**0.0904**	**7.9140**	**2.2071**	**10.1128**	**4.2962**	**2.0317**	**6.3190**	**0.0000**	**9,148.0182**	**9,148.0182**	**2.2635**	**0.0000**	**9,204.6046**

	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**	**48.42**	**0.00**	**41.75**	**52.49**	**0.00**	**40.02**	**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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Energy	0.1328	1.2070	1.0139	7.2400e-003		0.0917	0.0917		0.0917	0.0917		1,448.3803	1,448.3803	0.0278	0.0266	1,456.9873
Mobile	1.4886	6.3936	20.6539	0.0823	7.8986	0.0611	7.9597	2.1122	0.0568	2.1690		8,367.0278	8,367.0278	0.3412		8,375.5587
Total	**6.6729**	**7.6012**	**21.7345**	**0.0896**	**7.8986**	**0.1530**	**8.0516**	**2.1122**	**0.1488**	**2.2610**		**9,815.5511**	**9,815.5511**	**0.3694**	**0.0266**	**9,832.6984**

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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Energy	0.1039	0.9449	0.7938	5.6700e-003		0.0718	0.0718		0.0718	0.0718		1,133.9339	1,133.9339	0.0217	0.0208	1,140.6723
Mobile	1.4886	6.3936	20.6539	0.0823	7.8986	0.0611	7.9597	2.1122	0.0568	2.1690		8,367.0278	8,367.0278	0.3412		8,375.5587
Total	**6.6440**	**7.3391**	**21.5144**	**0.0880**	**7.8986**	**0.1331**	**8.0317**	**2.1122**	**0.1289**	**2.2411**		**9,501.1047**	**9,501.1047**	**0.3633**	**0.0208**	**9,516.3834**

	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	0.43	3.45	1.01	1.75	0.00	13.01	0.25	0.00	13.38	0.88	0.00	3.20	3.20	1.63	21.69	3.22

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	3/1/2020	3/31/2020	5	22	
2	Site Preparation	Site Preparation	4/1/2020	4/24/2020	5	18	
3	Grading	Grading	4/25/2020	6/12/2020	5	35	
4	Building Construction	Building Construction	6/13/2020	10/15/2021	5	350	
5	Paving	Paving	10/16/2022	12/2/2022	5	35	
6	Architectural Coating	Architectural Coating	12/3/2021	4/21/2022	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 6.86

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 330,000; Non-Residential Outdoor: 110,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40

Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,223.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	218.00	86.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	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 - 2020

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	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0651	0.0399	0.4538	1.5500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.0651**	**0.0399**	**0.4538**	**1.5500e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**154.7432**	**154.7432**	**3.5300e-003**		**154.8314**

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	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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	0.0651	0.0399	0.4538	1.5500e-003	0.1589	1.1100e-003	0.1600	0.0423	1.0200e-003	0.0433		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.0651**	**0.0399**	**0.4538**	**1.5500e-003**	**0.1589**	**1.1100e-003**	**0.1600**	**0.0423**	**1.0200e-003**	**0.0433**		**154.7432**	**154.7432**	**3.5300e-003**		**154.8314**

3.3 Site Preparation - 2020

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975

Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0782	0.0479	0.5446	1.8600e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

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					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.7233**	**2.1974**	**9.9207**	**4.2454**	**2.0216**	**6.2670**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0782	0.0479	0.5446	1.8600e-003	0.1907	1.3300e-003	0.1920	0.0508	1.2300e-003	0.0520		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.1907**	**1.3300e-003**	**0.1920**	**0.0508**	**1.2300e-003**	**0.0520**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

3.4 Grading - 2020

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					8.7050	0.0000	8.7050	3.6013	0.0000	3.6013			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7050**	**2.1739**	**10.8789**	**3.6013**	**2.0000**	**5.6013**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.2704	9.7292	2.5561	0.0263	0.6084	0.0317	0.6401	0.1666	0.0303	0.1969		2,935.8287	2,935.8287	0.3163		2,943.7370
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	0.0869	0.0532	0.6051	2.0700e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		206.3242	206.3242	4.7100e-003		206.4419
Total	**0.3573**	**9.7824**	**3.1612**	**0.0284**	**0.8320**	**0.0332**	**0.8651**	**0.2258**	**0.0317**	**0.2575**		**3,142.1529**	**3,142.1529**	**0.3210**		**3,150.1789**

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					3.7214	0.0000	3.7214	1.5396	0.0000	1.5396			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.7214**	**2.1739**	**5.8953**	**1.5396**	**2.0000**	**3.5395**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.2704	9.7292	2.5561	0.0263	0.5807	0.0317	0.6124	0.1598	0.0303	0.1901		2,935.8287	2,935.8287	0.3163		2,943.7370
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	0.0869	0.0532	0.6051	2.0700e-003	0.2119	1.4800e-003	0.2134	0.0564	1.3600e-003	0.0578		206.3242	206.3242	4.7100e-003		206.4419

Total	**0.3573**	**9.7824**	**3.1612**	**0.0284**	**0.7926**	**0.0332**	**0.8257**	**0.2162**	**0.0317**	**0.2479**		**3,142.1529**	**3,142.1529**	**0.3210**		**3,150.1789**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.2869	8.9563	2.5919	0.0209	0.5495	0.0476	0.5970	0.1581	0.0455	0.2036		2,274.4080	2,274.4080	0.1981		2,279.3605
Worker	0.9467	0.5800	6.5953	0.0226	2.4367	0.0161	2.4528	0.6462	0.0148	0.6611		2,248.9341	2,248.9341	0.0513		2,250.2169
Total	**1.2336**	**9.5363**	**9.1872**	**0.0435**	**2.9862**	**0.0637**	**3.0499**	**0.8044**	**0.0603**	**0.8647**		**4,523.3421**	**4,523.3421**	**0.2494**		**4,529.5774**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.2869	8.9563	2.5919	0.0209	0.5259	0.0476	0.5735	0.1524	0.0455	0.1978		2,274.4080	2,274.4080	0.1981		2,279.3605
Worker	0.9467	0.5800	6.5953	0.0226	2.3096	0.0161	2.3257	0.6150	0.0148	0.6299		2,248.9341	2,248.9341	0.0513		2,250.2169
Total	**1.2336**	**9.5363**	**9.1872**	**0.0435**	**2.8356**	**0.0637**	**2.8992**	**0.7674**	**0.0603**	**0.8277**		**4,523.3421**	**4,523.3421**	**0.2494**		**4,529.5774**

3.5 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	0.2409	8.0490	2.4005	0.0207	0.5495	0.0174	0.5669	0.1581	0.0166	0.1748		2,254.8254	2,254.8254	0.1901		2,259.5785
Worker	0.8909	0.5232	6.1098	0.0218	2.4367	0.0158	2.4525	0.6462	0.0145	0.6608		2,170.9142	2,170.9142	0.0465		2,172.0764
Total	**1.1317**	**8.5722**	**8.5103**	**0.0425**	**2.9862**	**0.0332**	**3.0194**	**0.8044**	**0.0312**	**0.8355**		**4,425.7396**	**4,425.7396**	**0.2366**		**4,431.6549**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	0.2409	8.0490	2.4005	0.0207	0.5259	0.0174	0.5433	0.1523	0.0166	0.1690		2,254.8254	2,254.8254	0.1901		2,259.5785
Worker	0.8909	0.5232	6.1098	0.0218	2.3096	0.0158	2.3254	0.6150	0.0145	0.6296		2,170.9142	2,170.9142	0.0465		2,172.0764
Total	**1.1317**	**8.5722**	**8.5103**	**0.0425**	**2.8356**	**0.0332**	**2.8687**	**0.7674**	**0.0312**	**0.7985**		**4,425.7396**	**4,425.7396**	**0.2366**		**4,431.6549**

3.6 Paving - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.5135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6163**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0581	0.0326	0.3918	1.4400e-003	0.1677	1.0600e-003	0.1687	0.0445	9.8000e-004	0.0455		143.8468	143.8468	2.9000e-003		143.9194
Total	**0.0581**	**0.0326**	**0.3918**	**1.4400e-003**	**0.1677**	**1.0600e-003**	**0.1687**	**0.0445**	**9.8000e-004**	**0.0455**		**143.8468**	**143.8468**	**2.9000e-003**		**143.9194**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.5135					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6163**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0581	0.0326	0.3918	1.4400e-003	0.1589	1.0600e-003	0.1600	0.0423	9.8000e-004	0.0433		143.8468	143.8468	2.9000e-003		143.9194
Total	**0.0581**	**0.0326**	**0.3918**	**1.4400e-003**	**0.1589**	**1.0600e-003**	**0.1600**	**0.0423**	**9.8000e-004**	**0.0433**		**143.8468**	**143.8468**	**2.9000e-003**		**143.9194**

3.7 Architectural Coating - 2021

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**21.4555**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.1798	0.1056	1.2332	4.3900e-003	0.4918	3.1800e-003	0.4950	0.1304	2.9300e-003	0.1334		438.1662	438.1662	9.3800e-003		438.4007
Total	**0.1798**	**0.1056**	**1.2332**	**4.3900e-003**	**0.4918**	**3.1800e-003**	**0.4950**	**0.1304**	**2.9300e-003**	**0.1334**		**438.1662**	**438.1662**	**9.3800e-003**		**438.4007**

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**21.4555**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.1798	0.1056	1.2332	4.3900e-003	0.4662	3.1800e-003	0.4694	0.1241	2.9300e-003	0.1271		438.1662	438.1662	9.3800e-003		438.4007
Total	**0.1798**	**0.1056**	**1.2332**	**4.3900e-003**	**0.4662**	**3.1800e-003**	**0.4694**	**0.1241**	**2.9300e-003**	**0.1271**		**438.1662**	**438.1662**	**9.3800e-003**		**438.4007**

3.7 Architectural Coating - 2022

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**21.4412**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.1704	0.0957	1.1492	4.2300e-003	0.4918	3.1200e-003	0.4949	0.1304	2.8700e-003	0.1333		421.9507	421.9507	8.5100e-003		422.1635
Total	**0.1704**	**0.0957**	**1.1492**	**4.2300e-003**	**0.4918**	**3.1200e-003**	**0.4949**	**0.1304**	**2.8700e-003**	**0.1333**		**421.9507**	**421.9507**	**8.5100e-003**		**422.1635**

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	21.2366					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**21.4412**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.1704	0.0957	1.1492	4.2300e-003	0.4662	3.1200e-003	0.4693	0.1241	2.8700e-003	0.1270		421.9507	421.9507	8.5100e-003		422.1635
Total	**0.1704**	**0.0957**	**1.1492**	**4.2300e-003**	**0.4662**	**3.1200e-003**	**0.4693**	**0.1241**	**2.8700e-003**	**0.1270**		**421.9507**	**421.9507**	**8.5100e-003**		**422.1635**

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	1.4886	6.3936	20.6539	0.0823	7.8986	0.0611	7.9597	2.1122	0.0568	2.1690		8,367.0278	8,367.0278	0.3412		8,375.5587

Unmitigated	1.4886	6.3936	20.6539	0.0823	7.8986	0.0611	7.9597	2.1122	0.0568	2.1690		8,367.0278	8,367.0278	0.3412		8,375.5587

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hospital	900.00	254.50	222.75	2,756,573	2,756,573
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	69.00	78.00	0.00	181,521	181,521
Total	969.00	332.50	222.75	2,938,094	2,938,094

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hospital	16.60	8.40	6.90	64.90	16.10	19.00	73	25	2
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Hospital	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Other Asphalt Surfaces	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Parking Lot	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
University/College (4Yr)	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	0.1039	0.9449	0.7938	5.6700e-003		0.0718	0.0718		0.0718	0.0718		1,133.9339	1,133.9339	0.0217	0.0208	1,140.6723
NaturalGas Unmitigated	0.1328	1.2070	1.0139	7.2400e-003		0.0917	0.0917		0.0917	0.0917		1,448.3803	1,448.3803	0.0278	0.0266	1,456.9873

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					
City Park	0	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
Hospital	4121.23	0.0444	0.4040	0.3394	2.4200e-003		0.0307	0.0307		0.0307	0.0307		484.8509	484.8509	9.2900e-003	8.8900e-003	487.7322
Other Asphalt Surfaces	0	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
Parking Lot	0	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
University/College (4Yr)	8190	0.0883	0.8029	0.6745	4.8200e-003		0.0610	0.0610		0.0610	0.0610		963.5294	963.5294	0.0185	0.0177	969.2552

Total		**0.1328**	**1.2070**	**1.0139**	**7.2400e-003**		**0.0917**	**0.0917**		**0.0917**	**0.0917**		**1,448.3803**	**1,448.3803**	**0.0278**	**0.0266**	**1,456.9873**

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					
City Park	0	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
Hospital	3.07041	0.0331	0.3010	0.2529	1.8100e-003		0.0229	0.0229		0.0229	0.0229		361.2248	361.2248	6.9200e-003	6.6200e-003	363.3714
Other Asphalt Surfaces	0	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
Parking Lot	0	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
University/College (4Yr)	6.56803	0.0708	0.6439	0.5409	3.8600e-003		0.0489	0.0489		0.0489	0.0489		772.7091	772.7091	0.0148	0.0142	777.3009
Total		**0.1039**	**0.9449**	**0.7938**	**5.6700e-003**		**0.0718**	**0.0718**		**0.0718**	**0.0718**		**1,133.9339**	**1,133.9339**	**0.0217**	**0.0208**	**1,140.6723**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Unmitigated	5.0515	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524

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	0.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.4634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2100e-003	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524
Total	**5.0515**	**6.1000e-004**	**0.0668**	**0.0000**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**		**0.1429**	**0.1429**	**3.8000e-004**		**0.1524**

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	0.5818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.4634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2100e-003	6.1000e-004	0.0668	0.0000		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		0.1429	0.1429	3.8000e-004		0.1524

Total	**5.0515**	**6.1000e-004**	**0.0668**	**0.0000**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**		**0.1429**	**0.1429**	**3.8000e-004**		**0.1524**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

Biological Resources Report

HEALTH SCIENCES CAMPUS PROJECT

University of California, Irvine
Orange County, California

BIOLOGICAL RESOURCES REPORT

Prepared For:

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January 2019
Revised May 2019
JN 170093

Michael Baker
INTERNATIONAL

HEALTH SCIENCES CAMPUS PROJECT

UNIVERSITY OF CALIFORNIA, IRVINE
ORANGE COUNTY, CALIFORNIA

Biological Resources Report

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a biological resources assessment for the above-referenced project.

Stephen Anderson
Biologist
Natural Resources/Regulatory Permitting

Dan Rosie
Project Manager/Ecologist
Natural Resources/Regulatory Permitting

January 2019
Revised May 2019

Executive Summary

On behalf of the University of California, Irvine (UCI), Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the proposed approximately 24-acre Health Sciences Campus Project (project) located at the UCI campus, in the City of Irvine, County of Orange, California. The proposed project consists of the construction of new Health Sciences Campus and School of Nursing Buildings (Phase I), and potential future development to be determined at a later time (Phase II).

This report was prepared to document all biological resources identified within the survey area (comprised of the permanent footprint, all surrounded by a 150-foot buffer) during a general biological resources survey, which includes a floral and faunal inventory, vegetation/land use mapping, habitat suitability assessments to determine the potential for special-status plant and wildlife species and vegetation communities to occur within the survey area, and an evaluation of jurisdictional aquatic or other hydrological features. Details of a formal jurisdictional delineation are provided under a separate cover.

The survey area consists of an undeveloped area comprised mainly of non-native vegetation communities, surrounded by developed portions associated with the surrounding transportation corridors and the UCI campus. Four (4) natural vegetation communities were observed and mapped within the survey area: southern willow scrub, mule fat scrub, disturbed coastal sage scrub, and non-native grassland. Construction of the Phase I portion of the proposed project would result in a permanent loss of approximately 0.13 acre of non-native grassland and three (3) human-modified areas mapped as disturbed, ornamental, and developed, which are not considered biological resources due to a lack of native soils and vegetation. Phase II would result in a permanent loss of approximately 0.07 acre of southern willow scrub, approximately 0.19 acre of mule fat scrub, and approximately 0.25 acre of disturbed coastal sage scrub, and approximately 6.32 acres of non-native grassland; however, no development is proposed within Phase II at this time.

Based on a 4-quadrangle search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind 5 and California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants, and a query of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation online system, Michael Baker determined that of the forty-five (45) special-status plant species and forty-five (45) special-status wildlife species known to occur within the vicinity of the survey area, several are either not expected or have a low potential to occur within or surrounding the project site due to a lack of suitable habitat on-site or the project is outside of the species' known distribution range, for example.

Additionally, the survey area is located within and is subject to the requirements and provisions set forth in the Central Subarea of the County of Orange Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (Orange County NCCP/HCP). The UCI is a participating landowner within the Orange County NCCP/HCP for which development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the Natural Community Conservation Planning Act, Federal Endangered Species Act, and California Endangered Species Act for impacts to habitats occupied by listed and other species "identified" by the Orange County NCCP/HCP and its associated IA. Therefore, this project is exempt from any additional mitigation for impacts to "identified" species and their habitat.

No special-status plant species were observed within the survey area; however, Michael Baker determined that there is a moderate potential for Robinson's pepper grass (*Lepidium virginicum* var*. robinsonii*; California Rare Plant Rank 4.3) to occur within the survey area. Two (2) special-status wildlife species were observed during the survey, northern harrier (*Circus hudsonius;* SSC) and coastal California gnatcatcher, both of which are covered under the Orange County NCCP/HCP with the UCI as a participating landowner. Michael Baker also determined that there is a moderate potential for white-tailed kite (*Elanus leucurus*; Fully Protected) and California horned lark (*Eremophila alpestris actia*; Watch List) to occur within the survey area.

A total of seven (7) special-status vegetation communities were identified within the 4-quadrangle CNDDB search, with none of those present within the survey area. However, the project site includes a small area of disturbed coastal sage scrub; however, impacts to this specials-status vegetation community are covered under the Orange County NCCP/HCP with the UCI as a participating landowner. The survey area is not located within any USFWS-designated Critical Habitat. The nearest Critical Habitat is located over 2 miles to the east, designated for coastal California gnatcatcher.

According to the Federal Emergency Management Agency, the survey area is not located within the 100-year flood zone, rather an Area of Minimal Flood Hazard (Zone X). Jurisdictional aquatic features within the survey area include an unnamed drainage, which conveys flows from the surrounding development to the east via an approximately 24-inch culvert, entirely located within Phase II. The Phase II portion of the proposed project is expected to result in approximately 0.05 acre of permanent impacts to U.S. Army Corps of Engineers (Corps) and Regional Water Quality Control Board (Regional Board) non-wetland Waters of the U.S., and approximately 0.41 acre of permanent impacts to streambed/banks and associated riparian vegetation (southern willow scrub and mule fat scrub) subject to CDFW jurisdiction. Impacts to these features will require permits/authorizations, including the fulfillment of mitigation requirements as deemed appropriate, from the regulatory agencies.

Because the proposed project is relatively small and surrounded by development, it would not have a substantial effect on wildlife movement (except potentially during construction) and impacts to wildlife corridors are not expected as a result of project implementation. However,

project activities conducted within the bird breeding season (typically January through July for raptors and February through August for other avian species) will require pre-construction nesting bird surveys, and the appropriate setbacks if active nests are found.

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Tables

Figures

Appendices

LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
amsl	above mean sea level
BMP	Best Management Practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRPR	California Rare Plant Rank
CWA	Clean Water Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FE	Federally-listed as endangered
FT	Federally-listed as Threatened
GSF	gross square feet
HA	Hydrologic Area
HSA	Hydrologic Subarea
HU	Hydrologic Unit
IA	Implementation Agreement
IPaC	Information for Planning and Conservation
Michael Baker	Michael Baker International
MBTA	Migratory Bird Treaty Act
MM	minimization measures
NRCS	Natural Resources Conservation Service
NWI	USFWS National Wetland Inventory
OHWM	Ordinary High Water Mark
Orange County NCCP/HCP	County of Orange Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan
project	Health Sciences Campus Project
Regional Board	Regional Water Quality Control Board
SE	State-listed as endangered
SSC	California Species of Special Concern
ST	State-listed as threatened
UCI	University of California, Irvine
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Section 1 Introduction

On behalf of the University of California, Irvine (UCI), Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the proposed Health Sciences Campus Project (project). This report describes the biological resources record searches and literature review, survey methodologies, and results of the general biological resources survey conducted within the survey area to determine the presence or potential occurrence of State-listed and/or Federally-listed as rare, threatened, or endangered, and other special-status plants, animals, and natural vegetation communities. A summary of areas subject to jurisdiction of the regulatory agencies is included. Details of a formal jurisdictional delineation are provided under a separate cover.

1.1 PROJECT LOCATION

The proposed project site is located within the UCI campus, approximately 0.4 mile east of State Route 73 and 2.5 miles south of Interstate 405, in the City of Irvine, Orange County, California (Figure 1, *Regional Vicinity*). Specifically, the survey area is depicted in Section 57 of Township 6 South, Range 9 West, of the U.S. Geological Survey (USGS) *Tustin, California* 7.5-minute topographic quadrangle map (Figure 2, *Site Vicinity*).

The survey area identified for the proposed project includes the proposed permanent footprint, inclusive of a 150-foot buffer to address indirect impacts and for flexibility in design, if necessary (Figure 3, *Survey Area*). The survey area is inclusive of and bounded by California Avenue and administrative buildings to the west; undeveloped areas, Academy Drive, and athletic fields to the north; parking lots and the UCI Health Sciences Center and School of Medicine to the east; and Bison Avenue, parking lots, and administrative buildings to the south.

1.2 PROJECT DESCRIPTION

The approximately 24-acre proposed project site is divided into two phases. Phase I (approximately 11.47 acres) consists of the construction of an approximately 125,000-gross square feet (GSF) structure for the Health Sciences Campus and an approximately 95,000-GSF structure for the School of Nursing on an undeveloped site located in the UCI's Health Sciences Quad. An approximately 200-space interim surface parking lot would be constructed north of the two structures. A pedestrian mall would be constructed to connect the Health Sciences Campus building, School of Nursing building, and interim parking lot to the existing structures in the Health Sciences Quad northeast of the project site.

Phase II (approximately 12.85 acres) is included in the this study to provide existing biological and jurisdictional resources documentation and discuss potential constraints to be considered for future development.

5/3/2019 JN M:\Mdata\170093\GIS\MXD\Fig 01 Regional Vicinity.mxd RP

Michael Baker INTERNATIONAL

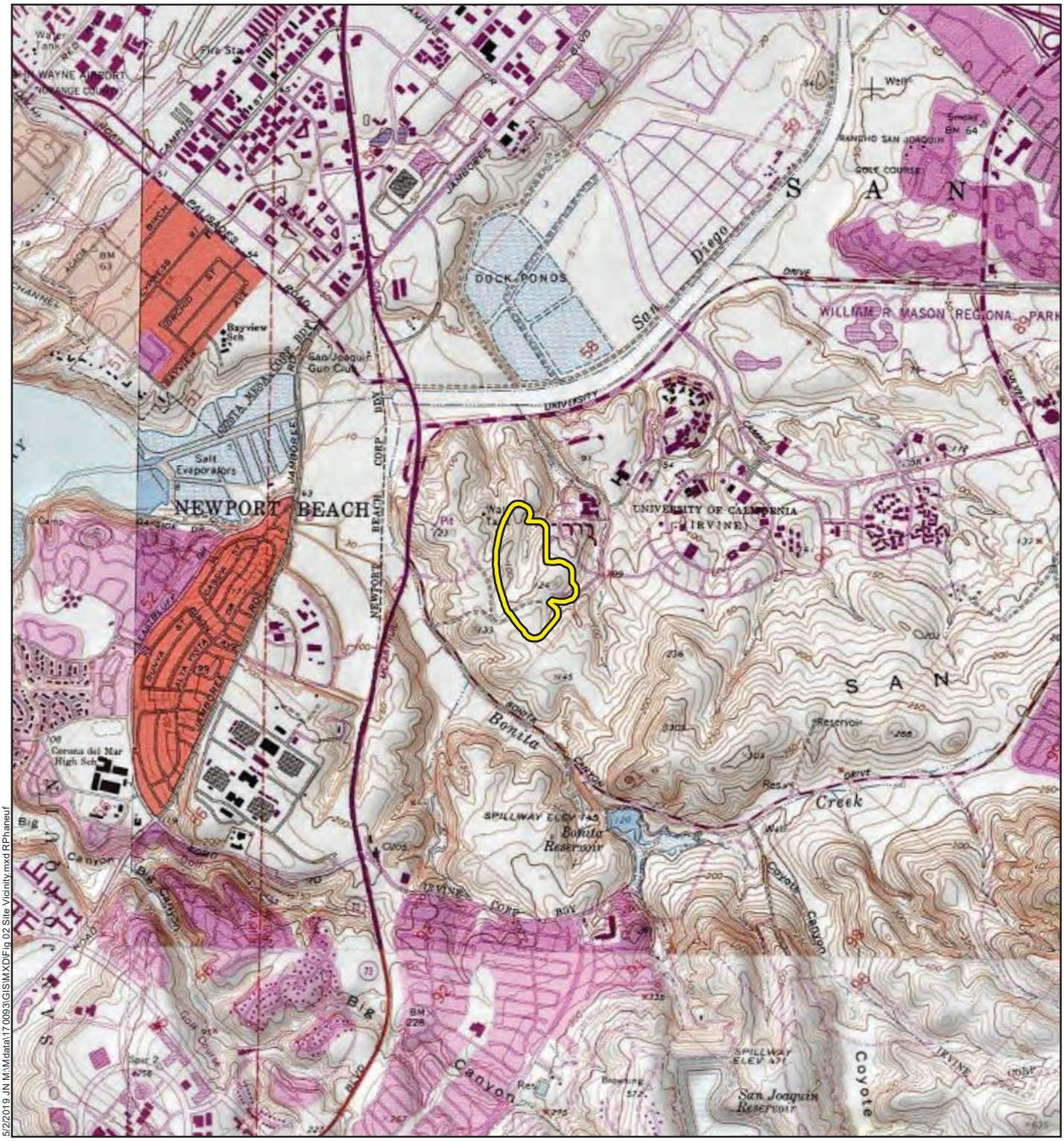
0 2.5 5 Miles

Source: ArcGIS Online, 2018

COLLEGE OF HEALTH SCIENCES PROJECT
BIOLOGICAL RESOURCES REPORT

Regional Vicinity

Figure 1



5/2/2019 JN M:\Mdata\170093\GIS\MXD\Fig 02 Site Vicinity.mxd RPhaneuf

Legend

Survey Area

USGS 7.5-Minute topographic quadrangle maps: *Tustin, California (1981)*

Michael Baker INTERNATIONAL

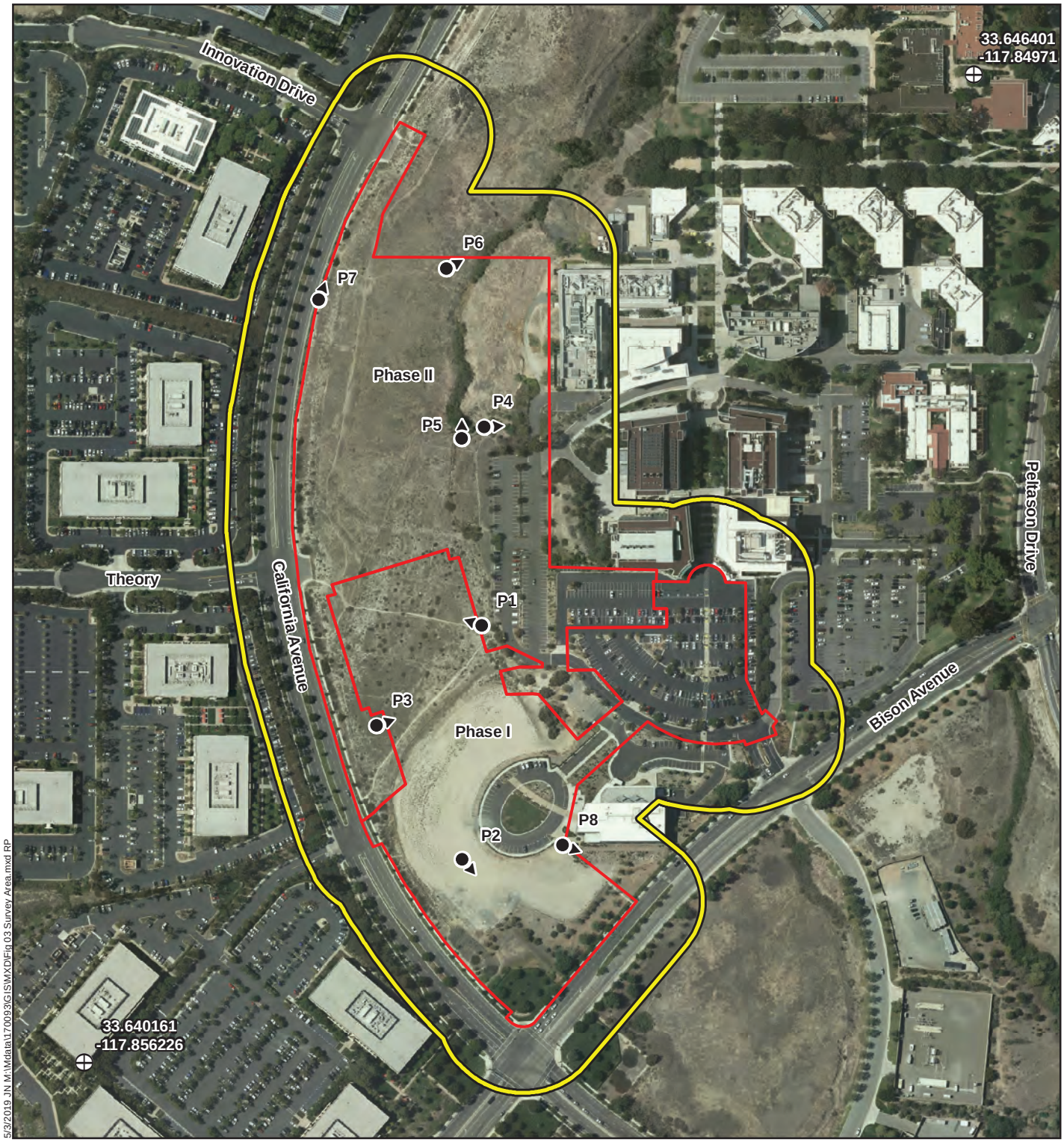
0 0.25 0.5 Miles

Source: ArcGIS Online, 2018

COLLEGE OF HEALTH SCIENCES PROJECT
BIOLOGICAL RESOURCES REPORT

Site Vicinity

Figure 2



5/3/2019 JN M:\Mdata\170093\GIS\MXD\Fig 03 Survey Area.mxd RP

Legend

- Survey Area
- Project Site
- Photograph Point and Direction
- Reference Point

Michael Baker INTERNATIONAL

0 150 300 Feet

Source: Eagle Aerial, 2014

COLLEGE OF HEALTH SCIENCES PROJECT
BIOLOGICAL RESOURCES REPORT

Survey Area

Figure 3

Work would occur during dry conditions. Best Management Practices (BMP) would be implemented to insure water quality. Weather forecasts would be monitored during construction activities. If rainfall is predicted, soil stabilization and sediment controls would be established at all disturbed areas prior to the onset of rain. No construction activities would occur during a rain event.

1.3 PURPOSE OF DOCUMENT

This report documents all biological resources identified within the survey area during a general biological resources survey and vegetation/land use mapping. Further, this report includes an analysis of the potential for survey area to support other special-status plant and animal species and special-status vegetation communities that are subject to provisions of the Federal Endangered Species Act of 1973 (FESA), Migratory Bird Treaty Act (MBTA), California Endangered Species Act (CESA), California Fish and Game Code (CFGC), California Native Plant Protection Act, Bald and Golden Eagle Protection Act, and other local policies and ordinances protecting biological resources.

This report also addresses the County of Orange Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan (Orange County NCCP/HCP), including a suitability assessment of the habitats on-site to support the three (3) "Target Species" – coastal California gnatcatcher (*Polioptila californica californica*), a Federally-listed as threatened species (FT) and California Species of Special Concern (SSC), coastal cactus wren (*Campylorhynchus brunneicapillus*; SSC), and orange-throated whiptail (*Aspidoscelis hyperythra*; SSC) – and thirty-six (36) other "Identified Species." The Orange County NCCP/HCP specifies that the populations of the target species shall be subject to long-term monitoring and that these taxa shall be treated as if they were listed under the FESA and/or CESA.

Section 2 Methodology

2.1 LITERATURE REVIEW AND DATABASE SEARCHES

Prior to conducting the field work, Michael Baker researched the environmental setting of the survey area, such as regional and local geography, land use, climate, and watershed. Further, Michael Baker conducted a 4-quadrangle search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind 5 (CDFW, Biogeographic Data Branch 2018) and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2018), and generated a Species and Resources List queried from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online system (USFWS 2018a). These sources helped to identify special-status plant and wildlife species, vegetation communities, and other biological resources that have been previously documented within, near, and/or have the potential to occur within the survey area. The *Special Animals List* (CDFW 2018a) and the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2018b) were reviewed for the current status designations of rare and endangered plant and wildlife species. Other resources reviewed include the CNPS California Rare Plant Rank (CRPR) System; recent aerial photography (Google Earth Pro 2017); the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Soil Survey of the Los Angeles County, California, Southeastern Part* (USDA, NRCS 2018); the National Hydric Soils List (USDA, NRCS 2015); and the USFWS National Wetland Inventory (NWI) (USFWS 2018b).

2.2 GENERAL BIOLOGICAL RESOURCES SURVEYS

Following the database searches, on December 3, 2018, Michael Baker biologists Stephen Anderson and Dan Rosie conducted a general biological resources survey of the entire survey area between the hours of 0800 and 1230, with weather conditions consisting of temperatures ranging from approximately 52 to 68 degrees Fahrenheit (°F), winds approximately 1 to 3 miles per hour, and cloud cover ranging from 60 percent high clouds to clear skies. The survey was conducted to document existing site conditions and biological resources, and to evaluate habitat with the potential to support various special-status plant and wildlife resources, including jurisdictional aquatic or other hydrological features. Representative photographs of the survey area are provided at the end of this report in Appendix A, *Site Photographs*. Figure 3 provides the location and direction from which each photograph was taken.

2.2.1 Vegetation/Land Use Mapping and Plant Species Inventory

Classification of the on-site vegetation communities and other land uses is based on the descriptions provided in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), with modifications to better represent existing conditions in the field using the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), an expanded vegetation classification system based on Holland (1986). Plant species nomenclature

and taxonomy follow *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012). All plant species encountered were noted and identified at minimum to the lowest possible taxonomic level necessary to determine rarity. For a complete list of plant species observed on-site, refer to Appendix B, *Plant and Wildlife Species Observed List*.

2.2.2 General Wildlife Observations

Wildlife identification and nomenclature followed standard references, including The American Ornithologists' Union *Checklist of North and Middle American Birds* (American Ornithologists' Union 2016), the *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, With Comments Regarding Confidence In Our Understanding* (Crother 2012), and *Mammals of North America, Second Edition* (Kays and Wilson 2009). All wildlife observed and/or otherwise detected through sign (e.g., tracks, scat) were recorded. Other wildlife may occupy the site but are not easily detectable during the day (i.e., nocturnal) and without extensive survey efforts during the appropriate season, in addition to several species being transient and potentially occupying the site other times of the year. For a complete list of wildlife species observed or otherwise detected on-site, refer to Appendix B.

2.3 SURVEY LIMITATIONS

This Biological Resources Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Biological surveys for the presence or absence of certain taxa have been conducted as part of this assessment but were not necessarily performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided.

The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, review of the CNDDB RareFind 5 and CNPS Online Inventory, and professional expertise. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Michael Baker believes the data sources are reasonably reliable, Michael Baker cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data

sources reviewed included only those that are practically reviewable without the need for extensive research and analysis.

Section 3 Existing Conditions

The following is a summarization of the results of the database searches and biological resources survey. Discussions regarding the general environmental setting, vegetation communities and other land uses present, and plant and animal species observed are presented below. Representative photographs of the survey area are provided in Appendix A, and a complete list of all the plant and animal species observed on-site during the survey is provided in Appendix B.

3.1 ENVIRONMENTAL SETTING

The survey area is located within the Southwestern California region of the California Floristic Province, at the UCI campus. The survey area consists of gradually sloped hills dominated by non-native grassland and disturbed areas, with a pocket of southern willow scrub and an extended swath of mule fat scrub within the unnamed feature, and disturbed coastal sage scrub near the center of the project site on the eastern boundary. A large portion of the survey area is developed and/or planted with ornamental species. The immediately surrounding area is generally developed, with the exception of an area of undeveloped land immediately north of the survey area. An unnamed ephemeral channel conveys flows generally south to north through the northern portion of the survey area.

3.1.1 Climate

The survey area, located at the UCI campus in the City of Irvine, California, has a climate characterized as Mediterranean, with cool, mild winter rains and hot, dry summers. The Irvine area is generally hot and dry through most of the year, with highs averaging approximately 79 °F in the summer and lows averaging 48 °F in the winter. Average annual precipitation for the Irvine, California, area is approximately 14 inches (U.S. Climate Data 2018).

3.1.2 Watershed

The project site is located within the Santa Ana River Watershed (Hydrologic Unit Code 18070204), Santa Ana River Hydrologic Unit (HU 801.00), Lower Santa Ana River Hydrologic Area (HA 801.10), and East Coastal Plain Hydrologic Subarea (HSA 801.11) of the Water Quality Control Plan for the Santa Ana River Basin (Region 8). The Santa Ana River HU is a roughly rectangular-shaped area of approximately 154 square miles, extending from the Santiago Canyon foothills on the east to the Pacific Ocean on the west, and from the City of Orange on the north to the City of Lake Forest on the south. The unit includes the Cities of Irvine, Tustin, Orange, Newport Beach, Santa Ana, Costa Mesa, and Lake Forest. Waters from the survey area are ultimately conveyed to Upper Newport Bay and the Pacific Ocean.

Michael Baker searched the Federal Emergency Management Agency (FEMA) – 100 Year Flood Zones for flood data within the project site (ArcGIS 2018). According to FEMA, the survey area is not located within the 100-year flood zone, rather an Area of Minimal Flood Hazard (Zone X).

3.2 TOPOGRAPHY AND SOILS

The general area that the project site is situated in is characterized by gradual slopes and a relatively flat surface. Surface elevations within the survey area vary between approximately 130 feet above mean sea level (amsl) along the southern end of the survey area to approximately 65 feet amsl at the northern end of the survey area. An unnamed drainage enters the survey area upstream at approximately 85 feet amsl.

On-site and adjoining soils were reviewed prior to the field visit using the USDA, NRCS Web Soil Survey (USDA, NRCS 2018). Mapped soils within the survey area include the following (refer to Figure 4, *USDA Soils*):

- Myford sandy loam, 2 to 9 percent slopes (Map Unit Symbol: 174)
- Myford sandy loam, 9 to 30 percent slopes (177)

Michael Baker then reviewed the National Hydric Soils List (USDA, NRCS 2015) to identify soils mapped within the survey area that are considered to be hydric. According to the soils list, Myford sandy loam, 2 to 9 percent slopes, is considered hydric. Soil textures identified on-site were generally consistent with those mapped by the *Soil Survey of the Los Angeles County, California, Southeastern Part* (USDA, NRCS 2018), with the soil textures consisting of sandy loam.

3.3 VEGETATION COMMUNITIES AND OTHER LAND USES

Four (4) natural plant communities, including individual trees not associated with these communities, and three other land uses were identified on-site during the field survey. Vegetation classification was based on Holland (1986), and modifications were made based on Oberbauer et al. (2008). A complete list of plant species observed during the survey is provided in Appendix B. A map that illustrates the extent of each vegetation community/land use is presented as Figure 5, *Vegetation Communities, Land Uses, and Special-Status Species*. Table 1 provides the acreages of the mapped classifications observed within the project site, broken down by phase, each discussed in detail below.

5/3/2019 JN M:\Mdata\170093\GIS\MXD\Fig 04 USDA Soils.mxd RPhaneuf

Legend

Survey Area	
Project Site	
Reference Point	

Map Unit Symbol and Name

174	Myford sandy loam, 2 to 9 percent slopes, eroded
177	Myford sandy loam, 9 to 30 percent slopes, eroded

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0 150 300 Feet

Source: Eagle Aerial, 2014, USDA, 2018

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USDA Soils

Figure 4

5/3/2019 JN M:\Mdata\170093\GIS\MXD\Fig 05 Vegetation Communities Land Uses and Special-Status Species.mxd RP

Legend

- Survey Area
- Project Site
- Reference Point

Vegetation Communities

- Disturbed Coastal Sage Scrub
- Southern Willow Scrub
- Mule Fat Scrub
- Non-Native Grassland
- Ornamental
- Disturbed Habitat
- Developed

Special-Status Species

- coastal California gnatcatcher (2 individuals)
- northern harrier (1 individual)

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0 150 300 Feet

Source: Eagle Aerial, 2014

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Vegetation Communities, Land Uses, and Special-Status Species

Figure 5

Table 1: Vegetation Communities/Land Uses within the Project Site

Vegetation Community/Land Use (Holland/Oberbauer Code)	Phase I	Phase II	Total*
Southern Willow Scrub (63320)	0	0.07	0.07
Mule Fat Scrub (63310)	0	0.19	0.19
Disturbed Coastal Sage Scrub (32500)	0	0.25	0.25
Non-Native Grassland (42200)	0.13	6.32	6.45
Disturbed Habitat (12000)	5.61	1.97	7.58
Ornamental (12000)	1.79	1.71	3.50
Developed (12000)	3.94	2.34	6.28
TOTAL*	**11.47**	**12.85**	**24.32**

* Totals may not equal to sum due to rounding.

Southern Willow Scrub

The upstream end of the unnamed drainage consists of a pocket of southern willow scrub that receives storm flows from an approximately 24-inch culvert. This vegetation community on-site is dominated by arroyo willow (*Salix lasiolepis*), with scattered individuals of holly oak (*Quercus ilex*) and mule fat (*Baccharis salicifolia*).

Mule Fat Scrub

Mule fat scrub was mapped within the project site immediately downstream (north) of the southern willow scrub described above. This vegetation community on-site is nearly monotypic of mule fat.

Disturbed Coastal Sage Scrub

A patch of vegetation along the east end of the survey area immediately adjacent to the UCI Health Center parking lot consists of remnant but disturbed coastal sage scrub. This area is dominated by California buckwheat (*Eriogonum fasciculatum*), with scattered individuals of mule fat, coyote brush (*Baccharis pilularis*), California sunflower (*Encelia californica*), and evening primrose (*Oenothera elata* ssp. *hookeri*).

Non-Native Grassland

The northern half of the study area is primarily dominated by non-native grassland. Dominants within the vegetation community on-site primarily include brome grasses (*Bromus* spp.), wild oat (A*vena fatua*), redstem filaree (*Erodium cicutarium*), and short-pod mustard (*Hirschfeldia incana*).

Disturbed Habitat

Disturbed areas are lands that are frequently and repeatedly disturbed, and thereby dominated by opportunistic, primarily non-native species that often limit the reestablishment of native vegetation. Dominants within this non-native vegetation community on-site primarily include

Russian thistle (*Salsola tragus*), red brome (*Bromus rubens*), redstem filaree, and black mustard (*Brassica nigra*).

Ornamental

Ornamental vegetation consists of landscaped, irrigated, and/or maintained trees, shrubs, and ground cover. This vegetation type was primarily mapped along roadways and parking lots within the survey area. Species present include, but are not limited to, Chinese elm (*Ulmus parvifolia*), bank catclaw (*Acacia redolens*), lemon scented gum (*Eucalyptus citriodora*), holly oak, slender myoporum (*Myoporum parvifolium*), deergrass (*Muhlenbergia rigens*), western sycamore (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*).

Developed

Developed land within the survey area consists of the paved portions of the roadways and the UCI campus facilities.

3.4 GENERAL WILDLIFE OBSERVATIONS

Due to the disturbed nature of the survey area, including surrounding developments, habitat within the survey area is marginally suitable for supporting various wildlife species. Species common to native and disturbed vegetation communities described above that were observed during the survey include, but are not limited to, house finch (*Haemorhous mexicanus*), red-shouldered hawk (*Buteo lineatus*), American crow (*Corvus brachyrhynchos*), California towhee (*Melozone crissalis*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), and Anna's hummingbird (*Calypte anna*). A complete list of wildlife species observed during the survey is provided in Appendix B.

Section 4 Special-Status Biological Resources

The following discusses the potential for special-status plant and wildlife species and special-status vegetation communities to occur within the survey area. 'Potential to occur' is based on the presence or absence of suitable habitat for each special-status species evaluated, as well as the general ecological requirements for each species and known occurrences within, and/or within the vicinity of, the survey area. All CNDDB occurrences documentation of special-status species and vegetation communities, including USFWS-designated Critical Habitats, within a 5-mile radius of the survey area are shown in Figure 6, *Special-Status Biological Resources Documented Within a 5-mile Radius*. An evaluation of the potential for each species identified in the database records search to occur on-site is presented in Appendix C, *Special-Status Species Table*.

4.1 SPECIAL-STATUS SPECIES

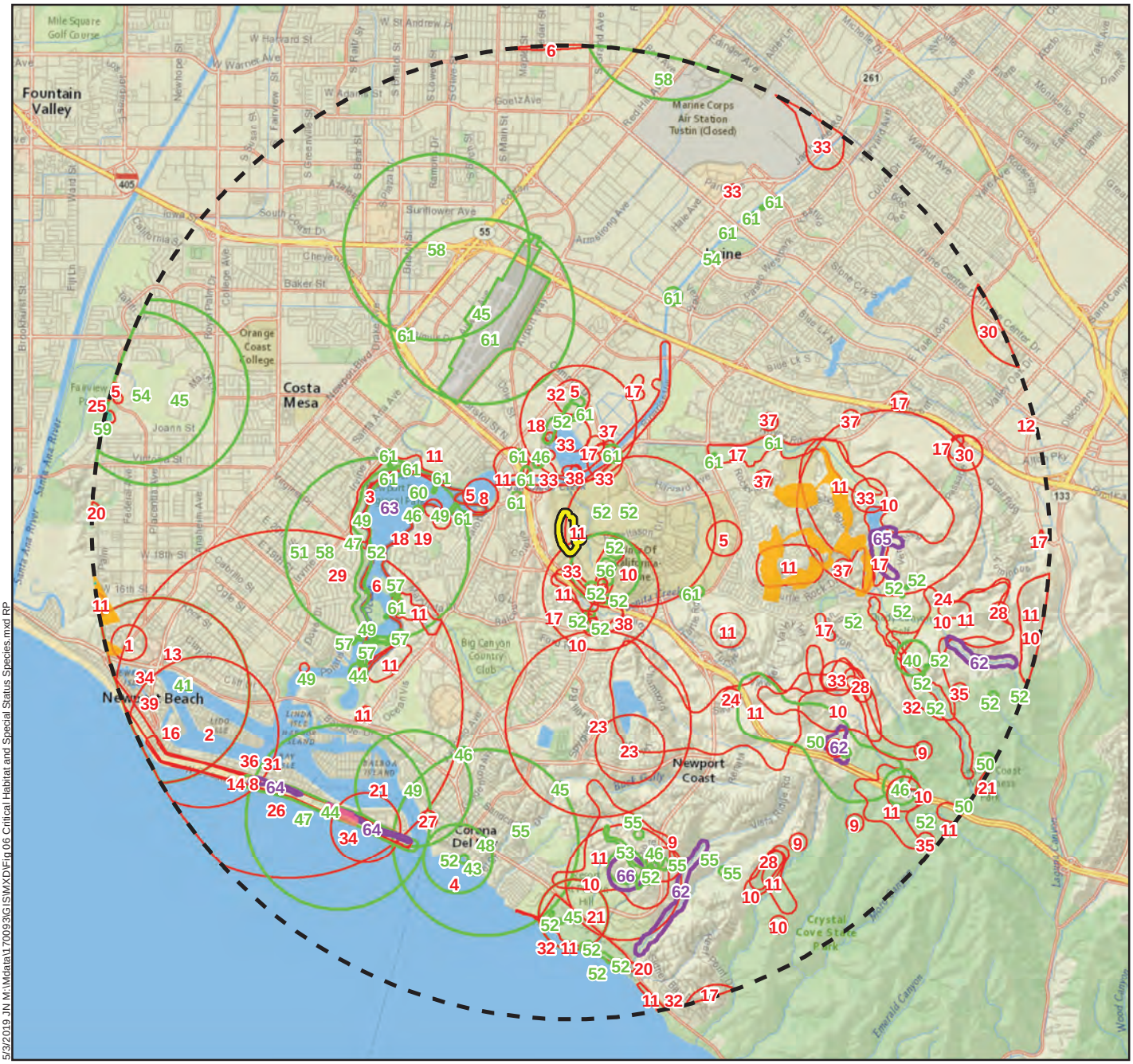
The results of the database record searches (4-quadrangle search of the CNDDB RareFind 5 and CNPS Online Inventory; and query of the USFWS IPaC online system) revealed documented occurrences for a total of forty-five (45) special-status plant species and a total of forty-five (45) special-status wildlife species. Several of the special-status species with documented occurrences were evaluated by Michael Baker as having a "Low" or "Not Expected" potential for occurrence and are therefore not discussed further. Species determined to have a "Moderate" or "High" potential for occurring, and those observed on-site during the survey, warrant a discussion.

No special-status plant species were observed during the December 2018 survey. Two (2) special-status wildlife species were observed during the survey, northern harrier (*Circus hudsonius;* SSC) and coastal California gnatcatcher (FT/SSC). Based on the literature review/database searches and on-site habitat suitability assessments, Michael Baker determined that the survey area contains suitable habitat with a moderate or high potential to support one (1) special-status plant species and two (2) other special-status wildlife species.

4.1.1 Special-Status Plant Species

No special-status plant species were observed during the survey. Of the forty-five (45) special-status plant species documented within the 4-quadrangle search, Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3) was determined to a have a moderate potential to occur within the survey area. All other special-status plant species were determined to have a low potential or are not expected to occur within the survey area due to a lack of suitable habitat on-site or the project is outside of the species' known distribution range.

Robinson's pepper-grass: This annual species is known to occur within grassland, chaparral, coastal scrub, cismontane woodland, and/or riparian woodland habitats that are marginally



5/3/2019 JN M:\Mdata\170093G\SIMXD\Fig 06 Critical Habitat and Special Status Species.mxd RP

Legend

- Survey Area
- 5-mile Radius Buffer

Special Status Resources

- Animal
- Plant
- Vegetation Community

Critical Habitat

- Coastal California gnatcatcher
- San Diego fairy shrimp
- Western snowy plover

ID	Animal	ID	Animal	ID	Animal	ID	Plant	ID	Plant	ID	Vegetation Community
1	American badger	14	globose dune beetle	27	southern California legless lizard	40	Allen's pentachaeta	51	Los Angeles sunflower	62	Southern Coast Live Oak Riparian Forest
2	bank swallow	15	grasshopper sparrow	28	southern California rufous-crowned sparrow	41	aphanisma	52	many-stemmed dudleya	63	Southern Coastal Salt Marsh
3	Belding's savannah sparrow	16	hoary bat	29	southern California saltmarsh shrew	42	chaparral ragwort	53	mesa horkelia	64	Southern Foredunes
4	big free-tailed bat	17	least Bell's vireo	30	tricolored blackbird	43	cliff spurge	54	mud nama	65	Southern Sycamore Alder Riparian Woodland
5	burrowing owl	18	light-footed Ridgway's rail	31	western beach tiger beetle	44	coast woolly-heads	55	Nuttall's scrub oak	66	Valley Needlegrass Grassland
6	California black rail	19	mimic tryonia	32	western mastiff bat	45	Coulter's goldfields	56	Robinson's pepper-grass		
7	California horned lark	20	monarch	33	western pond turtle	46	Coulter's saltbush	57	salt marsh bird's-beak		
8	California least tern	21	orange-throated whiptail	34	western snowy plover	47	Davidson's saltscale	58	San Bernardino aster		
9	coast horned lizard	22	osprey	35	western spadefoot	48	decumbent goldenbush	59	San Diego button-celery		
10	coastal cactus wren	23	Pacific pocket mouse	35	western spadefoot	49	estuary seablite	60	south coast saltscale		
11	coastal California gnatcatcher	24	red-diamond rattlesnake	36	western tidal-flat tiger beetle	50	intermediate mariposa-lily	61	southern tarplant		
12	Cooper's hawk	25	San Diego fairy shrimp	37	white-tailed kite						
13	Crotch bumble bee	26	sandy beach tiger beetle	38	yellow-breasted chat						
				39	yellow rail						

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0 1 2 Miles

Source: Esri, USFWS, 2018

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Special-Status Species/Habitat Documented within a 5-mile Radius

Figure 6

present throughout the survey area. The nearest occurrence for this species is less than 0.5 mile from the survey area. Therefore, there is a moderate potential for these species to occur within the survey area.

4.1.2 Special-Status Wildlife Species

Two (2) special-status wildlife species were observed during the survey, northern harrier (SSC) and coastal California gnatcatcher (FT/SSC). Of the forty-five (45) special-status wildlife species documented within the 4-quadrangle search, white-tailed kite (*Elanus leucurus*; State Fully Protected [FP]) and California horned lark (*Eremophila alpestris actia*; State Watch List [WL]) were determined to a have a moderate potential to occur within the survey area. All other special-status wildlife species were determined to have a low potential or are not expected to occur within the survey area due to a lack of suitable habitat on-site.

White-tailed kite: This bird species is known to nest in dense-topped trees that are marginally present within the survey area. Foraging habitat is also present throughout. The nearest occurrence for white-tailed kite is approximately 0.5 mile to the southeast. Therefore, there is a moderate potential for this species to occur within the survey area.

California horned lark: This bird species is known to occur in low herbaceous vegetation with widely scattered low shrubs that are present within the survey area. The nearest occurrence for California horned lark is approximately 0.5 mile to the southeast of the survey area. Therefore, there is a moderate potential for this species to occur within the survey area.

4.2 SPECIAL-STATUS VEGETATION COMMUNITIES

The CNDDB 4-quadrangle records search revealed a total of seven (7) special-status vegetation community occurrences. One (1) of those mapped within the vicinity of the survey area is marginally present, valley needlegrass grassland. Several individuals of purple needlegrass (*Stipa pulchra*) were observed widely scattered throughout the non-native grassland near the northern end of the survey area; however, this area was not mapped separately due to a lack of density of native species and the extent of area covered by needlegrass.

Three (3) special-status vegetation communities not recorded within the 4 quadrangles by CNDDB were observed on-site as follows: southern willow scrub, mule fat scrub, and coastal sage scrub. The drainage within the survey area was mapped by the USFWS NWI as Freshwater Emergent Wetland, but more specifically as PEM1A (Palustrine, Emergent, Persistent, Temporary Flooded). Southern willow scrub and mule fat scrub are subject to jurisdiction of the regulatory agencies. Coastal sage scrub is considered a “rare and worthy of consideration” vegetation community by CDFW due to loss and fragmentation along the foothills in southern California. The Orange County NCCP/HCP primarily focuses on the protection of coastal sage scrub and the organisms that depend on it for continued survival. No other special-status vegetation communities were observed within the survey area.

4.3 JURISDICTIONAL HYDROLOGICAL FEATURES

Jurisdictional features within the survey area consist of one (1) unnamed ephemeral drainage, a relatively incised, arroyo willow and mule fat-dominated channel that encompasses a relatively narrow riparian corridor surrounded by non-native grassland. This feature is located entirely within Phase II, which conveys storm and urban runoff flows received primarily from the existing UCI campus development to the east via an approximately 24-inch culvert. No jurisdictional features were observed within Phase I.

Within the Phase II portion of the survey area, the unnamed channel consists of an earthen, primarily incised stream course that conveys ephemeral (temporary) flows generally south to north, with an Ordinary High Water Mark (OHWM) averaging approximately 3 feet wide and dominated by riparian vegetation, active banks averaging approximately 7 feet wide, and a relatively broad riparian corridor averaging from approximately 25 to 35 feet wide. All areas within the OHWM of the unnamed drainage do not meet the criteria for Corps wetland Waters of the U.S. (WoUS); therefore, they are considered non-wetland WoUS. The outer drip line of the riparian canopy or the top of the active bank (whichever is greater) constitutes the limits of CDFW jurisdictional streambed, banks, and associated riparian vegetation.

Refer to Figure 7, *Corps/Regional Board Jurisdiction*, and Figure 8, *CDFW Jurisdiction*. For details regarding the results of the jurisdictional delineation, refer to the *Jurisdictional Delineation Report* prepared by Michael Baker under a separate cover.

4.4 NESTING BIRDS AND WILDLIFE MOVEMENT

The survey area currently provides habitats suitable to provide nesting opportunities for various bird species. Small mammals are likely to use the survey area for foraging. Other ground-moving wildlife tolerant of disturbed native habitats may utilize the survey area to forage, breed, disperse, and establish new residents. However, Bison Avenue and California Avenue pose the largest threat to these species, having a potential to result in mortalities caused by passing motorists.

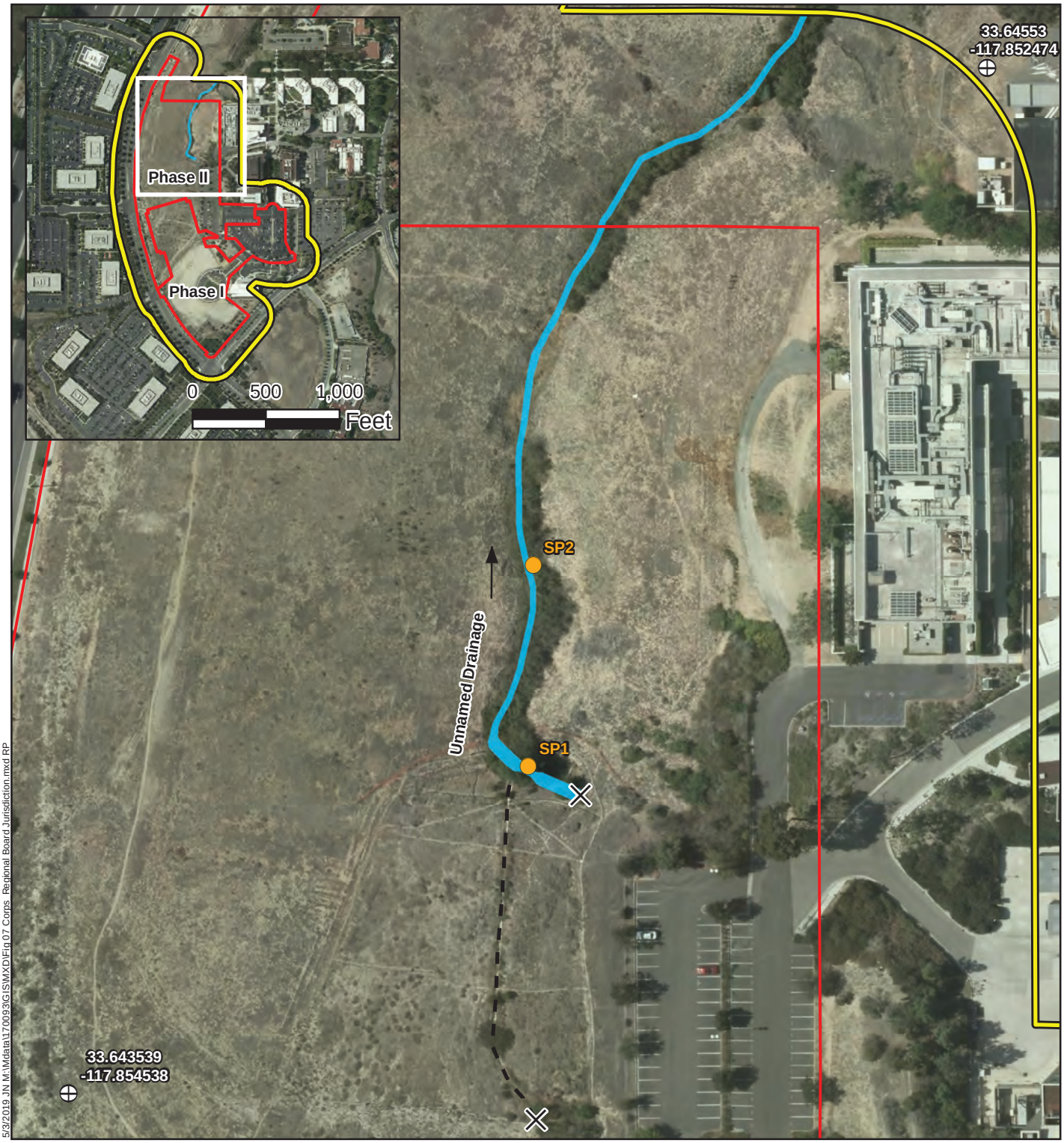
4.5 CRITICAL HABITAT

The survey area is not located within any USFWS-designated Critical Habitat. The nearest Critical Habitat is located over 2 miles to the east, designated for coastal California gnatcatcher (FT/SSC).

4.6 LOCAL POLICIES AND ORDINANCES

4.6.1 Orange County NCCP/HCP

The Orange County NCCP/HCP is a comprehensive, multi-jurisdictional habitat conservation plan focusing on conservation of species and their associated habitats in Orange County. The Orange



Legend

- Survey Area
- Project Site
- Corps/Regional Board Non-Wetland WoUS
- Non-Jurisdictional (upland v-ditch)
- Flow Direction
- Culvert
- Soil Pit
- Reference Point

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0 50 100 Feet

Source: Eagle Aerial, 2014

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Corps/Regional Board Jurisdiction

Figure 7

Legend

- Survey Area
- Project Site
- Associated Riparian Vegetation
- Vegetated Streambed
- Unvegetated Streambed
- Non-Jurisdictional (upland v-ditch)
- Flow Direction
- Culvert
- Reference Point

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Eagle Aerial, 2014

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CDFW Jurisdiction

Figure 8

"Target Species:" the coastal California gnatcatcher (FT/SSC), coastal cactus wren (SSC), and orange-throated whiptail (SSC). A reserve area was created to meet the ecological requirements of these three (3) species and thirty-six (36) other "Identified Species," with the understanding that the three target species would serve as "surrogates" for the broader suite of organisms that depend upon coastal sage scrub for their continued survival in the Orange County NCCP/HCP planning area. The Implementation Agreement (IA) satisfies the State and Federal mitigation requirements for designated development and adequately provides for the conservation and protection of 39 species and their habitats identified in the Orange County NCCP/HCP.

Specifically, the survey area is located within the Central Subarea of the Orange County NCCP/HCP and is subject to the requirements and provisions set forth in the Orange County NCCP/HCP, which specifies that the populations of the target species shall be subject to long-term monitoring and that these taxa shall be treated as if they were listed under CESA/FESA. Refer to Appendix C for special-status species known to (or have the potential to) occur within the survey area and surrounding vicinity, and that are covered by the Orange County NCCP/HCP.

4.6.2 City of Irvine Tree Removal Ordinance

Any public trees in the right-of-way of public streets, public trees located in and around public parks and other public facilities, trees in common areas located in village edges and landscape or parking lot setbacks on arterial streets, trees in eucalyptus windbreaks or any tree included in a remnant of a eucalyptus windbreak, and private trees on nonresidential properties to the extent Zoning Ordinance requirements are effected are within jurisdiction of the City. Any tree removed pursuant to City ordinance (and meets the criteria for a permit, including the replacement of trees at a 1:1 ratio and the payment of the applicable fee by the applicant) requires a permit for tree removal.

Section 5 Conclusions and Recommendations

The following discusses the possible adverse impacts to biological resources that may occur from implementation of the proposed project and recommends minimization measures (MM) to be incorporated into the project as necessary to reduce impacts to a less than significant level.

Permanent/direct impacts include the construction of the new buildings and associated facilities as described in Section 1.2 above. Indirect effects as a result of constructing the proposed project include, but are not limited to, noise, lighting, dust, and potential off-site sedimentation. Due to the overall low-impact of the proposed development and the disturbed nature of the project site, and proper installation and maintenance of BMP implements, the potential for adverse indirect effects is considered low.

5.1 SPECIAL-STATUS SPECIES

No special-status plant species were observed during the survey. Two (2) special-status wildlife species were observed during the survey. Michael Baker determined that the survey area contains suitable habitat for one (1) special-status plant species and two (2) other special-status wildlife species. Therefore, a total of five (5) special-status species listed below in Table 2 that were either observed or have a moderate to high potential to occur within the survey area.

Table 2: Special-Status Species Present or Potentially Present

Special-Status Species	Status	Potential for Occurrence
Plant		
Robinson's pepper-grass	CRPR 4.3	Moderate potential to occur on-site.
Birds		
coastal California gnatcatcher	FT / SSC	Observed present, foraging. Moderate potential to nest on-site.
northern harrier	SSC	Observed present, foraging. Not expected to nest on-site.
white-tailed kite	FP	Moderate potential to forage and nest on-site.
California horned lark	WL	Moderate potential to forage and nest on-site.

5.1.1 Special-Status Plant Species

Federally- and/or State-listed plant species known to occur within region of the survey area are not covered for take albeit when in compliance with the Orange County NCCP/HCP, with the exception of Laguna Beach dudleya (*Dudleya stolonifera*; FT/State-listed as threatened [ST]), which is not expected on-site. Proposed impacts to other Federally- and/or State-listed plant species – such as salt marsh bird's-beak (*Chloropyron maritimum* ssp*. maritimum*; Federally-listed as endangered [FE]/State-listed as endangered [SE]), San Diego button-celery (*Eryngium*

aristulatum var. parishii; FE/SE), and Gambel's water cress (*Nasturtium gambelii*; FE/ST) that are not expected to occur on-site– would be subject to "take" only under the provisions of FESA and/or CESA, respectively. Refer to Appendix C, *Special-Status Species Table*.

Proposed impacts to special-status species with a CRPR 1 or 2, requires California Environmental Quality Act (CEQA) disclosure; and although they warrant no legal protection, a lead agency may require mitigation in the form of off-site preservation or translocation, for example, if not covered by the Orange County NCCP/HCP. Impacts to CRPR 3 and 4 species, such as Robinson's pepper-grass are not considered significant under CEQA and warrant no legal protection but may simply require CEQA disclosure. Therefore, focused rare plant surveys prior to construction are not recommended. Refer to Appendix C for a list of special-status species known to occur within the vicinity of the survey area, and their potential to occur on-site.

5.1.2 Special-Status Wildlife Species

The proposed project has the potential to directly affect two (2) of the thirty-nine (39) Orange County NCCP/HCP "Target and Identified" Species. An individual northern harrier (SSC) was observed foraging and two individuals of coastal California gnatcatcher (FT/SSC) were observed foraging, all near the eastern center of the project site. However, the UCI is a participating landowner within the Orange County NCCP/HCP. For participating landowners, development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the Natural Community Conservation Planning Act (NCCP Act), FESA, and CESA for impacts to habitats occupied by listed and other species "identified" by the Orange County NCCP/HCP and its associated IA. Therefore, this project is exempt from any additional mitigation for impacts to "identified" species and their habitat (i.e., coastal California gnatcatcher and northern harrier).

Due to the presence of marginally suitable habitat throughout the survey area, there is a potential for direct impacts to the two (2) special-status wildlife species with a moderate potential to occur within the survey area (white-tailed kite and California horned lark) or any other special-status wildlife species present prior to and during construction. Focused pre-construction wildlife clearance surveys prior to the commencement of construction, and monitoring during construction, would be necessary to determine the presence or absence. If special-status wildlife species are detected within proposed impact areas that could result in take, measures including avoidance and/or minimization measures are recommended. If take of State- and/or Federally-listed species, such as the tricolored blackbird (*Agelaius tricolor*; State Candidate for listing as endangered), cannot be avoided, impacts would be subject to "take" only under the provisions of the CESA and/or FESA, respectively. With the implementation of MM BIO-1 and MM BIO-2, impacts to special-status wildlife species would be less than significant.

Minimization Measures

MM BIO-1: Prior to clearing, mowing, or ground-breaking activities, a qualified biologist shall conduct a focused wildlife clearance survey for special-status wildlife species with the potential to occur within the project site. Focused surveys shall be inclusive of the entire project footprint and buffer. If individuals of special-status wildlife species are found, they shall be allowed to move out of harm's way on their own accord. If they do not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate distance from the project site, unless they are a Federally- and/or State-listed species in which coordination and direction from USFWS and/or CDFW, respectively, shall be required.

MM BIO-2: During construction, prior to the end of each work day, all open pipes and trenches, for example, shall be covered adequately to prevent wildlife from falling in and getting trapped. Prior to the start of construction each day, a qualified biologist shall check the survey area, including vegetation, open pipes and trenches, and under staged vehicles, equipment, and materials. If special-status species are found, measures adherent to MM BIO-1 described above shall be implemented.

5.2 SPECIAL-STATUS VEGETATION COMMUNITIES

Seven (7) natural communities of special concern were identified during the CNDDB records search as potentially occurring within the survey area, with none being fully present. However, three (3) other special-status vegetation communities – disturbed coastal sage scrub, southern willow scrub, and mule fat scrub – were observed on-site during the survey. No other special-status vegetation communities were observed within the survey area. Permanent impacts to special-status vegetation communities, broken down by project phase, are provided in Table 3, below.

Table 3: Impacts to Special-Status Vegetation Communities

Vegetation Community/Land Use	Phase I	Phase II	Total*
Southern Willow Scrub	0	0.07	0.07
Mule Fat Scrub	0	0.19	0.19
Disturbed Coastal Sage Scrub	0	0.25	0.25
TOTAL*	**0**	**0.50**	**0.50**

* Totals may not equal to sum due to rounding.

The unnamed drainage within the Phase II portion of the survey area was mapped by the USFWS NWI as Freshwater Emergent Wetland, but more specifically as PEM1A (Palustrine, Emergent, Persistent, Temporary Flooded). Habitat types associated with this drainage (southern willow

scrub and mule fat scrub) are subject to jurisdiction of the regulatory agencies (refer to Section 5.3, below).

Impacts to disturbed and fragmented coastal sage scrub vegetation (refer to Figure 5) are considered minimal due to the disturbed nature of the survey area and surrounding landscape. However, the UCI is considered a participating landowner within the Orange County NCCP/HCP. For participating landowners, development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the NCCP Act, FESA, and CESA for impacts to habitats occupied by listed and other species "identified" by the Orange County NCCP/HCP and associated IA. Therefore, this project is exempt from any additional mitigation for impacts to "identified" species and their habitat (i.e., coastal sage scrub).

5.3 JURISDICTIONAL HYDROLOGICAL FEATURES

Located entirely within Phase II, the streambed and active banks of the unnamed drainage within the survey area are subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the CFGC, with the southern willow scrub and mule fat scrub vegetation associated with the unnamed drainage extending CDFW jurisdiction to the outer drip line of the canopy. The areas within the OHWM of the unnamed drainage do not meet the three-parameter criteria for wetland WoUS, but rather qualify as non-wetland WoUS subject to jurisdiction of the Corps pursuant to Section 404 of the Federal Clean Water Act (CWA) and Regional Water Quality Control Board (Regional Board) pursuant to CWA Section 401. There are no isolated or other features on-site classified as waters of the State subject to Section 13263 of the California Porter-Cologne Water Quality Control Act. Jurisdictional limits within the project site for each regulatory agency, broken down by project phase, are provided in Table 4, below.

Table 4: Impacts to Jurisdictional Hydrological Features

Phase	Jurisdictional Limits (acres)			
	Linear Feet	Corps/Regional Board Wetland WoUS	Corps/Regional Board Non-wetland WoUS	CDFW Streambed/Banks and Riparian Vegetation
Phase I	0	0	0	0
Phase II	448	0	0.05	0.41

Proposed impacts (i.e., alteration and/or the discharge of dredge/fill material) to jurisdictional resources require notification to and subsequent permits/authorization from CDFW for substantial streambed alteration, Regional Board for water quality impacts, and Corps for dredge and/or fill activities in non-wetland WoUS. With the implementation of MM BIO-3, impacts to jurisdictional hydrological features would be less than significant.

Minimization Measures

MM BIO-3: Prior to the commencement of construction for Phase II, mitigation to offset impacts must be agreed upon, and the appropriate permits/authorization must be procured, which includes the following:

- Corps CWA Section 404 Nationwide Permit for impacts associated with dredge and fill material to non-wetland Waters of the United States (WoUS) not exceeding 0.5 acre, whereas impacts exceeding 0.5 acre would require a Standard Individual Permit and associated Alternatives Analyses;
- Regional Board CWA Section 401 Water Quality Certification for impacts associated with dredge and fill material to WoUS; and
- CDFW CFGC Section 1602 Lake or Streambed Alteration Agreement (or other approval such as an Operation by Law letter or Letter of Non-Substantial Impact) for impacts/alteration to streambed/banks and associated riparian vegetation.

There are no jurisdictional features located within Phase I. Therefore, construction of Phase I would have no impacts on jurisdictional resources.

5.4 NESTING BIRDS AND WILDLIFE MOVEMENT

Due to the location of the proposed project, which is surrounded by previously developed land, significant impacts to wildlife corridors are not expected as a result of implementing the proposed project. However, the survey area provides habitats suitable to provide nesting opportunities for various bird species. With the implementation of MM BIO-4, impacts to nesting birds would be less than significant.

Minimization Measures

MM BIO-4: Proposed project activities shall avoid the bird breeding season (typically January through July for raptors and February through August for other avian species), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct a pre-construction nesting bird survey to determine the presence/absence, location, and status of any active nests on or adjacent to the survey area. The extent of the survey buffer area surrounding the site should be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and the CFGC and minimize the potential for project delay, nesting bird surveys shall be performed prior to project commencement.

In the event that active nests are discovered, a suitable buffer (distance to be determined by the biologist or overriding agencies) shall be established around such active nests, and no construction within the buffer allowed, until the biologist has determined that the nest(s) is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest).

It should be noted that nesting bird surveys are typically not required for construction activities occurring September through December; however, hummingbirds (Family Trochilidae), for example, are known to nest year-round.

5.5 CRITICAL HABITAT

The survey area is not located within any USFWS-designated Critical Habitat; therefore, Section 7 consultation with the USFWS will not be required for loss or adverse modification of Critical Habitat. The nearest Critical Habitat is located over 2 miles to the east, designated for coastal California gnatcatcher (FT/SSC). There would be no impact.

5.6 LOCAL POLICIES AND ORDINANCES

5.6.1 Orange County NCCP/HCP

The project site is located within the Coastal Subregion of the Orange County NCCP/HCP. However, the project site is not located within the Reserve System or identified special linkage areas. The nearest designated portion of the Orange County NCCP/HCP Reserve System is located approximately 0.25 mile west of the survey area and is separated by existing development. Implementation of the proposed project will affect a small area of disturbed coastal sage scrub vegetation community but is not expected to affect any other covered Orange County NCCP/HCP habitats.

5.6.2 City of Irvine Tree Removal Ordinance

In the event the proposed project would affect any tree(s) located along California Avenue and Bison Avenue, the necessary steps to acquire a tree removal permit would need to be taken. In compliance with the criteria set forth in the City of Irvine Code of Ordinances Section 5-7-410 – Tree Removal, impacts regarding local policies and ordinances would be less than significant.

5.7 CUMULATIVE IMPACTS

The UCI Design & Construction Services is currently making several campus improvements in addition to this project. Cumulative impacts would be limited to projects located on the UCI campus property that is zoned for these developments, all of which is surrounded by urban areas and/or land set aside as Critical Habitat for the coastal California gnatcatcher. No other projects in the vicinity are known at this time. Therefore, cumulative impacts would be less than significant.

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Appendix A: Site Photographs

Photograph 1 – Overview of the Phase I portion of the project site in the southern portion of the survey area, facing southeast.

Photograph 2 – Overview of the Phase II portion of the project site in the central portion of the survey area, facing northwest.

Photograph 3 – View of western portion of the project site and survey area, facing north.

Photograph 4 – View of disturbed coastal sage scrub adjacent to existing parking lots and the UCI Health Sciences Center and School of Medicine, facing east.

Photograph 5 – View of southern willow scrub at the upstream end of the unnamed drainage, facing north.

Photograph 6 – View of mule fat scrub at the north end of the survey area, facing northeast.

Photograph 7 – Developed and ornamental land uses along the western boundary of the project site and California Avenue, facing north.

Photograph 8 – Ornamental garden and developed land uses adjacent to one of existing UCI Health Sciences Campus buildings at the south end of the survey area, facing southeast.

Appendix B: Plant and Wildlife Species Observed List

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
Plants		
*Acacia redolens**	bank catclaw	
Acmispon glaber	deerweed	
*Agave americana**	blue agave	
Artemisia californica	California sagebrush	
Atriplex lentiformis	big saltbush	
*Atriplex rosea**	tumbling saltweed	
*Atriplex semibaccata**	Australian saltbush	Moderate
*Avena fatua**	wild oat	Moderate
Baccharis salicifolia	mule fat	
Baccharis pilularis	coyote brush	
Baccharis sarathroides	broom baccharis	
*Brassica nigra**	black mustard	Moderate
*Bromus diandrus**	common ripgut grass	Moderate
*Bromus rubens**	red brome	High
Calystegia macrostegia	island morning glory	
*Carpobrotus edulis**	iceplant	High
*Centaurea melitensis**	tocalote	Moderate
*Chenopodium murale**	nettle leaf goosefoot	
Cucurbita foetidissima	calabazilla	
*Cynara cardunculus**	artichoke thistle	Moderate
Distichlis spicata	saltgrass	
Encelia californica	California sunflower	
Encelia farinosa	brittlebush	
Erigeron bonariensis	flax-leaved horseweed	
Eriogonum fasciculatum	California buckwheat	
*Erodium botrys**	longbeak filaree	
*Erodium cicutarium**	redstem filaree	Limited
*Erodium moschatum**	whitestem filaree	
*Eucalyptus citriodora**	lemon scented gum	
*Euphorbia maculata**	spotted spurge	
Grindelia camporum	common gumplant	
Heterotheca grandiflora	telegraph weed	
*Hirschfeldia incana**	short-pod mustard	Moderate
Isocoma menziesii	goldenbush	
*Lactuca serriola**	prickly lettuce	
Lupinus succulentus	arroyo lupine	
*Lysimachia arvensis**	scarlet pimpernel	
Malosma laurina	laurel sumac	

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
*Malva parviflora**	cheeseweed	
*Medicago polymorpha**	bur clover	Limited
*Mesembryanthemum nodiflorum**	small-flowered iceplant	Limited
Muhlenbergia rigens	deergrass	
*Myoporum parvifolium**	slender myoporum	
Oenothera elata ssp. *hookeri*	evening primrose	
*Opuntia ficus-indica**	mission cactus	
Opuntia littoralis	prickly pear cactus	
*Oxalis pes-caprae**	Bermuda buttercup	Moderate
Platanus racemosa	western sycamore (ornamental)	
Populus fremontii	Fremont cottonwood	
*Punica granatum**	pomegranate	
Quercus agrifolia	coast live oak	
*Quercus ilex**	holly oak	
Salix lasiolepis	arroyo willow	
*Salsola tragus**	Russian thistle	Limited
Solanum americanum	common nightshade	
*Sonchus asper**	prickly sowthistle	
*Sonchus oleraceus**	common sowthistle	
Stephanomeria virgata	twiggy wreath plant	
Stipa pulchra	purple needle grass	
*Ulmus parvifolia**	Chinese elm	
Yucca schidigera	Mohave yucca	
Reptiles		
Sceloporus occidentalis longipes	Great Basin fence lizard	
Birds		
Buteo lineatus	red-shouldered hawk	
Calypte anna	Anna's hummingbird	
Circus hudsonius	northern harrier	SSC
Corvus brachyrhynchos	American crow	
Haemorhous mexicanus	house finch	
Melozone crissalis	California towhee	
Polioptila californica californica	coastal California gnatcatcher	FT/SSC
Psaltriparus minimus	bushtit	
Sayornis nigricans	black phoebe	
Setophaga coronata	yellow-rumped warbler	
Spinus psaltria	lesser goldfinch	
Tyrannus vociferans	Cassin's kingbird	
Zenaida macroura	mourning dove	

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
Zonotrichia leucophrys	white-crowned sparrow	
Mammals		
Canis latrans	coyote	

* Non-native species

** **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

***** Special-Status Classifications**

FT Federally Threatened
SSC California Species of Special Concern

Appendix C: Special-Status Species Table

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Plants			
Abronia maritima **red sand-verbena**	-- / -- 4.2	Perennial herb. Blooms February through December. Generally associated with coastal dunes. Known elevations range from 0 to 300 feet above mean sea level (amsl).	**Not Expected.** Suitable habitat (coastal dunes) is not present within the survey area. Further, the nearest occurrence is over 5 miles to the west.
Abronia villosa var**.** *aurita* **chaparral sand-verbena**	-- / -- 1B.1	Annual herb. Blooms January through September. Occurs in sandy areas in chaparral, coastal scrub, and desert dunes. Known elevations range from 50 to 4,985 feet amsl.	**Low.** Suitable habitat (coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 5 miles to the west.
Aphanisma blitoides **aphanisma**	-- / -- 1B.2	Annual herb. Blooms March through June. Found in coastal scrub and dunes along bluffs and slopes near the ocean in sandy or clay soils. Known elevations range from 0 to 560 feet amsl.	**Not Expected.** Suitable habitat (bluffs and slopes near the ocean, sandy or clay soils) is not present within the survey area. Further, the nearest occurrence is over 1.5 miles to the west.
Atriplex coulteri **Coulter's saltbush**	-- / -- 1B.2	Perennial herb. Blooms March through October. Generally associated with alkaline or clay soils that occur in grasslands and coastal bluff habitats. Known elevations range from 30 to 1,440 feet amsl.	**Low.** Suitable habitat (clay soils) is marginally present within the survey area. The nearest occurrence is approximately 0.5 mile to the northwest.
Atriplex pacifica **south coast saltscale**	-- / -- 1B.2	Annual herb. Blooms March through October. Occurs on alkaline soils in coastal scrub, coastal bluff, and playas. Known elevations range from 3 to 1,640 feet amsl.	**Not Expected.** Suitable habitat (alkaline soils) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the west.
Atriplex parishii **Parish's brittlescale**	-- / --- 1B.1	Annual herb. Blooms April through October. Found in alkaline soils within coastal bluff scrub and coastal scrub. Known elevations range from 100 to 1,540 feet amsl.	**Not Expected.** Suitable habitat (alkaline soils) is not present within the survey area. Further, the nearest occurrence is over 7 miles to the southeast.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Atriplex serenana var. *davidsonii* **Davidson's saltscale**	-- / -- 1B.2	Annual herb. Blooms April through October. Occurs in coastal bluff scrub and coastal scrub on alkaline soils. Known elevations range from 30 to 660 feet amsl.	**Not Expected.** Suitable habitat (alkaline soils) is not present within the survey area. Further, the nearest occurrence is over 0.5 mile to the northwest.
Calochortus catalinae **Catalina mariposa lily**	-- / -- 4.2	Perennial herb (bulb). Blooms March through June (sometimes as early as February). Found in heavy soils, open slopes, and openings in valley and foothill grassland, chaparral, coastal scrub, and cismontane woodland. Known elevations range from 45 to 4,725 feet amsl.	**Low.** Suitable habitat (valley and foothill grassland and coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 3 miles to the northeast.
Calochortus weedii var. *intermedius* **intermediate mariposa-lily**	-- / -- 1B.2	Perennial herb (bulb). Blooms May through July. Found in chaparral, coastal sage scrub, and valley and foothill grasslands, as well as rocky outcrops. Known elevations range from 55 to 4,135 feet amsl.	**Low.** Suitable habitat (valley and foothill grassland and coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 3 miles to the east.
Camissoniopsis lewisii **Lewis' evening-primrose**	-- / -- 3	Annual herb. Blooms March through June. Occurs on sandy or clay soils in valley and foothill grassland, coastal bluff scrub, cismontane woodland, coastal dunes, and coastal scrub. Known elevations range from 0 to 1,740 feet amsl.	**Low.** Suitable habitat (valley and foothill grassland and coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 3 miles to the northeast.
Centromadia parryi ssp. *australis* **southern tarplant**	-- / -- 1B.1	Annual herb. Blooms March through October. Often found in disturbed sites near the coast at marsh edges; also, in alkaline soils, sometimes with saltgrass (*Distichlis spicata*). Sometimes in grasslands and on vernal pool margins. Known elevations range from 0 to 3,200 feet amsl.	**Low.** Suitable habitat (disturbed sites with saltgrass and grasslands) is marginally present within the survey area. However, the nearest occurrence is over 0.5 mile to the northwest.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Chaenactis glabriuscula var. *orcuttiana* **Orcutt's pincushion**	-- / -- 1B.1	Annual herb. Blooms January through August. Occurs on sandy sites within coastal bluff scrub and coastal dunes. Known elevations range from 0 to 460 feet amsl.	**Not Expected.** Suitable habitat (coastal bluff scrub and coastal dunes) is not present within the survey area. Further, the nearest occurrence is approximately 8 miles to the southeast.
Chloropyron maritimum ssp**.** *maritimum* **salt marsh bird's-beak**	FE / SE 1B.2	Annual herb. Blooms May through October. Limited to the higher zones of marshes and swamps, along with coastal dunes. Known elevations range from 0 to 35 feet amsl.	**Not Expected.** Suitable habitat (marshes, swamps, and coastal dunes) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the southwest.
Cistanthe maritima **seaside cistanthe**	-- / -- 4.2	Annual herb. Blooms March through June. Occurs in sandy sites within coastal bluff scrub, coastal scrub, and valley and foothill grassland. Known elevations range from 50 to 590 feet amsl.	**Low.** Suitable habitat (sandy sites in coastal scrub and valley and foothill grassland) is marginally present within the survey area. However, the nearest occurrence is over 6 miles to the southeast.
Comarostaphylis diversifolia ssp. *diversifolia* **summer holly**	-- / -- 1B.2	Shrub. Blooms April through June. Often in mixed chaparral and cismontane woodland, sometimes in post-burn areas. Known elevations range from 130 to 1,835 feet amsl.	**Not Expected.** Suitable habitat (mixed chaparral and cismontane woodland) is not present within the survey area. Further, the nearest occurrence is approximately 10 miles to the southeast.
Convolvulus simulans **small-flowered morning-glory**	-- / -- 4.2	Annual herb. Blooms March through July. Occurs on wet clay, serpentine ridges in chaparral, coastal scrub, and valley and foothill grassland. Known elevations range from 30 to 2,760 feet amsl.	**Not Expected.** Suitable habitat (wet clay, serpentine ridges) is not present within the survey area. Further, the nearest occurrence is approximately 4 miles to the northeast.
Deinandra paniculata **paniculate tarplant**	-- / -- 4.2	Annual herb. Blooms March through November. Found on vernally mesic sites, sometimes vernal pools or surrounding mima mounds, in coastal scrub and valley and foothill grassland. Known elevations range from 55 to 4,070 feet amsl.	**Not Expected.** Suitable habitat (vernally mesic sites) is not present within the survey area. Further, the nearest occurrence is approximately 6 miles to the southeast.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Dichondra occidentalis **western dichondra**	-- / -- 4.2	Perennial herb. Blooms March through July. Found on sandy loam, clay, and rocky soils in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Known elevations range from 130 to 1,510 feet amsl.	**Low.** Suitable habitat (sandy loam in coastal scrub and valley and foothill grassland) is marginally present within the survey area. However, the nearest occurrence is approximately 6 miles to the southeast.
Dudleya multicaulis **many-stemmed dudleya**	-- / -- 1B.2	Perennial herb. Blooms April through July. Occurs on heavy, often clayey soils or grassy slopes in chaparral, coastal scrub, and valley and foothill grassland habitats. Known elevations range from 45 to 3,280 feet amsl.	**Low.** Suitable habitat (grassy slopes in coastal scrub and valley and foothill grassland) is marginally present within the survey area. However, the nearest occurrence is approximately 0.5 mile to the east.
Dudleya stolonifera **Laguna Beach dudleya**	FT / ST 1B.1	Perennial herb (stoloniferous). Blooms May through July. Found on thin soils of north-facing sandstone cliffs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Known elevations range from 15 to 855 feet amsl.	**Not Expected.** Suitable habitat (sandstone cliffs) is not present within the survey area. Further, the nearest occurrence is over 6 miles to the east.
Eryngium aristulatum var**.** *parishii* **San Diego button-celery**	FE / SE 1B.1	Annual, perennial herb. Blooms April through June. Found in San Diego mesa hardpan and claypan vernal pools, southern interior basalt flow vernal pools in coastal scrub and valley and foothill grassland. Known elevations range from 115 to 2,495 feet amsl.	**Not Expected.** Suitable habitat (vernal pools) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the west.
Euphorbia misera **cliff spurge**	-- / -- 2B.2	Shrub. Blooms December through August. Found on rocky sites in coastal bluff scrub, coastal scrub, and Mojavean desert scrub. Known elevations range from 0 to 920 feet amsl.	**Not Expected.** Suitable habitat (rocky sites in coastal scrub) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the south.

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Helianthus nuttallii ssp. *parishii* **Los Angeles sunflower**	-- / -- 1A	Perennial herb (rhizomatous). Blooms August through October. Occurs in marshes, swamps, and on damp river banks. Believed to be extirpated. Known elevations range from 15 to 5,495 feet amsl.	**Not Expected.** Suitable habitat (marshes, swamps, damp river banks) is not present within the survey area. Further, the nearest occurrence is approximately 2 miles to the west.
Hordeum intercedens **vernal barley**	-- / -- 3.2	Annual herb. Blooms March through June. Occurs in vernal pools, dry, saline streambeds, and alkaline flats of valley and foothill grassland, coastal dunes, and coastal scrub habitats. Known elevations range from 15 to 3,280 feet amsl.	**Not Expected.** Suitable habitat (vernal pools, dry, saline streambeds, and alkaline flats) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the northeast.
Horkelia cuneata var. *puberula* **mesa horkelia**	-- / -- 1B.1	Perennial herb. Blooms February through July. Found on sandy or gravelly areas within chaparral, cismontane woodland, and coastal scrub. Known elevations range from 460 to 2820 feet amsl.	**Low.** Suitable habitat (sandy or gravelly areas in coastal scrub) is marginally present within the survey area. Further, the nearest occurrence is approximately 3 miles to the south.
Isocoma menziesii var. decumbens **decumbent goldenbush**	-- / -- 1B.2	Shrub. Blooms April through November. Found on sandy soils within coastal scrub and chaparral, as well as disturbed sites. Known elevations range from 65 to 1640 feet amsl.	**Low.** Suitable habitat (sandy soils in coastal scrub and disturbed sites) is marginally present within the survey area. However, the nearest occurrence is approximately 3 miles to the south.
Juncus acutus ssp. *leopoldii* **southwestern spiny rush**	-- / -- 4.2	Perennial grass. Blooms May through June. Found in most saline places in salt marshes, alkaline seeps, and coastal dunes (mesic sites). Known elevations range from 0 to 1,310 feet amsl.	**Not Expected.** Suitable habitat (salt marshes, alkaline seeps, and coastal dunes) is not present within the survey area. Further, the nearest occurrence is over 5 miles to the west.
Lasthenia glabrata ssp. *coulteri* **Coulter's goldfields**	-- / -- 1B.1	Annual herb. Blooms February through June. Usually found in alkaline soils in marshes, playas, vernal pools, and valley and foothill grasslands. Known elevations range from 3 to 4,595 feet amsl.	**Low.** Suitable habitat (alkaline soils) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the north.

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Lepidium virginicum var. *robinsonii* **Robinson's pepper-grass**	-- / -- 4.3	Annual herb. Blooms January through July. Found in chaparral and coastal sage scrub. Occurs in dry soils and shrubland between 0 and 4,400 feet amsl.	**Moderate.** Suitable habitat (dry soils in coastal sage scrub) is marginally present within the survey area. Further, the nearest occurrence is less than 0.5 mile to the southeast.
Lycium californicum **California box-thorn**	-- / -- 4.2	Shrub. Blooms March through August. Found within coastal bluff scrub and coastal scrub. Known elevations range from 0 to 525 feet amsl.	**Not Expected.** Suitable habitat (coastal scrub) is marginally present within the survey area. However, this perennial shrub species was not observed during the survey and the nearest occurrence is over 6 miles to the southeast.
Malacothrix saxatilis var. *saxatilis* **cliff aster**	-- / -- 4.2	Perennial herb. Blooms March through September. Found within coastal bluff scrub and coastal scrub. Known elevations range from 15 to 100 feet amsl.	**Low.** Suitable habitat (coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 6 miles to the southeast.
Nama stenocarpa **mud nama**	-- / -- 2B.2	Annual herb. Blooms March through May. Grows on the muddy embankments of ponds and lakes. Also reported to utilize river embankments. Known elevations range from 15 to 1,640 feet amsl.	**Not Expected.** Suitable habitat (muddy embankments of ponds, lakes, and rivers) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the northeast.
Nasturtium gambelii **Gambel's water cress**	FE / ST 1B.1	Perennial herb (rhizomatous). Blooms April through October. Found in freshwater and brackish marshes at the margins of lakes and along streams, in or just above the water level. Known elevations range from 15 to 2,560 feet amsl.	**Not Expected.** Suitable habitat (freshwater and brackish marshes) is not present within the survey area. Further, the nearest occurrence is approximately 7 miles to the north.
Navarretia prostrata **prostrate vernal pool navarretia**	-- / -- 1B.1	Annual herb. Blooms April through July. Found in alkaline soils in grassland and vernal pools, along with coastal scrub, meadows, seeps, and mesic, alkaline site. Known elevations range from 65 to 490 feet amsl.	**Not Expected.** Suitable habitat (alkaline soils) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the west.

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Nemacaulis denudata var**.** *denudata* **coast woolly-heads**	-- / -- 1B.2	Annual herb. Blooms April through September. Found in coastal dunes. Known elevations range from 0 to 35 feet amsl.	**Not Expected.** Suitable habitat (coastal dunes) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the southwest.
Orcuttia californica **California Orcutt grass**	FE / SE 1B.1	Annual grass. Blooms April through August. Found in vernal pools. Known elevations range from 460 to 2,200 feet amsl.	**Not Expected.** Suitable habitat (vernal pools) is not present within the survey area. Further, the site is outside of the known elevation range for this species and the nearest occurrence is approximately 5 miles to the west.
Pentachaeta aurea ssp. *allenii* **Allen's pentachaeta**	-- / -- 1B.1	Annual herb. Blooms March through June. Occurs in coastal scrub openings and valley and foothill grasslands. Known elevations range from 225 to 1,560 feet amsl.	**Not Expected.** Suitable habitat (coastal scrub openings, valley and foothill grassland) is marginally present within the survey area. However, the site is outside of the known elevation range for this species and the nearest occurrence is over 3 miles to the east.
Phacelia ramosissima var. *austrolitoralis* **south coast branching phacelia**	-- / -- 3.2	Perennial herb. Blooms March through August. Found in sandy, sometimes rocky sites within chaparral, coastal scrub, coastal dunes, and coastal salt marsh. Known elevations range from 15 to 720 feet amsl.	**Low.** Suitable habitat (sandy sites in coastal scrub) is marginally present within the survey area. However, the nearest occurrence is approximately 6 miles to the northwest.
Quercus dumosa **Nuttall's scrub oak**	-- / -- 1B.1	Shrub. Blooms February through March. Found on sandy soils near the coast and sometimes on clay loam within closed-cone coniferous forest, chaparral, and coastal scrub. Known elevations range from 50 to 4,035 feet amsl.	**Not Expected.** Suitable habitat (sandy soils in coastal scrub) is marginally present within the survey area. However, this perennial shrub species was not observed during the survey and the nearest occurrence is approximately 3 miles to the southwest.

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Sagittaria sanfordii **Sandford's arrowhead**	-- / -- 1B.2	Perennial herb (rhizomatous). Blooms May through October. Found in standing or slow-moving freshwater ponds, marshes, and ditches. Known elevations range from 0 to 1,180 feet amsl.	**Not Expected.** Suitable habitat (freshwater ponds, marshes, and ditches) is not present within the survey area. Further, the nearest occurrence is approximately 6 miles to the northwest
Senecio aphanactis **chaparral ragwort**	-- / -- 2B.2	Annual herb. Blooms January through April. Occurs on drying alkaline flats in chaparral, cismontane woodland, and coastal scrub. Known elevations range from 45 to 2,625 feet amsl.	**Not Expected.** Suitable habitat (drying alkaline flats) is not present within the survey area. The nearest occurrence is approximately 0.5 mile to the southeast.
Sidalcea neomexicana **salt spring checkerbloom**	-- / -- 2B.2	Perennial herb. Blooms March through June. Occurs in alkali springs, marshes, and playas in chaparral, coastal scrub, lower montane coniferous forest, and Mojavean desert scrub. Known elevations range from 0 to 7,810 feet amsl.	**Not Expected.** Suitable habitat (alkaline springs, marshes, and playas) is not present within the survey area. Further, the nearest occurrence is approximately 7 miles to the north.
Suaeda esteroa **estuary seablite**	-- / -- 1B.2	Perennial herb. Blooms June through October (sometimes May through January). Found on clay, silt, and sand substrates in coastal salt marshes and swamps. Known elevations range from 0 to 395 feet amsl.	**Not Expected.** Suitable habitat (coastal salt marshes and swamps) is not present within the survey area. Further, the nearest occurrence is approximately 1.5 miles to the west.
Symphyotrichum defoliatum **San Bernardino aster**	-- / -- 1B.2	Perennial herb (rhizomatous). Blooms July through November. Grows in vernally mesic sites and disturbed areas or near ditches, streams, and springs in meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, and valley and foothill grassland. Known elevations range from 5 to 6,695 feet in elevation amsl.	**Low.** Suitable habitat (vernally mesic streams) is marginally present within the survey area. Further, this perennial species was not observed during the survey and the nearest occurrence is approximately 2 miles to the west.

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Verbesina dissita **big-leaved crownbeard**	FT / ST 1B.1	Perennial herb. Blooms April through July (sometimes as early as March). Found on gravelly soils of steep, rocky, primarily north-facing slopes in coastal scrub and maritime chaparral less than 1.5 miles from the ocean. Known elevations range from 145 to 955 feet amsl.	**Not Expected.** Suitable habitat (gravelly soils on north-facing slopes) is not present within the survey area. Further, the nearest occurrence is approximately 11 miles to the southeast.
Invertebrates			
Bombus crotchii **Crotch bumble bee**	-- / -- G3G4 / S1S2	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Low.** A host plant (*Eriogonum*) is marginally present within the survey area. However, the nearest occurrence is over 4 miles to the southwest.
Branchinecta sandiegonensis **San Diego fairy shrimp**	FE / --	Endemic to San Diego and Orange County mesas. Found within small, shallow vernal pools which range in depth from 2-12in and in water temperature from 50-68F.	**Not Expected.** Suitable habitat (vernal pools) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the west.
Cicindela gabbii **western tidal-flat tiger beetle**	-- / -- G2G4 / S1	Inhabits estuaries and mudflats along the coast of Southern California. Generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries.	**Not Expected.** Suitable habitat (estuaries and mudflats) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the southwest.
Cicindela hirticollis gravida **sandy beach tiger beetle**	-- / -- G5T2 / S2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Found in clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	**Not Expected.** Suitable habitat (areas adjacent to non-brackish water along the coast) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the southwest.

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Cicindela latesignata latesignata **western beach tiger beetle**	-- / -- G2G4T1T2 / S1	Found in mudflats and beaches in coastal Southern California.	**Not Expected.** Suitable habitat (mudflats and beaches) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the southwest.
Coelus globosus **globose dune beetle**	-- / -- G1G2 / S1S2	Inhabits foredunes and sand hummocks of coastal sand dune habitat. It burrows beneath the sand surface and is most common beneath dune vegetation. Erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico.	**Not Expected.** Suitable habitat (foredunes and sand hummocks) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the southwest.
Danaus plexippus pop. 1 **monarch - California overwintering population**	-- / -- G4T2T3 / S2S3	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.	**Not Expected.** Suitable habitat (wind-protected tree groves) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the southeast.
Panoquina errans **wandering skipper**	-- / -- G4G5 / S2	Found in Southern California coastal salt marshes, ocean bluffs, and other open areas near the ocean. Requires moist saltgrass for larval development.	**Not Expected.** Suitable habitat (coastal salt marshes and ocean bluffs) is not present within the survey area. Further, the nearest occurrence is over 6 miles to the west.
Tryonia imitator **mimic tryonia (California brackishwater snail)**	-- / -- G2 / S2	Inhabits coastal lagoons, estuaries, salt marshes, and where creek mouths that join tidal marshes from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**Not Expected.** Suitable habitat (coastal lagoons, estuaries, and salt marshes) is not present within the survey area. Further, the nearest occurrence is approximately 2 miles to the west.

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Fish			
Eucyclogobius newberryi **tidewater goby**	FE / SSC G3 / S3	Found in brackish water within shallow lagoons and lower stream reaches and need fairly still but not stagnant water and high oxygen levels. Distributed along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.	**Not Expected.** Suitable habitat (brackish water) is not present within the survey area. Further, the nearest occurrence is approximately 11 miles to the southeast.
Oncorhynchus mykiss irideus pop. 10 **steelhead – southern California DPS**	FE / -- G5T1Q / S1	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions. Occurs in south coast flowing waters.	**Not Expected.** Suitable habitat (south coast flowing waters) is not present within the survey area. Further, the nearest occurrence is approximately 10 miles to the southeast.
Amphibians			
Spea hammondii **western spadefoot**	-- / SSC G3 / S3	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Not Expected.** Suitable breeding habitat (rain pools) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the east.
Reptiles			
Aspidoscelis hyperythra **orange-throated whiptail**	-- / WL G5 / S2S3	Inhabits low-elevation coastal scrub, chaparral, and cismontane woodlands. Prefers washes and other sandy areas with patches of brush and rocks. Often found on the edge of intact vegetation and disturbed areas. Perennial plants necessary for its primary food, termites.	**Low.** Suitable habitat (edge of intact vegetation and disturbed areas, perennial plants) is marginally present within the survey area. However, the nearest occurrence is over 3 miles to the east.

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Crotalus ruber **red-diamond rattlesnake**	-- / SSC G4 / S3	Found in chaparral, woodland, grassland, and desert scrub habitats from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, and cracks in rocks or surface cover objects.	**Not Expected.** Suitable habitat (rocky, densely vegetated areas) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the southeast.
Emys marmorata **western pond turtle**	-- / SSC G3G4 / S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually found with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers from water for egg-laying. Found between 0 and 6,000 feet amsl in elevation.	**Not Expected.** Suitable habitat (ponding, open waters) is not present within the survey area. The nearest occurrence is approximately 0.5 mile to the north.
Phrynosoma blainvillii **coast horned lizard**	-- / SSC G3G4 / S3S4	Frequents a wide variety of habitats, including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest, along sandy washes with scattered low bushes. Prefers open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants and other insects.	**Low.** Suitable habitat (coastal sage scrub and annual grassland) is marginally present within the survey area. However, the nearest occurrence is over 3 miles to the south.
Birds			
Accipiter cooperii (Nesting) **Cooper's hawk**	-- / WL G5 / S4	Generally found in forested areas up to 3,000 feet amsl, especially near edges and rivers. Prefers hardwood stands and mature forests but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	**Low.** Suitable nesting habitat (tall trees) is marginally present within the survey area. This species may forage in the area. However, the nearest occurrence is approximately 5 miles to the northeast.

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Agelaius tricolor (Nesting colony) **tricolored blackbird**	-- / SCE, SSC G2G3 / S1S2	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California.	**Not Expected.** Suitable nesting habitat (open water, protected nesting substrate) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the northeast.
Aimophila ruficeps canescens **southern California rufous-crowned sparrow**	-- / WL G5T3 / S3	Frequents relatively steep, often rocky hillsides with grass and forb patches in coastal sage scrub and sparse mixed chaparral habitats.	**Not Expected.** Suitable habitat (rocky hillsides in coastal sage scrub) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the east.
Ammodramus savannarum (Nesting) **grasshopper sparrow**	-- / SSC G5 / S3	Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting. Occurs in dense grasslands on rolling hills, lowland plains, in valleys, and on hillsides on lower mountain slopes.	**Low.** Suitable nesting habitat (native grasses, scattered shrubs) is marginally present within the survey area. However, the nearest occurrence is approximately 1 mile to the north.
Athene cunicularia (Burrow sites and some wintering sites) **burrowing owl**	-- / SSC G4 / S3	Primarily found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation, but it persists and even thrives in some landscapes highly altered by human activity, such as earthen canals, berms, rock piles, and pipes. Subterranean nester, most often dependent upon burrowing mammals, most notably, the California ground squirrel (*Otospermophilus beecheyi*).	**Low.** Suitable nesting and wintering habitat (annual grasslands, low-growing vegetation) is present within the survey area. However, no suitable burrows or ground squirrels were observed during the survey. Further, the nearest occurrence is approximately 1 mile to the west.
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only) **coastal cactus wren**	-- / SSC G5T3Q / S3	From southern Ventura County and southwestern San Bernardino County to northwestern Baja California, occupies coastal sage scrub largely consisting of tall stands of coastal prickly pear (*Opuntia littoralis*) or cholla (*Cylindropuntia* spp.) cacti for nesting and roosting.	**Not Expected.** Suitable habitat (tall stands of cacti) is not present within the survey area. The nearest occurrence is approximately 0.5 miles to the southeast.

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Charadrius alexandrinus nivosus (Nesting) **western snowy plover**	FT / SSC G3T3 / S2S3	Occurs on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	**Not Expected.** Suitable nesting habitat (beaches, levees, and shores) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the southwest.
Circus hudsonius (Nesting) **northern harrier**	-- / SSC G5 / S3	Found near coastal salt and freshwater marshes. Nests and forages in grasslands, from saltgrass in desert sink to mountain cienagas. Nests on the ground in shrubby vegetation, usually at marsh edges; nest built of a large mound of sticks in wet areas.	**Present (foraging).** An individual was observed foraging on-site during the survey. However, suitable nesting habitat (marsh edges) is not present within the survey area. Further, there are no documented occurrences within the records search.
Coccyzus americanus occidentalis (Nesting) **western yellow-billed cuckoo**	FT / SE G5T2T3 / S1	Obligate willow-cottonwood riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow (*Salix* spp.), often mixed with cottonwoods (*Populus* spp.), with the lower story dominated by blackberry (*Rubus* spp.), nettles (*Urtica* spp.), and/or wild grape (*Vitis* spp.).	**Not Expected.** Suitable nesting habitat (broad riparian forests) is not present within the survey area. Further, the nearest occurrence is approximately 7 miles to the north.
Coturnicops noveboracensis **yellow rail**	-- / SSC G4 / S1S2	Occurs in freshwater marshlands. Summer resident in eastern Sierra Nevada in Mono County.	**Not Expected.** Suitable habitat (freshwater marshlands) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the southwest.
Elanus leucurus (Nesting) **white-tailed kite**	-- / FP G5 / S3S4	Often found in rolling foothills and valley margins with scattered oaks, riparian bottomlands, or marshes next to deciduous woodlands. Prefers isolated, dense-topped trees for nesting and perching near open valley and foothill grasslands, meadows, or marshes for foraging.	**Moderate.** Suitable nesting habitat (dense-topped trees) is present within the survey area, and this species may forage in the area. Further, the nearest occurrence is approximately 0.5 mile to the southeast.

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Empidonax traillii extimus (Nesting) **southwestern willow flycatcher**	FE / SE G5T2 / S1	Occurs in broad riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys and canyon bottoms, or around ponds and lakes. These areas typically have standing or running water or are at least moist.	**Not Expected.** Suitable nesting habitat (broad riparian woodlands) is not present within the survey area. Further, there are no documented occurrences within the records search.
Eremophila alpestris actia **California horned lark**	-- / WL G5T4Q / S4	Found in open areas dominated by sparse low herbaceous vegetation or widely scattered low shrubs. Nests in hollow on ground often next to grass tufts or clods of earth or manure. Known from coastal regions, chiefly from Sonoma County to San Diego County, including main part of San Joaquin Valley and east to the foothills.	**Moderate.** Suitable habitat (low herbaceous vegetation with widely scattered low shrubs) is marginally present within the survey area. The nearest occurrence is approximately 0.5 mile to the southeast.
Icteria virens (Nesting) **yellow-breasted chat**	-- / SSC G5 / S3	Summer resident that inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, and wild grape. Breeding habitat must be dense to provide shade and concealment. Forages and nests within 10 feet of ground.	**Low.** Suitable nesting habitat (dense riparian thickets) is not present within the survey area; however, this species may forage in the area. The nearest occurrence is approximately 0.5 mile to the north.
Laterallus jamaicensis coturniculus **California black rail**	-- / ST, FP G3G4T1 / S1	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of approximately 1 inch that do not fluctuate during the year, and dense upland buffer and marsh vegetation for nesting habitat.	**Not Expected.** Suitable habitat (marshes and wet meadows) is not present within the survey area. Further, the nearest occurrence is approximately 2 miles to the west.

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Pandion haliaetus **osprey**	-- / WL G5 / S4	Found along ocean shores, bays, freshwater lakes, and larger streams. Builds large nests in tree-tops within 15 miles of a good fish-producing body of water.	**Not Expected.** Suitable habitat (ocean shores, bays, freshwater lakes, and larger streams) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the southwest.
Passerculus sandwichensis beldingi **Belding's savannah sparrow**	-- / SE G5T3 / S3	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in pickleweed (*Salicornia* spp.) on and around margins of tidal flats.	**Not Expected.** Suitable habitat (coastal salt marshes) is not present within the survey area. Further, the nearest occurrence is approximately 2 miles to the west.
Polioptila californica californica **coastal California gnatcatcher**	FT / SSC G4G5T2Q / S2	Obligate, permanent resident of coastal sage scrub below 2,500 feet amsl in Southern California. Occurs in low, coastal sage scrub in arid washes, and on mesas, bowls, and slopes lacking tall perching vegetation. Not all areas classified as coastal sage scrub are occupied.	**Present.** Two individuals were observed on-site during the survey. Suitable habitat (coastal sage scrub lacking tall perching vegetation) is marginally present within the survey area. There are 35 documented occurrences within the records search.
Rallus obsoletus levipes **light-footed Ridgway's rail**	FE / SE, FP G5T1T2 / S1	Found in salt marshes traversed by tidal sloughs, where dense growths of cordgrass (*Spartina foliosa*) and pickleweed dominate for nesting. Requires shallow water and mudflats for foraging on mollusks and crustaceans, with adjacent higher vegetation for cover during high water.	**Not Expected.** Suitable habitat (salt marshes) is not present within the survey area. The nearest occurrence is over 1 mile to the north.
Riparia riparia **bank swallow**	-- / ST G5 / S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and oceans to dig nesting holes.	**Not Expected.** Suitable habitat (vertical banks/cliffs in riparian areas) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the southwest.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Setophaga petechia **yellow warbler**	-- / SSC G5 / S3S4	Found in riparian plant associations near water. Also nests in montane shrubbery in open conifer forests in the Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores (*Platanus racemosa*), ash (*Fraxinus* spp.), and alder (*Alnus* spp.*)*.	**Low.** Suitable habitat (riparian areas near water) is marginally present within the survey area. However, the nearest occurrence is over 5 miles to the west.
Sternula antillarum browni (Nesting colony) **California least tern**	FE / SE, FP G4T2T3Q / S2	Colonial breeder on bare or sparsely vegetated, flat substrates, including sand beaches, alkali flats, landfills, or paved areas. Prefers broad, level expanses of open sandy or gravelly beach, dredge spoil, and other open shoreline areas, and broad river valley sandbars. Nests along the coast from San Francisco Bay south to northern Baja California.	**Not Expected.** Suitable nesting habitat (sandy or gravelly beaches) is not present within the survey area. Further, the nearest occurrence is approximately 1 mile to the west.
Vireo bellii pusillus (Nesting) **least Bell's vireo**	FE / SE G5T2 / S2	Primarily occupies riverine riparian habitats that typically feature a dense, stratified canopy and herbaceous wetland understory. Nests within 1-2 meters of the ground. Summer resident of Southern California below 2,000 feet amsl.	**Low.** Suitable nesting habitat (riverine riparian habitats with herbaceous wetland understory) is not present within the survey area. However, the nearest CNDDB occurrence is approximately 0.5 mile to the south.
Mammals			
Choeronycteris mexicana **Mexican long-tongued bat**	-- / SSC G4 / S1	Occasionally found in San Diego County, which is on the periphery of their range. Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves, and in and around buildings.	**Low.** Suitable roosting habitat (buildings) is marginally present within the survey area; however, foraging habitat (night-blooming succulents) is not. Further, the nearest occurrence is approximately 7 miles to the north.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Eumops perotis californicus **western mastiff bat**	-- / SSC G5T4 / S3S4	Primarily a cliff-dwelling species, occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts on cliff faces, high buildings, trees, and tunnels.	**Low.** Suitable roosting habitat (tall buildings and trees) is marginally present within the survey area; however, this species is likely to forage in the area. The nearest occurrence is approximately 1 mile to the north.
Lasiurus cinereus **hoary bat**	-- / -- G5 / S4	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Low.** Suitable roosting habitat (medium to large trees) is marginally present within the survey area. However, the nearest occurrence is over 4 miles to the southwest.
Nyctinomops macrotis **big free-tailed bat**	-- / -- G5 / S3	Found in low-lying arid areas in Southern California. Needs high cliffs on rocky outcrops for roosting sites. Feeds principally on large moths.	**Not Expected.** Suitable roosting habitat (high cliffs on rocky outcrops) is not present within the survey area. Further, the nearest occurrence is over 3 miles to the south.
Perognathus longimembris pacificus **Pacific pocket mouse**	FE / SSC G5T1 / S1	Seems to prefer soils of fine alluvial sands and sandy slopes of coastal scrub near the ocean, but much remains to be learned. Historically, known to inhabit the narrow coastal mesas from the Mexican border north to El Segundo, Los Angeles County.	**Not Expected.** Suitable habitat (sandy slopes of coastal scrub) is marginally present within the survey area. However, the nearest occurrence is over 2 miles to the south and this species is only known extant from eight locales.
Sorex ornatus salicornicus **southern California saltmarsh shrew**	-- / SSC G5T1? / S1	Inhabits coastal salt marshes of Los Angeles, Orange, and Ventura Counties. Requires dense vegetation and woody debris for cover.	**Not Expected.** Suitable habitat (salt marshes) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the west.
Taxidea taxus **American badger**	-- / SSC G5 / S3	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrow.	**Not Expected.** Suitable habitat (open, uncultivated ground) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the southwest.

* **California Rare Plant Rank (CRPR)**

1A Plants presumed extirpated in California and either rare or extinct elsewhere
1B Plants rare, threatened, or endangered in California and elsewhere
2A Plants presumed extirpated in California, but common elsewhere
2B Plants rare, threatened, or endangered in California, but more common elsewhere
3 Plants approximately which more information is needed - a Review List
4 Plants of limited distribution - a Watch List

Threat Ranks

.1 Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
.2 Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)
.3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Federal Classifications

FE Federally Endangered
FT Federally Threatened
FP Fully Protected

State Classifications

SE State Endangered
ST State Threatened
SCE State Candidate for Endangered
SSC California Species of Special Concern
WL Watch List

G-Rank / S-Rank

Global Rank and State Rank as per NatureServe and CDFW CNDDB RareFind 5, ranging from critically imperiled (G1/S1) to demonstrably secure (G5/S5)

Infraspecific Taxon Conservation Status Ranks

Infraspecific taxa refer to subspecies, varieties, and other designations below the level of the species. Infraspecific taxon status (T-ranks) apply to plants and animals only; these T-ranks do not apply to ecological communities. The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above for global conservation status ranks.

APPENDIX C

Greenhouse Gas Assessment

Greenhouse Gas Emissions Assessment
for the proposed
College of Health Sciences and Nursing Building
at the University of California, Irvine

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen	California Green Building Standards
CPUC	California Public Utilities Commission
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CAP	Climate Action Plan
CY	cubic yard
COHS	College of Health Sciences
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Government
SF	square foot
SF_6	sulfur hexafluoride
SPP	Sustainable Practice Policy
TAC	toxic air contaminants
UC	University of California
UCI	University of California, Irvine

1 INTRODUCTION

This report documents the results of an Greenhouse Gas (GHG) Emissions Assessment completed for the University of California Irvine (UCI) College of Health Sciences and Nursing Building. The purpose of this GHG Emissions Assessment is to evaluate the potential construction and operational emissions associated with the proposed Project and determine the Project's level of impact on the environment.

1.1 PROJECT LOCATION

The Project is in Orange County (County), in the City of Irvine (City) within the UCI campus; see Exhibit 1: Regional Vicinity. The 11.4-acre Project site is located in the west side of the UCI campus adjacent to the northeast corner of California Avenue and Bison Avenue intersection; see Exhibit 2: Site Vicinity. Regional access to the Project site is provided via Interstate 405 and State Route 73 located to the north and west, respectively. Local access to the Project site is provided via University Avenue and Bison Avenue.

1.2 PROJECT DESCRIPTION

The Project proposes to develop two new four- to five-story structures including a College of Health and Science (COHS) Building and a Nursing Building, a 300-space surface parking lot, as well as an interim parking lot providing up to 200 parking stalls; see Exhibit 3: Site Plan. The new buildings on campus would provide additional academic and clinical facilities, as well as parking for the additional students and faculty. The Project would generate 100 additional faculty and approximately 100 overall daily off-campus visitors. The overall student population would not directly increase. The Project proposes a total of 125,000 square feet (SF) of total floor area for the COHS Building with 100,000 SF dedicated to academic use and 25,000 SF dedicated to clinical use. The Nursing Building is proposed to have a total of 95,000 SF of total floor area that is dedicated to academic use. The COHS Building and Nursing Buildings would be oriented parallel to California Avenue and Bison Avenue, respectively. Building frontages are designed facing away from the street. The Project site is inside the UCI campus and is zoned for institutional land uses. Surrounding land uses include preservation and recreational land use to the north, as well as low to medium-high density residential land uses surrounding the eastern half of the UCI campus.

Project Construction and Phasing

Project construction is anticipated to occur beginning in the March of 2020 and last approximately 26 months, ending in April 2022. Grading for the proposed improvements would require cut and fill to create building pads. The Project is anticipated to require a net cut of approximately 9,784 cubic yards (CY) of soil. Final grading plans would be approved by the UCI Building Official before Grading Permit issuance. All infrastructure (i.e., storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

Exhibit 1: Regional Vicinity

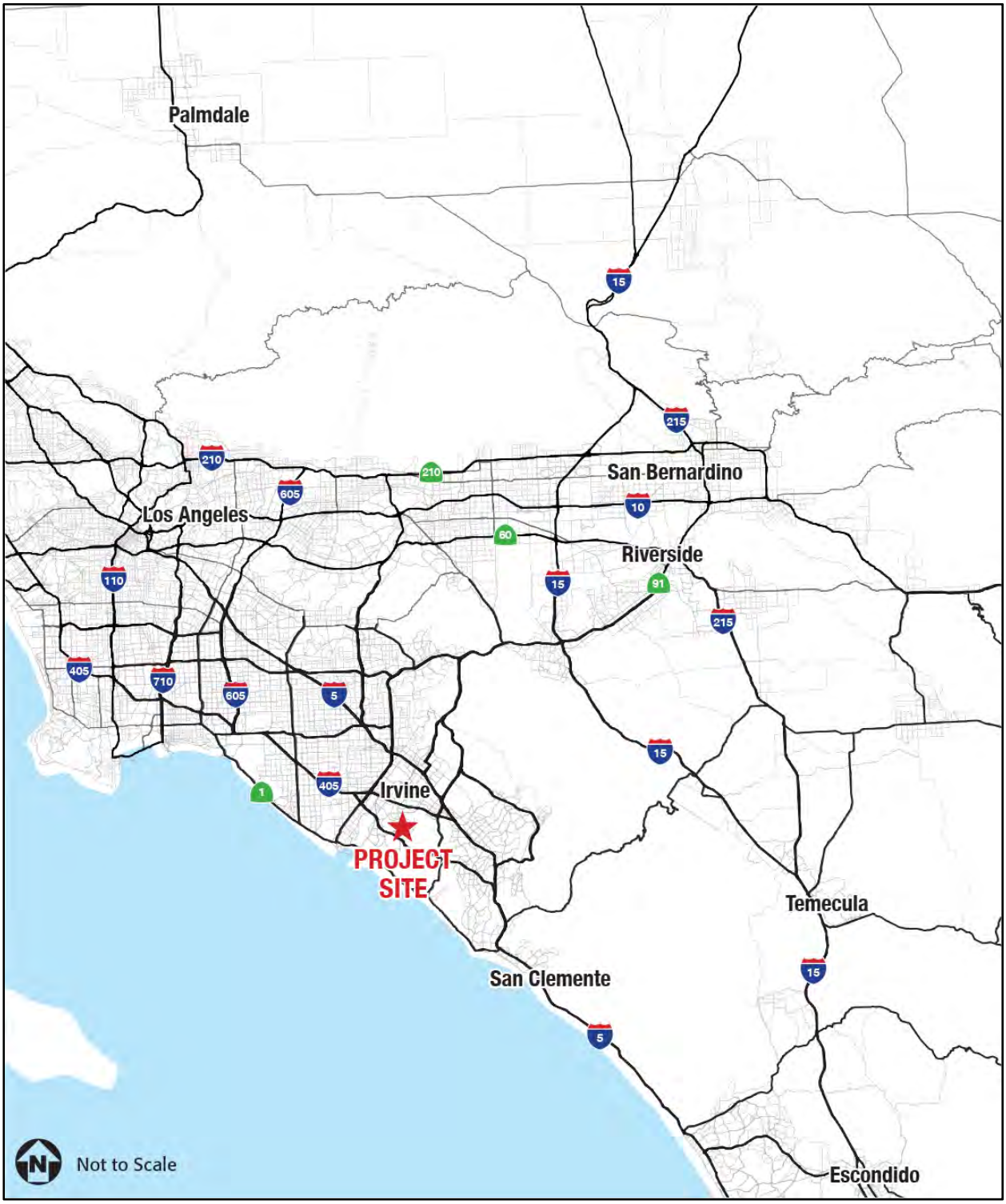

Exhibit 2: Site Vicinity

Source: Google Maps, 2019.

Exhibit 3: Site Plan

2 ENVIRONMENTAL SETTING

2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Certain gases in the earth's atmosphere classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere[1]. Table 1: Description of Greenhouse Gases, describes the primary GHGs attributed to global climate change, including their physical properties.

[1] Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis*, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	CO_2 is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO_2 is variable because it is readily exchanged in the atmosphere. CO_2 is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O is 298.
Methane (CH_4)	CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, approximately 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH_4 include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH_4 is approximately 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays approximately 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF_6)	SF_6 is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF_6 is 23,900.
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, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF_3)	NF_3 was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

3 REGULATORY SETTING

3.1 FEDERAL

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year

2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 miles per gallon), canceling any future strengthening (currently 54.5 miles per gallon by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, the President and the EPA have stated their intent to halt various federal regulatory activities to reduce GHG emission, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are speculative at this time.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783. Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth* issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO_2, N_2O, and CH_4.

3.2 STATE OF CALIFORNIA

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO_2 equivalents (CO_2e) in the world and produced 459 million gross metric tons of CO_2e in 2013. In California, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark Assembly Bill (AB) 32, *California Global Warming Solutions Act of 2006*, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

Assembly Bill (AB) 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes a framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual")[2]. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the state's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program[3]. Additional development of these measures and adoption of appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.

[2] CARB defines business-as-usual in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of business-as-usual, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[3] The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated state-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

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 California and the levels of GHG emissions reductions 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.

Senate Bill (SB) 32 (California Global Warming Solutions Act of 2006: Emissions Limit). Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017 CARB adopted a second update to the Scoping Plan[4]. The 2017 Scoping Plan details how the state will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and, support the Clean Power Plan and other Federal actions.

[4] California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 9, 2018.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008). Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards). SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO_2 per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards). SB 1078 (2002) required California to generate 20 percent of its electricity from renewable energy by 2017. In 2005, SB 107 accelerated the due date of the 20 percent mandate to 2010 instead of 2017. These mandates apply directly to investor-owned utilities. On November 17, 2008, Executive Order S-14-08 established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 (2011) codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015). Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

AB 398 (Market-Based Compliance Mechanisms). Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and

for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

SB 150 (Regional Transportation Plans). Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases). Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the state's tone and guide the actions of state agencies.

Executive Order S-3-05. Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

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

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07. Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California (UC), and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009.

Executive Order S-13-08. Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08. Issued on November 17, 2008, 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-21-09. Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's 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 which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15. Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-55-18. Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat, even with rapid population growth.

Title 20 Appliance Efficiency Regulations. The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on

January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use approximately 53 percent less energy and nonresidential buildings will use approximately 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as CALGreen, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to CALGreen went into effect January 1, 2017. Updates to the 2016 CALGreen Code will take effect on January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

3.3 REGIONAL

South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold 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 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.

With the tiered approach, a 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 lower than a screening threshold. The SCAQMD is proposing a screening threshold of 10,000 metric tons of CO_2e ($MTCO_2e$) per year for industrial projects and 3,000 $MTCO_2e$ for non-industrial projects. 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, SCAQMD initially outlined that a project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third option. Under the Tier 4 third option, a project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2e$ per service population per year or 3.0 $MTCO_2e$/SP/year for projects opening after 2020. 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 SB 32 (40 percent below 1990 levels by 2030). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal, by the estimated population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32 and SB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

Southern California Association of Governments

On April 7, 2016, the Southern California Association of Governments (SCAG) Regional Council adopted the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The strategy was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP/SCS is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions.

3.4 LOCAL

UC Irvine Climate Action Plan

The UCI Climate Action Plan (CAP) was initially adopted in 2007 (updated in 2016) and provides an array of climate action protection strategies for projects to reduce UCI GHG emissions. The CAP provides guidance for UCI to achieve its institutional climate protection commitments in support of UC sustainability policy and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 49 percent from projected emissions), climate neutrality by the year 2025 (for on-site combustion of fossil fuels and purchased electricity), and climate neutrality by the year 2050 (for UCI commuters and university-funded air travel).

University of California Sustainable Practices Policy

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

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 THRESHOLDS AND SIGNIFICANT CRITERIA

Based upon the criteria derived from CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or

- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Addressing GHG emissions generation impacts requires an agency to determine what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions would have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" a project's GHG emissions (14 California Code of Regulations Section 15064.4(a)).

UCI has not adopted project-specific significance thresholds. For the proposed Project, the SCAQMD's proposed 3,000 $MTCO_2e$ annual non-industrial screening threshold is used as the significance threshold, in addition to the qualitative thresholds of significance set forth below from CEQA Guidelines Appendix G Section VII.

The 3,000 $MTCO_2e$/yr screening threshold represents a 90 percent capture rate (i.e., this threshold captures projects that represent approximately 90 percent of GHG emissions from new sources) and represents emissions associated with development of approximately 70 single-family dwelling units. The 3,000 $MTCO_2e$/year value is typically used in defining small projects that are considered less than significant.[5]

4.2 METHODOLOGY

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in Appendix A: Greenhouse Gas Emissions Data. For construction, CalEEMod calculates

[5] On pages 3-2 and 3-3 of the SCAQMD's *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (October 2008) the SCAQMD notes that a GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term GHG impacts. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that the SCAQMD estimates that these GHG emissions would account for less than one percent of future 2050 statewide GHG emissions target (85 $MMTCO_2e$/yr). In addition, these small projects would be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory.

emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. The Project's construction-related GHG emissions were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The Project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 GREENHOUSE GAS EMISSIONS

Threshold 5.1 Would the Project generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment?

Short-Term Construction Greenhouse Gas Emissions

The proposed Project would result in direct GHG emissions from construction-related activities. The duration of construction activities associated with the proposed Project are estimated to last up to 26 months. The Project is anticipated to require a net cut of approximately 9,784 cubic yards (CY) of soil. Construction-related emissions were calculated using CalEEMod, which is designed to model emissions for land use development projects, based on typical construction requirements. The approximate daily GHG emissions generated by construction equipment utilized to build the proposed Project are included in Table 2: Construction-Related Greenhouse Gas Emissions.

Table 2: Construction-Related Greenhouse Gas Emissions

Category	$MTCO_2e$
Total Construction Emissions	1,594
30-Year Amortized Construction	53

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

As shown in Table 2, Project construction-related activities would generate approximately 1,594 $MTCO_2e$ of GHG emissions over the course of construction. Construction GHG emissions are typically summed and amortized over the Project's lifetime (assumed to be 30 years), then added to the operational emissions[6]. The amortized Project emissions would be 53 $MTCO_2e$ per year. Once construction is complete, the generation of construction-related GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the proposed Project's life. The Project's operational GHG emissions would result from direct emissions such as Project-generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to the Project site and wastewater from the Project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators. The Project's total operational GHG emissions are summarized in Table 3: Project Greenhouse Gas Emissions. As shown in Table 3, Project operational GHG emissions, combined with construction-related GHG emissions, would generate approximately 1,853 $MTCO_2e$ annually. The proposed Project would not exceed the SCAQMD GHG threshold of 3,000 $MTCO_2e$ per year, thus, Project-related GHG emissions would be less than significant and no mitigation is required.

[6] The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13,* August 26, 2009).

Table 3: Project Greenhouse Gas Emissions	
Emissions Source	**$MTCO_2e$ per Year**
Construction Amortized Over 30 Years	47
Area Source	0
Energy	614
Mobile	1,104
Waste	73
Water and Wastewater	15
Total	**1,853**
SCAQMD Project Threshold	*3,000*
Exceeds Threshold?	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

Threshold 5.2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions?

As discussed above, UCI's Sustainable Practices Policy establishes goals and policies to reduce GHG emissions from various sources at the UCI campus. In addition, the CAP in cooperation with AB 32 has guided an array of climate action protection strategies and projects to reduce UCI GHG emissions. The purpose of the CAP is to identify UCI's long-term vision and commitment to reduce its GHG emissions in support of UC SPP and campus sustainability goals. These commitments include reduction of GHG emissions to 1990 levels by the year 2020 (a reduction of approximately 49 percent from projected emissions), climate neutrality by the year 2025 (for on-site combustion of fossil fuels and purchased electricity), and climate neutrality by the year 2050 (for UCI commuters and university-funded air travel). The CAP does not contain project-specific GHG thresholds.

The proposed Project would be subject to the University of California Policy on Sustainable Practices. The policy includes goals in various areas of sustainable practices including green building design, clean energy, climate protection, sustainable transportation, sustainable building operations for Campuses, zero waste, sustainable procurement, sustainable foodservices, sustainable water systems and sustainability at UC Health. Specific to the proposed Project, all new buildings are required to outperform the California Building Code energy-efficiency standards (Title 24) by at least 20 percent or meet whole-building energy performance targets identified in the policy. Onsite fossil fuel combustion is prohibited, and buildings are required to achieve U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) "Silver" standards at minimum and strive to achieve LEED "Gold" or higher.

The Project would also not conflict with any of the policy's sustainable practices, including campus-wide clean energy, energy efficiency, and renewable energy, and sustainable transportation.

The Project is subject to the practices in the UC Sustainable Practices Policy and the UCI CAP. Development of the College of Health Sciences and Nursing Building would serve existing students within the Campus. The Project's GHG emissions (1,853 $MTCO_2e$ per year) would be below SCAQMD thresholds. Additionally, these emissions are anticipated to decline in future years with continued implementation of the UCI CAP. The Project demonstrates consistency with CAP goals, measures, and emission reduction targets and would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, Project impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of the proposed Project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the proposed Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in Table 3, the proposed Project's GHG emissions would be less than significant. Additionally, as discussed above, the Project would be consistent with the UCI CAP. As a result, the Project would not conflict with any GHG reduction plans. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* 2017.
2. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007.
3. Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.
4. LPA, *Phase 1 Grading Exhibit Parking Estimate*, 2018.
5. National Research Council, *Advancing the Science of Climate Change*, 2010.
6. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
7. South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, 2009.
8. University of California, *Policy of Sustainable Practices*, 2018.
9. University of California, Irvine, *Climate Action Plan*, 2016.
10. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018.
11. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 2010.
12. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

Appendix A

Greenhouse Gas Emissions Data

UCI COHS - Orange County, Annual

UCI COHS

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	25.00	1000sqft	0.57	25,000.00	0
University/College (4Yr)	25.00	Employee	4.48	195,000.00	0
Other Asphalt Surfaces	103.00	1000sqft	2.36	103,000.00	0
Parking Lot	500.00	Space	4.50	200,000.00	0
City Park	0.05	Acre	0.05	2,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029-298*0.00617=546.4263 to avoid double counting

Land Use - anticipated square footage of buildings and parking areas per site plan

Construction Phase - anticipated construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Grading - anticipated earthwork

Vehicle Trips - based on ITE trip rates for Academic Use and Medical Clinic

Energy Use -

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Energy Mitigation - Latest building code plus LEED

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	10.00	18.00
tblGrading	MaterialExported	0.00	9,784.00
tblLandUse	LandUseSquareFeet	17,644.56	195,000.00
tblLandUse	LandUseSquareFeet	2,178.00	2,200.00
tblLandUse	LotAcreage	0.41	4.48
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	13.22	36.00

tblVehicleTrips	WD_TR	8.96	2.76

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					
2020	0.3923	3.8818	2.9349	7.5000e-003	0.5441	0.1616	0.7058	0.2143	0.1507	0.3649	0.0000	682.9143	682.9143	0.1129	0.0000	685.7370
2021	0.5292	2.7119	2.6212	7.2900e-003	0.3073	0.1031	0.4105	0.0829	0.0970	0.1799	0.0000	665.2192	665.2192	0.0796	0.0000	667.2079
2022	0.8822	0.2548	0.3804	7.1000e-004	0.0220	0.0133	0.0353	5.8300e-003	0.0125	0.0183	0.0000	62.8027	62.8027	0.0124	0.0000	63.1114
Maximum	**0.8822**	**3.8818**	**2.9349**	**7.5000e-003**	**0.5441**	**0.1616**	**0.7058**	**0.2143**	**0.1507**	**0.3649**	**0.0000**	**682.9143**	**682.9143**	**0.1129**	**0.0000**	**685.7370**

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					
2020	0.3923	3.8818	2.9349	7.5000e-003	0.3524	0.1616	0.5140	0.1242	0.1507	0.2748	0.0000	682.9140	682.9140	0.1129	0.0000	685.7366
2021	0.5292	2.7119	2.6212	7.2900e-003	0.2919	0.1031	0.3950	0.0791	0.0970	0.1761	0.0000	665.2189	665.2189	0.0796	0.0000	667.2077
2022	0.8822	0.2548	0.3804	7.1000e-004	0.0208	0.0133	0.0341	5.5500e-003	0.0125	0.0181	0.0000	62.8026	62.8026	0.0124	0.0000	63.1113
Maximum	**0.8822**	**3.8818**	**2.9349**	**7.5000e-003**	**0.3524**	**0.1616**	**0.5140**	**0.1242**	**0.1507**	**0.2748**	**0.0000**	**682.9140**	**682.9140**	**0.1129**	**0.0000**	**685.7366**

	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**	**23.86**	**0.00**	**18.10**	**31.07**	**0.00**	**16.72**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2020**	**7-31-2020**	1.5511	1.5511
2	**8-1-2020**	**10-31-2020**	1.0502	1.0502
3	**11-1-2020**	**1-31-2021**	1.0203	1.0203
4	**2-1-2021**	**4-30-2021**	0.9214	0.9214
5	**5-1-2021**	**7-31-2021**	0.9494	0.9494
6	**8-1-2021**	**10-31-2021**	0.7850	0.7850
7	**11-1-2021**	**1-31-2022**	0.4969	0.4969
8	**2-1-2022**	**4-30-2022**	0.6602	0.6602
		Highest	1.5511	1.5511

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	0.9215	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173
Energy	0.0242	0.2203	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167	0.0000	952.2101	952.2101	0.0424	0.0122	956.9114
Mobile	0.2081	0.9341	3.0107	0.0120	1.1144	8.7400e-003	1.1231	0.2984	8.1300e-003	0.3066	0.0000	1,103.1800	1,103.1800	0.0444	0.0000	1,104.2894
Waste						0.0000	0.0000		0.0000	0.0000	58.8674	0.0000	58.8674	3.4790	0.0000	145.8414
Water						0.0000	0.0000		0.0000	0.0000	1.0604	13.4826	14.5430	0.1096	2.7200e-003	18.0943
Total	**1.1539**	**1.1545**	**3.2041**	**0.0133**	**1.1144**	**0.0255**	**1.1399**	**0.2984**	**0.0249**	**0.3233**	**59.9278**	**2,068.8889**	**2,128.8168**	**3.6754**	**0.0149**	**2,225.1538**

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	0.9215	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173
Energy	0.0190	0.1725	0.1449	1.0300e-003		0.0131	0.0131		0.0131	0.0131	0.0000	611.1174	611.1174	0.0261	8.0900e-003	614.1801
Mobile	0.2081	0.9341	3.0107	0.0120	1.1144	8.7400e-003	1.1231	0.2984	8.1300e-003	0.3066	0.0000	1,103.1800	1,103.1800	0.0444	0.0000	1,104.2894
Waste						0.0000	0.0000		0.0000	0.0000	29.4337	0.0000	29.4337	1.7395	0.0000	72.9207
Water						0.0000	0.0000		0.0000	0.0000	0.8484	11.1606	12.0090	0.0877	2.1800e-003	14.8518
Total	**1.1486**	**1.1066**	**3.1639**	**0.0130**	**1.1144**	**0.0219**	**1.1363**	**0.2984**	**0.0213**	**0.3197**	**30.2820**	**1,725.4743**	**1,755.7563**	**1.8977**	**0.0103**	**1,806.2592**

	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	**0.46**	**4.14**	**1.25**	**2.18**	**0.00**	**14.23**	**0.32**	**0.00**	**14.58**	**1.12**	**49.47**	**16.60**	**17.52**	**48.37**	**31.26**	**18.83**

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	3/1/2020	3/31/2020	5	22	
2	Site Preparation	Site Preparation	4/1/2020	4/24/2020	5	18	
3	Grading	Grading	4/25/2020	6/12/2020	5	35	
4	Building Construction	Building Construction	6/13/2020	10/15/2021	5	350	
5	Paving	Paving	10/16/2022	12/2/2022	5	35	
6	Architectural Coating	Architectural Coating	12/3/2021	4/21/2022	5	100	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 6.86

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 330,000; Non-Residential Outdoor: 110,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,223.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	218.00	86.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	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 - 2020

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	0.0364	0.3652	0.2393	4.3000e-004		0.0183	0.0183		0.0170	0.0170	0.0000	37.3985	37.3985	0.0106	0.0000	37.6624
Total	**0.0364**	**0.3652**	**0.2393**	**4.3000e-004**		**0.0183**	**0.0183**		**0.0170**	**0.0170**	**0.0000**	**37.3985**	**37.3985**	**0.0106**	**0.0000**	**37.6624**

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	6.4000e-004	4.5000e-004	5.1100e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5678	1.5678	4.0000e-005	0.0000	1.5687
Total	**6.4000e-004**	**4.5000e-004**	**5.1100e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5678**	**1.5678**	**4.0000e-005**	**0.0000**	**1.5687**

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	0.0364	0.3652	0.2393	4.3000e-004		0.0183	0.0183		0.0170	0.0170	0.0000	37.3984	37.3984	0.0106	0.0000	37.6624
Total	**0.0364**	**0.3652**	**0.2393**	**4.3000e-004**		**0.0183**	**0.0183**		**0.0170**	**0.0170**	**0.0000**	**37.3984**	**37.3984**	**0.0106**	**0.0000**	**37.6624**

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	6.4000e-004	4.5000e-004	5.1100e-003	2.0000e-005	1.7200e-003	1.0000e-005	1.7300e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5678	1.5678	4.0000e-005	0.0000	1.5687
Total	**6.4000e-004**	**4.5000e-004**	**5.1100e-003**	**2.0000e-005**	**1.7200e-003**	**1.0000e-005**	**1.7300e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.5678**	**1.5678**	**4.0000e-005**	**0.0000**	**1.5687**

3.3 Site Preparation - 2020

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					0.1626	0.0000	0.1626	0.0894	0.0000	0.0894	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3818	0.1936	3.4000e-004		0.0198	0.0198		0.0182	0.0182	0.0000	30.0876	30.0876	9.7300e-003	0.0000	30.3309
Total	**0.0367**	**0.3818**	**0.1936**	**3.4000e-004**	**0.1626**	**0.0198**	**0.1824**	**0.0894**	**0.0182**	**0.1076**	**0.0000**	**30.0876**	**30.0876**	**9.7300e-003**	**0.0000**	**30.3309**

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	6.3000e-004	4.4000e-004	5.0200e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5393	1.5393	4.0000e-005	0.0000	1.5401

Total	**6.3000e-004**	**4.4000e-004**	**5.0200e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5393**	**1.5393**	**4.0000e-005**	**0.0000**	**1.5401**

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					0.0695	0.0000	0.0695	0.0382	0.0000	0.0382	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3818	0.1936	3.4000e-004		0.0198	0.0198		0.0182	0.0182	0.0000	30.0876	30.0876	9.7300e-003	0.0000	30.3309
Total	**0.0367**	**0.3818**	**0.1936**	**3.4000e-004**	**0.0695**	**0.0198**	**0.0893**	**0.0382**	**0.0182**	**0.0564**	**0.0000**	**30.0876**	**30.0876**	**9.7300e-003**	**0.0000**	**30.3309**

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	6.3000e-004	4.4000e-004	5.0200e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5393	1.5393	4.0000e-005	0.0000	1.5401
Total	**6.3000e-004**	**4.4000e-004**	**5.0200e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5393**	**1.5393**	**4.0000e-005**	**0.0000**	**1.5401**

3.4 Grading - 2020

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					0.1523	0.0000	0.1523	0.0630	0.0000	0.0630	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3475	95.3475	0.0308	0.0000	96.1185
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.1523**	**0.0380**	**0.1904**	**0.0630**	**0.0350**	**0.0980**	**0.0000**	**95.3475**	**95.3475**	**0.0308**	**0.0000**	**96.1185**

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	4.6700e-003	0.1735	0.0435	4.7000e-004	0.0105	5.5000e-004	0.0110	2.8700e-003	5.2000e-004	3.4000e-003	0.0000	47.0228	47.0228	4.9600e-003	0.0000	47.1467
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	1.3600e-003	9.6000e-004	0.0109	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.3256	3.3256	8.0000e-005	0.0000	3.3275
Total	**6.0300e-003**	**0.1745**	**0.0543**	**5.1000e-004**	**0.0143**	**5.8000e-004**	**0.0149**	**3.8900e-003**	**5.4000e-004**	**4.4400e-003**	**0.0000**	**50.3483**	**50.3483**	**5.0400e-003**	**0.0000**	**50.4741**

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					0.0651	0.0000	0.0651	0.0269	0.0000	0.0269	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3474	95.3474	0.0308	0.0000	96.1183
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.0651**	**0.0380**	**0.1032**	**0.0269**	**0.0350**	**0.0619**	**0.0000**	**95.3474**	**95.3474**	**0.0308**	**0.0000**	**96.1183**

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	4.6700e-003	0.1735	0.0435	4.7000e-004	0.0100	5.5000e-004	0.0106	2.7600e-003	5.2000e-004	3.2800e-003	0.0000	47.0228	47.0228	4.9600e-003	0.0000	47.1467
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	1.3600e-003	9.6000e-004	0.0109	4.0000e-005	3.6400e-003	3.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	1.0000e-003	0.0000	3.3256	3.3256	8.0000e-005	0.0000	3.3275
Total	**6.0300e-003**	**0.1745**	**0.0543**	**5.1000e-004**	**0.0137**	**5.8000e-004**	**0.0142**	**3.7300e-003**	**5.4000e-004**	**4.2800e-003**	**0.0000**	**50.3483**	**50.3483**	**5.0400e-003**	**0.0000**	**50.4741**

3.5 Building Construction - 2020

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	0.1526	1.3814	1.2131	1.9400e-003		0.0804	0.0804		0.0756	0.0756	0.0000	166.7592	166.7592	0.0407	0.0000	167.7763
Total	**0.1526**	**1.3814**	**1.2131**	**1.9400e-003**		**0.0804**	**0.0804**		**0.0756**	**0.0756**	**0.0000**	**166.7592**	**166.7592**	**0.0407**	**0.0000**	**167.7763**

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	0.0202	0.6567	0.1786	1.5300e-003	0.0390	3.3900e-003	0.0424	0.0112	3.2400e-003	0.0145	0.0000	150.7290	150.7290	0.0126	0.0000	151.0439
Worker	0.0612	0.0429	0.4866	1.6500e-003	0.1723	1.1600e-003	0.1735	0.0458	1.0700e-003	0.0468	0.0000	149.1372	149.1372	3.4000e-003	0.0000	149.2222
Total	**0.0814**	**0.6996**	**0.6652**	**3.1800e-003**	**0.2113**	**4.5500e-003**	**0.2158**	**0.0570**	**4.3100e-003**	**0.0613**	**0.0000**	**299.8662**	**299.8662**	**0.0160**	**0.0000**	**300.2661**

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	0.1526	1.3814	1.2131	1.9400e-003		0.0804	0.0804		0.0756	0.0756	0.0000	166.7590	166.7590	0.0407	0.0000	167.7761
Total	**0.1526**	**1.3814**	**1.2131**	**1.9400e-003**		**0.0804**	**0.0804**		**0.0756**	**0.0756**	**0.0000**	**166.7590**	**166.7590**	**0.0407**	**0.0000**	**167.7761**

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	0.0202	0.6567	0.1786	1.5300e-003	0.0373	3.3900e-003	0.0407	0.0108	3.2400e-003	0.0141	0.0000	150.7290	150.7290	0.0126	0.0000	151.0439
Worker	0.0612	0.0429	0.4866	1.6500e-003	0.1634	1.1600e-003	0.1645	0.0436	1.0700e-003	0.0446	0.0000	149.1372	149.1372	3.4000e-003	0.0000	149.2222
Total	**0.0814**	**0.6996**	**0.6652**	**3.1800e-003**	**0.2007**	**4.5500e-003**	**0.2052**	**0.0544**	**4.3100e-003**	**0.0587**	**0.0000**	**299.8662**	**299.8662**	**0.0160**	**0.0000**	**300.2661**

3.5 Building Construction - 2021

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	0.1958	1.7955	1.7073	2.7700e-003		0.0987	0.0987		0.0928	0.0928	0.0000	238.5864	238.5864	0.0576	0.0000	240.0254
Total	**0.1958**	**1.7955**	**1.7073**	**2.7700e-003**		**0.0987**	**0.0987**		**0.0928**	**0.0928**	**0.0000**	**238.5864**	**238.5864**	**0.0576**	**0.0000**	**240.0254**

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	0.0242	0.8439	0.2366	2.1600e-003	0.0558	1.7500e-003	0.0575	0.0161	1.6800e-003	0.0178	0.0000	213.7688	213.7688	0.0173	0.0000	214.2013
Worker	0.0823	0.0553	0.6451	2.2800e-003	0.2465	1.6200e-003	0.2481	0.0655	1.5000e-003	0.0670	0.0000	205.9457	205.9457	4.4100e-003	0.0000	206.0560
Total	**0.1064**	**0.8992**	**0.8816**	**4.4400e-003**	**0.3023**	**3.3700e-003**	**0.3056**	**0.0815**	**3.1800e-003**	**0.0847**	**0.0000**	**419.7145**	**419.7145**	**0.0217**	**0.0000**	**420.2573**

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	0.1958	1.7955	1.7072	2.7700e-003		0.0987	0.0987		0.0928	0.0928	0.0000	238.5861	238.5861	0.0576	0.0000	240.0251
Total	**0.1958**	**1.7955**	**1.7072**	**2.7700e-003**		**0.0987**	**0.0987**		**0.0928**	**0.0928**	**0.0000**	**238.5861**	**238.5861**	**0.0576**	**0.0000**	**240.0251**

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	0.0242	0.8439	0.2366	2.1600e-003	0.0534	1.7500e-003	0.0551	0.0155	1.6800e-003	0.0172	0.0000	213.7688	213.7688	0.0173	0.0000	214.2013
Worker	0.0823	0.0553	0.6451	2.2800e-003	0.2337	1.6200e-003	0.2353	0.0623	1.5000e-003	0.0638	0.0000	205.9457	205.9457	4.4100e-003	0.0000	206.0560
Total	**0.1064**	**0.8992**	**0.8816**	**4.4400e-003**	**0.2871**	**3.3700e-003**	**0.2904**	**0.0778**	**3.1800e-003**	**0.0810**	**0.0000**	**419.7145**	**419.7145**	**0.0217**	**0.0000**	**420.2573**

3.6 Paving - 2022

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	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	8.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0283**	**0.1947**	**0.2552**	**4.0000e-004**		**9.9400e-003**	**9.9400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

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	9.1000e-004	5.9000e-004	7.0300e-003	3.0000e-005	2.8800e-003	2.0000e-005	2.9000e-003	7.7000e-004	2.0000e-005	7.8000e-004	0.0000	2.3185	2.3185	5.0000e-005	0.0000	2.3197
Total	**9.1000e-004**	**5.9000e-004**	**7.0300e-003**	**3.0000e-005**	**2.8800e-003**	**2.0000e-005**	**2.9000e-003**	**7.7000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.3185**	**2.3185**	**5.0000e-005**	**0.0000**	**2.3197**

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	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	8.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0283**	**0.1947**	**0.2552**	**4.0000e-004**		**9.9400e-003**	**9.9400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

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	9.1000e-004	5.9000e-004	7.0300e-003	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.3185	2.3185	5.0000e-005	0.0000	2.3197
Total	**9.1000e-004**	**5.9000e-004**	**7.0300e-003**	**3.0000e-005**	**2.7300e-003**	**2.0000e-005**	**2.7500e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.3185**	**2.3185**	**5.0000e-005**	**0.0000**	**2.3197**

3.7 Architectural Coating - 2021

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	0.2230					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.3000e-003	0.0160	0.0191	3.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	2.6809	2.6809	1.8000e-004	0.0000	2.6855
Total	**0.2253**	**0.0160**	**0.0191**	**3.0000e-005**		**9.9000e-004**	**9.9000e-004**		**9.9000e-004**	**9.9000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.8000e-004**	**0.0000**	**2.6855**

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	1.6900e-003	1.1400e-003	0.0133	5.0000e-005	5.0700e-003	3.0000e-005	5.1100e-003	1.3500e-003	3.0000e-005	1.3800e-003	0.0000	4.2374	4.2374	9.0000e-005	0.0000	4.2397
Total	**1.6900e-003**	**1.1400e-003**	**0.0133**	**5.0000e-005**	**5.0700e-003**	**3.0000e-005**	**5.1100e-003**	**1.3500e-003**	**3.0000e-005**	**1.3800e-003**	**0.0000**	**4.2374**	**4.2374**	**9.0000e-005**	**0.0000**	**4.2397**

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	0.2230					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3000e-003	0.0160	0.0191	3.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	2.6809	2.6809	1.8000e-004	0.0000	2.6855
Total	**0.2253**	**0.0160**	**0.0191**	**3.0000e-005**		**9.9000e-004**	**9.9000e-004**		**9.9000e-004**	**9.9000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.8000e-004**	**0.0000**	**2.6855**

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	1.6900e-003	1.1400e-003	0.0133	5.0000e-005	4.8100e-003	3.0000e-005	4.8400e-003	1.2800e-003	3.0000e-005	1.3100e-003	0.0000	4.2374	4.2374	9.0000e-005	0.0000	4.2397
Total	**1.6900e-003**	**1.1400e-003**	**0.0133**	**5.0000e-005**	**4.8100e-003**	**3.0000e-005**	**4.8400e-003**	**1.2800e-003**	**3.0000e-005**	**1.3100e-003**	**0.0000**	**4.2374**	**4.2374**	**9.0000e-005**	**0.0000**	**4.2397**

3.7 Architectural Coating - 2022

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	0.8389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0800e-003	0.0556	0.0716	1.2000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	10.0854	10.0854	6.6000e-004	0.0000	10.1018
Total	**0.8469**	**0.0556**	**0.0716**	**1.2000e-004**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**10.0854**	**10.0854**	**6.6000e-004**	**0.0000**	**10.1018**

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	6.0200e-003	3.8800e-003	0.0465	1.7000e-004	0.0191	1.2000e-004	0.0192	5.0700e-003	1.1000e-004	5.1800e-003	0.0000	15.3506	15.3506	3.1000e-004	0.0000	15.3583
Total	**6.0200e-003**	**3.8800e-003**	**0.0465**	**1.7000e-004**	**0.0191**	**1.2000e-004**	**0.0192**	**5.0700e-003**	**1.1000e-004**	**5.1800e-003**	**0.0000**	**15.3506**	**15.3506**	**3.1000e-004**	**0.0000**	**15.3583**

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	0.8389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0800e-003	0.0556	0.0716	1.2000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	10.0853	10.0853	6.6000e-004	0.0000	10.1018
Total	**0.8469**	**0.0556**	**0.0716**	**1.2000e-004**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**10.0853**	**10.0853**	**6.6000e-004**	**0.0000**	**10.1018**

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	6.0200e-003	3.8800e-003	0.0465	1.7000e-004	0.0181	1.2000e-004	0.0182	4.8200e-003	1.1000e-004	4.9400e-003	0.0000	15.3506	15.3506	3.1000e-004	0.0000	15.3583
Total	**6.0200e-003**	**3.8800e-003**	**0.0465**	**1.7000e-004**	**0.0181**	**1.2000e-004**	**0.0182**	**4.8200e-003**	**1.1000e-004**	**4.9400e-003**	**0.0000**	**15.3506**	**15.3506**	**3.1000e-004**	**0.0000**	**15.3583**

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	0.2081	0.9341	3.0107	0.0120	1.1144	8.7400e-003	1.1231	0.2984	8.1300e-003	0.3066	0.0000	1,103.1800	1,103.1800	0.0444	0.0000	1,104.2894
Unmitigated	0.2081	0.9341	3.0107	0.0120	1.1144	8.7400e-003	1.1231	0.2984	8.1300e-003	0.3066	0.0000	1,103.1800	1,103.1800	0.0444	0.0000	1,104.2894

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hospital	900.00	254.50	222.75	2,756,573	2,756,573
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	69.00	78.00	0.00	181,521	181,521
Total	969.00	332.50	222.75	2,938,094	2,938,094

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

City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hospital	16.60	8.40	6.90	64.90	16.10	19.00	73	25	2
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Hospital	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Other Asphalt Surfaces	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
Parking Lot	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934
University/College (4Yr)	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	423.3819	423.3819	0.0225	4.6500e-003	425.3290
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	712.4145	712.4145	0.0378	7.8200e-003	715.6908

NaturalGas Mitigated	0.0190	0.1725	0.1449	1.0300e-003		0.0131	0.0131		0.0131	0.0131	0.0000	187.7355	187.7355	3.6000e-003	3.4400e-003	188.8511
NaturalGas Unmitigated	0.0242	0.2203	0.1850	1.3200e-003		0.0167	0.0167		0.0167	0.0167	0.0000	239.7956	239.7956	4.6000e-003	4.4000e-003	241.2206

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					
City Park	0	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
Hospital	1.50425e+006	8.1100e-003	0.0737	0.0619	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	80.2725	80.2725	1.5400e-003	1.4700e-003	80.7495
Other Asphalt Surfaces	0	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
Parking Lot	0	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
University/College (4Yr)	2.98935e+006	0.0161	0.1465	0.1231	8.8000e-004		0.0111	0.0111		0.0111	0.0111	0.0000	159.5231	159.5231	3.0600e-003	2.9200e-003	160.4711
Total		**0.0242**	**0.2203**	**0.1850**	**1.3200e-003**		**0.0167**	**0.0167**		**0.0167**	**0.0167**	**0.0000**	**239.7956**	**239.7956**	**4.6000e-003**	**4.3900e-003**	**241.2206**

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					
City Park	0	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
Hospital	1.1207e+006	6.0400e-003	0.0549	0.0462	3.3000e-004		4.1800e-003	4.1800e-003		4.1800e-003	4.1800e-003	0.0000	59.8048	59.8048	1.1500e-003	1.1000e-003	60.1602
Other Asphalt Surfaces	0	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

Parking Lot	0	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
University/College (4Yr)	2.39733e+006	0.0129	0.1175	0.0987	7.1000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.9307	127.9307	2.4500e-003	2.3500e-003	128.6909
Total		**0.0190**	**0.1725**	**0.1449**	**1.0400e-003**		**0.0131**	**0.0131**		**0.0131**	**0.0131**	**0.0000**	**187.7355**	**187.7355**	**3.6000e-003**	**3.4500e-003**	**188.8511**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hospital	396000	98.1530	5.2100e-003	1.0800e-003	98.6044
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	70000	17.3503	9.2000e-004	1.9000e-004	17.4301
University/College (4Yr)	2.40825e+006	596.9113	0.0317	6.5500e-003	599.6564
Total		**712.4145**	**0.0378**	**7.8200e-003**	**715.6908**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hospital	259050	64.2084	3.4100e-003	7.1000e-004	64.5037

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	17500	4.3376	2.3000e-004	5.0000e-005	4.3575
University/College (4Yr)	1.43159e+006	354.8360	0.0188	3.9000e-003	356.4678
Total		**423.3819**	**0.0225**	**4.6600e-003**	**425.3290**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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	0.9215	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173
Unmitigated	0.9215	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173

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	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8146					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.8000e-004	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173
Total	**0.9215**	**8.0000e-005**	**8.3500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0162**	**0.0162**	**4.0000e-005**	**0.0000**	**0.0173**

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	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8146					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.8000e-004	8.0000e-005	8.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0162	0.0162	4.0000e-005	0.0000	0.0173
Total	**0.9215**	**8.0000e-005**	**8.3500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0162**	**0.0162**	**4.0000e-005**	**0.0000**	**0.0173**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.0090	0.0877	2.1800e-003	14.8518
Unmitigated	14.5430	0.1096	2.7200e-003	18.0943

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0595741	0.1641	1.0000e-005	0.0000	0.1648
Hospital	3.13701 / 0.597526	12.7651	0.1028	2.5400e-003	16.0939
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	0.205546 / 0.321494	1.6139	6.7800e-003	1.8000e-004	1.8356
Total		**14.5430**	**0.1096**	**2.7200e-003**	**18.0943**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0559401	0.1540	1.0000e-005	0.0000	0.1548
Hospital	2.50961 / 0.561077	10.4408	0.0823	2.0400e-003	13.1049
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	0.164436 / 0.301883	1.4142	5.4300e-003	1.4000e-004	1.5921
Total		**12.0090**	**0.0877**	**2.1800e-003**	**14.8518**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.4337	1.7395	0.0000	72.9207
Unmitigated	58.8674	3.4790	0.0000	145.8414

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hospital	270	54.8076	3.2390	0.0000	135.7834
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	20	4.0598	0.2399	0.0000	10.0580
Total		**58.8674**	**3.4790**	**0.0000**	**145.8414**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hospital	135	27.4038	1.6195	0.0000	67.8917
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	10	2.0299	0.1200	0.0000	5.0290

Total		**29.4337**	**1.7395**	**0.0000**	**72.9207**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX D

Traffic Study

UCI Health Sciences Southwest Quadrant Project Traffic Study

July 2, 2019

Prepared for:

UC Irvine Physical and Environmental Planning

Prepared by:

Stantec Consulting Services Inc.

This document entitled UCI Health Sciences Southwest Quadrant Project Traffic Study was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of UC Irvine Physical and Environmental Planning (the "Client").

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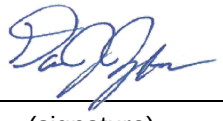
Reviewed by 
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Glossary

ADT	**Average Daily Traffic.** Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
ICU	**Intersection Capacity Utilization.** A measure of the volume-to-capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.
LOS	**Level of Service.** A scale used to evaluate circulation system performance based on ICU values at intersections or volume-to-capacity ratios of arterial segments.
Peak Hour	This refers to the highest single hour during the AM peak period (typically 7 AM to 9 AM) or the PM peak period (typically 4 PM to 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are travelling on a given roadway.
V/C	**Volume-to-Capacity Ratio.** This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a traffic impact analysis for a portion of the proposed UCI Health Sciences campus Southwest Quadrant development project (Project). The purpose of this study is to determine the amount of traffic generated by the proposed Project and to analyze the impacts of the Project on the affected portions of the circulation system.

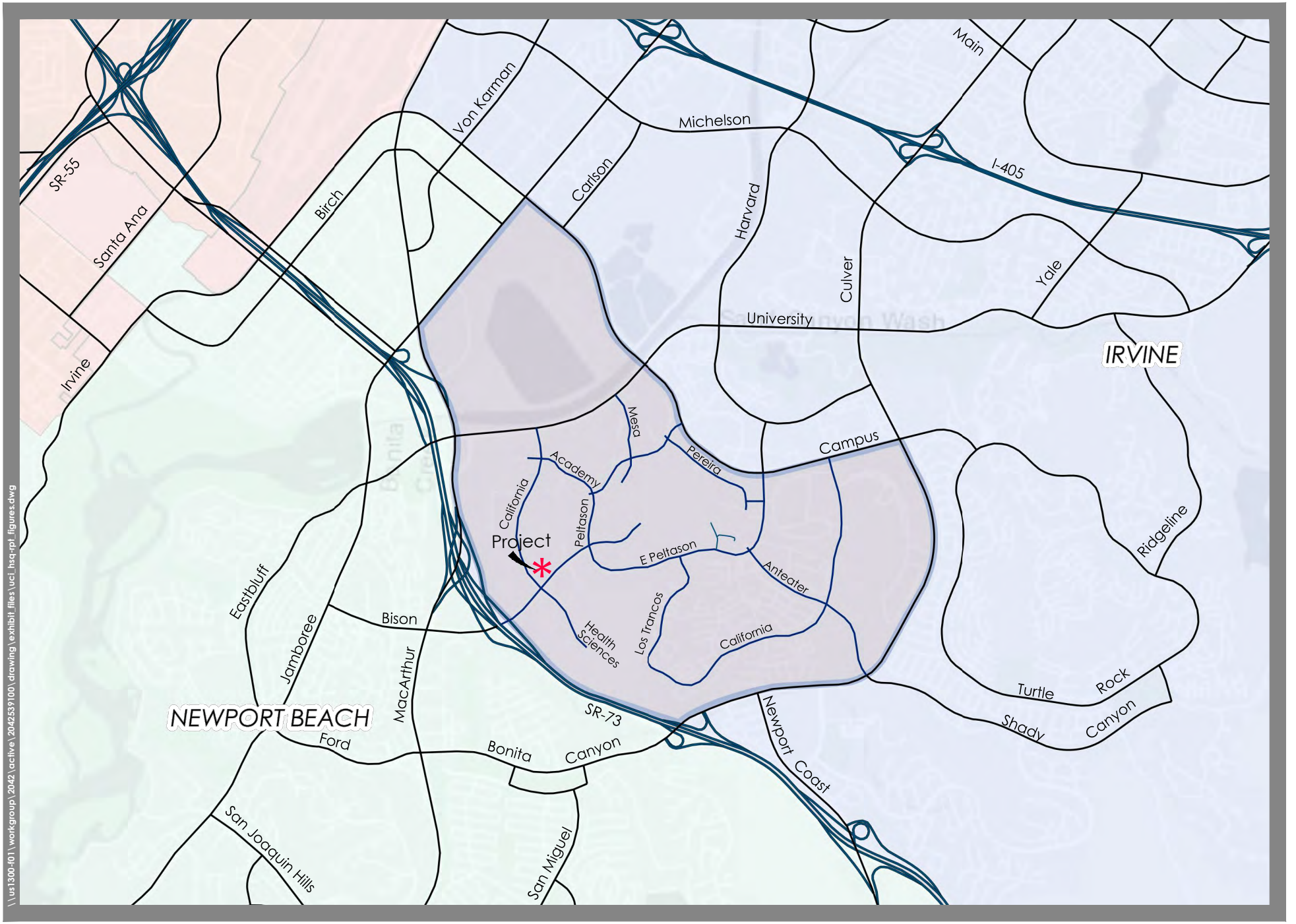
1.1 BACKGROUND AND SCOPE

The Project site is located at the north corner of California Avenue and Bison Avenue as shown in Figure 1-1. The site surrounds the existing Gavin Herbert Eye Institute and is an expansion of the health sciences campus. The proposed Project includes development of two new buildings of approximately 220,000 square feet consisting of clinical and academic uses. The two buildings consist of a four to five-story, approximately 125,000 square feet College of Health Sciences (COHS) building and a four to five story, approximately 95,000 square feet College of Nursing building. This report also provides discussion on an additional approximately 350-space surface parking lot that would be constructed as part of the Project.

The current UCI Long Range Development Plan (LRDP) was adopted in 2007 and established a land use plan and physical planning framework to accommodate projected enrollment levels, additional academic facilities and housing, and the on-campus circulation system through the 2025-2026 horizon year. The Project site's land use is designated in the LRDP traffic study as Mixed Use – Academic Use and Support Facilities, and the LRDP land use designation is Income-Producing Inclusion Area. Although additional faculty and staff would be hired as part of the Project, the proposed Project does not result in an increase to enrollment levels or to the number of UCI faculty and staff analyzed in the LRDP.

This traffic study includes existing conditions and long-range cumulative conditions (2035 and beyond) scenarios. The long-range analysis examines the Project in a LRDP buildout context. The study area includes intersections located in the City of Irvine, as well as intersections and mid-block segments on the UCI main campus. Vehicle Miles of Travel (VMT) analysis is also provided based on the new CEQA guidelines to determine the significant impacts.

Chapter 2.0 of this report provides the transportation setting for the impact analysis, and Chapter 3.0 provides a detailed Project description. Chapter 4.0 focuses on the potential traffic impacts of the Project.



Stantec

Figure 1-1
Project Location
1.2

1.2 STUDY AREA

The UCI campus is located in the southwest portion of the City of Irvine and is adjacent to the City of Newport Beach. The study area encompasses three intersections in and around the UCI campus. Two of the intersections are located within the UCI campus and one intersection is located at the perimeter of the UCI campus in the surrounding City of Irvine. There are no Orange County Congestion Management Program (CMP) monitoring intersections within the study area. See Figure 1-2 for the location of the study area intersections.

The study area was defined by identifying how Project trips would distribute to the adjacent roads and determining the limits of where Project peak hour impacts become insignificant. Key intersections within the study area were selected for peak hour analysis. The study area limits were determined based on the above mentioned guidance, which is consistent with the Irvine Traffic Impact Analysis Guidelines.

1.3 METHODOLOGY

Existing traffic counts were collected for key roadway segments and study intersections to describe existing traffic conditions. Long-range traffic forecasts for the study area circulation system were obtained from the UCI LRDP 2007 traffic study.

Project-generated traffic volumes are estimated using the UCI Main Campus Traffic Model (MCTM) and the overall distribution of Project traffic is based on the Project site location in relation to the surrounding uses while taking into account the proposed driveway locations, existing traffic flow patterns and engineering judgement.

The Project volumes were then added to the existing traffic counts and the model forecasts resulting in forecasts of existing with-Project and LRDP build-out with-Project volumes. The analysis compares with-Project volumes to no-Project volumes to identify Project impacts.

1.4 PERFORMANCE CRITERIA

The traffic analysis uses a set of performance criteria for evaluating intersection capacity to determine potential Project impacts. In traffic impact studies, impact criteria are based on two primary measures. The first is “capacity,” which establishes the vehicle carrying ability of a road segment, and the second is “volume.” The volume-to-capacity (V/C) ratio corresponds with a level of service (LOS). Traffic LOS is designated A through F, with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Traffic flow quality for the different LOS is described in Table 1-1. The ICU values and vehicle delay ranges that correspond to LOS A through F are summarized in Table 1-2.

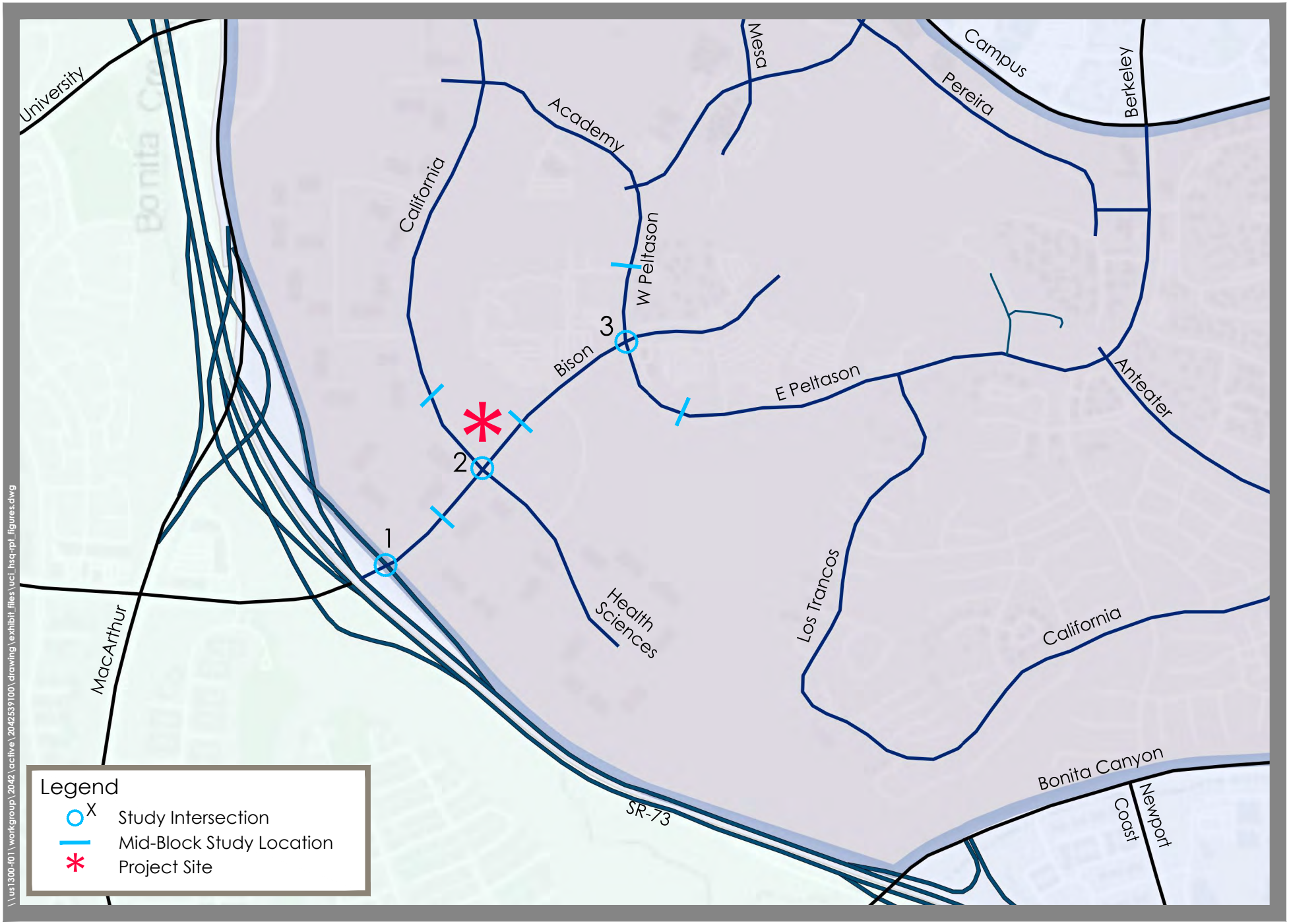


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Figure 1-2
Study Locations
1.4

Table 1-1 Level of Service Descriptions – Arterial Streets and Intersections

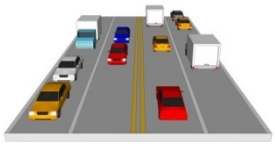
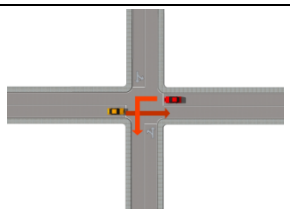
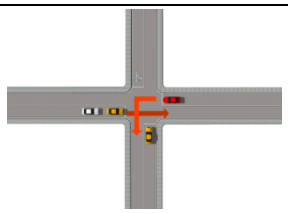
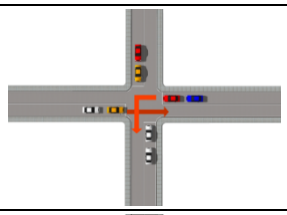
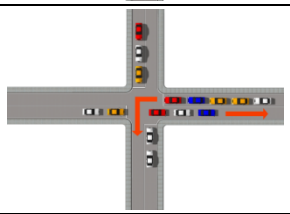
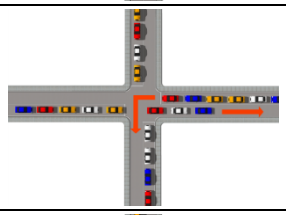
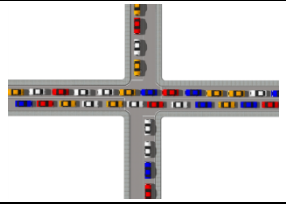
Level of Service (LOS)		Description
A		LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B		LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C		LOS C describes stable operation. The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B. Longer queues at the intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D		LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E		LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F		LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed.
Source: Highway Capacity Manual 6th Edition, Transportation Research Board, National Research Council		

Table 1-2 Intersection Level of Service Ranges

Level of Service (LOS)		Intersection Capacity Utilization (ICU)
A		0.00 – 0.60
B		0.61 – 0.70
C		0.71 – 0.80
D		0.81 – 0.90
E		0.91 – 1.00
F		Above 1.00

Sources: Orange County Congestion Management Program

Average daily traffic (ADT) volumes are presented for mid-block roadway segments in the study area. The traffic analysis also analyzes the AM and PM peak hour volumes for study area intersections. Peak hour volumes and capacities are compared by means of intersection capacity utilization (ICU) values for signalized intersections.

Both the V/C and LOS are used in identifying impacts. Certain LOS values are deemed acceptable by the various governing jurisdictions within the traffic analysis study area and increases in the V/C ratio which cause or contribute to the LOS being unacceptable are defined as an adverse impact. LOS D is the performance standard applied in this study for the intersections in the study area.

The performance criteria typically utilized by UCI for intersections are identical to the City of Irvine's performance criteria, which were used in the analysis to identify Project impacts at the signalized intersection locations. Significant impacts are defined for this analysis as an increase of 0.02 or more in the ICU value causing or worsening LOS E or F conditions, consistent with the City of Irvine Traffic Impact Analysis Guidelines. The performance criteria applied for this analysis are summarized in Table 1-3.

Table 1-3 Performance Criteria for Locations Analyzed within the Study Area

Intersections

V/C Calculation Methodology

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

For City of Irvine & UCI Intersections:

Saturation Flow Rate: 1,700 vehicles/hour/lane

Clearance Interval: .05

Right-Turn-On-Red Utilization Factor*: .75

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

Performance Standard

Level of service D

Mitigation Requirement

Traffic impacts occur at an intersection if either of the two conditions are met:

- A location is at acceptable Level of Service (LOS) in the baseline condition, and the project causes the location to become deficient; or
- A location is deficient in the baseline condition, and the project causes the location to further deteriorate by at least two percent.

Note: This is according to the City of Irvine's adopted performance criteria, thresholds of significance, and General Plan standards.

1.5 REFERENCES

1. Traffic Impact Analysis Guidelines, City of Irvine Public Works Department, August 24, 2004.
2. Highway Capacity Manual Sixth Edition, Transportation Research Board, 2010.
3. Orange County Congestion Management Program, Orange County Transportation Authority, November 2015.
4. University of California Irvine Long Range Development Plan 2007 Update Traffic Study, Austin-Foust Associates, Inc., May 2007.

2.0 TRANSPORTATION SETTING

This chapter describes the transportation setting for the proposed Project. Existing conditions in the traffic analysis study area are summarized and the future circulation system planned for the UCI LRDP build-out is described.

2.1 EXISTING ROADWAY SYSTEM

The UCI campus is located in the southwest portion of the City of Irvine and is adjacent to the City of Newport Beach. The study area encompasses two intersections within the UCI campus and one intersection at the perimeter of the UCI campus and in the surrounding City of Irvine. The three study intersections are controlled by traffic signals. The off-campus study intersection is located at the intersection of the SR 73 NB Ramps and Bison Avenue. Intersection lane configurations and intersection controls are illustrated in Figure 2-1.

Bison Avenue provides four travel lanes with a raised median through the study area. The speed limit is 40 mph in the vicinity of the Project site. On-street parking is not allowed, and a striped bike lane is provided.

California Avenue is designated as a primary arterial by the City of Irvine and runs from University Drive to Health Sciences Road. It provides four travel lanes with a raised median through the study area. The speed limit is 35 mph from Bison Avenue to Health Science Road and 45 mph from University Drive to Bison Avenue. On-street parking is not allowed, and a striped bike lane is provided.

West Peltason Drive begins opposite Bridge Road at Campus Drive and changes names to East Peltason Drive at the Bison Avenue intersection. It loops through the UCI campus to opposite Berkeley Avenue at Campus Drive. Peltason Drive is a two-lane local street through most of the campus with a raised median east of Bison Avenue, and a four-lane local street with a raised median from Pereira Drive to Berkeley Avenue. The speed limit is 30 mph. On-street parking is not allowed. An on-street bike lane is provided.

2.2 EXISTING TRAFFIC VOLUMES

Existing ADT and peak hour volumes were counted in February 2017 and March 2018 while classes were in session. ADT volumes were counted for key roadway segments on campus and along Bison Avenue, California Avenue, and Peltason Drive, and existing peak hour turning movement volumes were collected at the existing study intersections. Figure 2-2 illustrates the existing study area ADT, AM and PM peak hour volumes. Actual count data is included in Appendix A.

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Figure 2-1

Existing Intersection Lane Configurations and Traffic Control

2.2

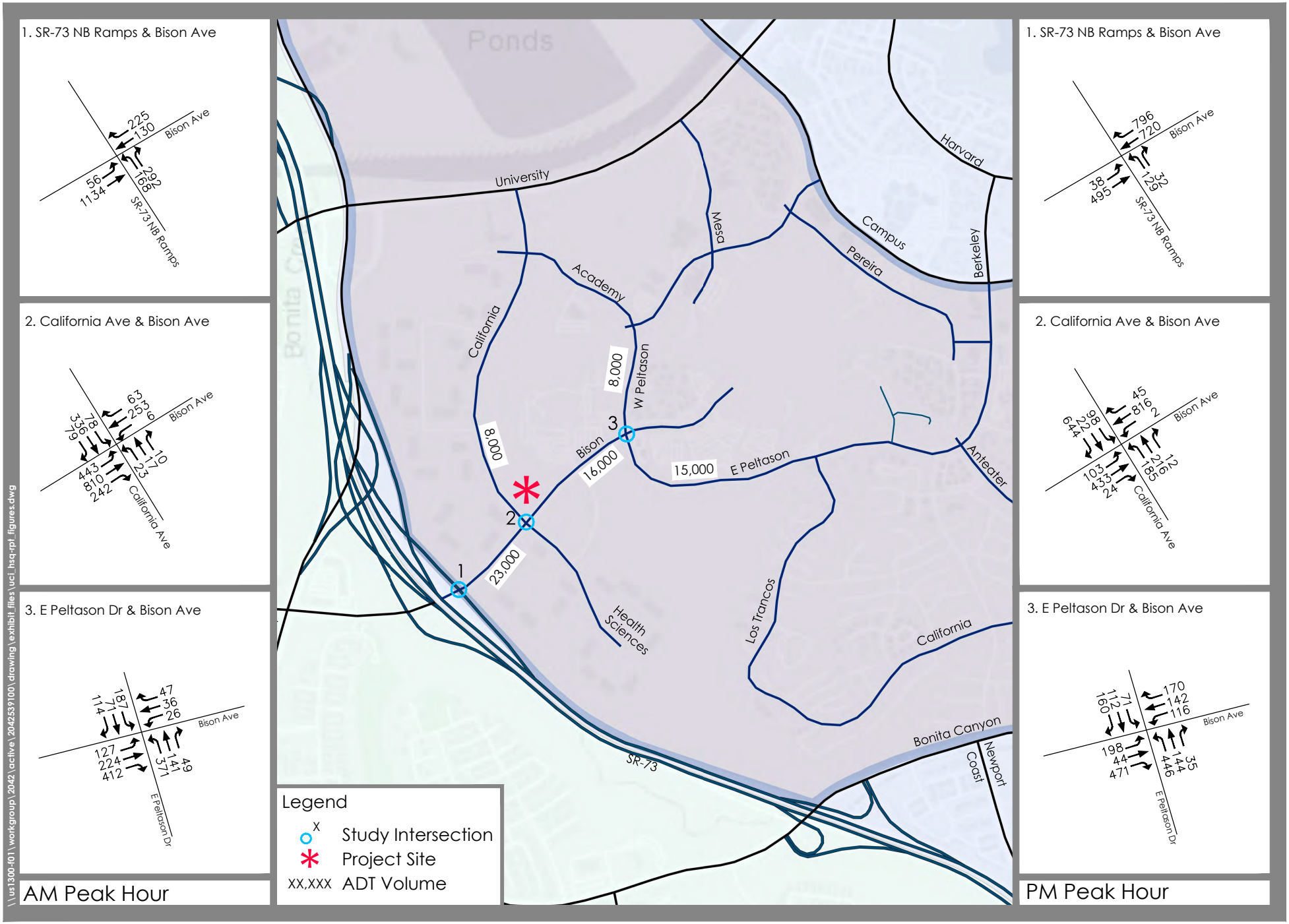

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Figure 2-2

Existing ADT and Peak Hour Volumes

2.3

2.3 EXISTING INTERSECTION LEVELS OF SERVICE

Existing ICU values were calculated for the signalized study intersections based on the AM and PM peak hour turning movement counts presented above and existing lane configurations. Existing AM and PM peak hour ICU and delay values are summarized in Table 2-1. Actual ICU calculation worksheets are included in Appendix B.

Table 2-1 Existing Intersection LOS Summary

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		ICU	LOS	ICU	LOS
1. SR 73 NB Ramps & Bison Ave	Irvine/Caltrans	0.47	A	0.55	A
2. California Ave & Bison Ave	UCI	0.49	A	0.60	A
3. W. Peltason Dr & Bison Ave	UCI	0.54	A	0.65	B

As Table 2-1 shows, all the study intersections currently operate at LOS A or LOS B during the AM peak hour and PM peak hour based on the ICU methodology.

2.4 LRDP BUILD-OUT NO-PROJECT TRAFFIC VOLUME FORECASTS

LRDP build-out traffic forecasts for the study area intersections are obtained from the UCI LRDP 2007 Traffic Study. The volumes were adjusted as needed based on the current existing counts.

Figure 2-3 illustrates LRDP build-out no-Project ADT volumes on mid-block roadway segments in the study area and LRDP build-out no-Project AM and PM peak hour intersection volumes.

Table 2-2 summarizes the LRDP build-out no-Project ICU values at the study intersections. Under LRDP build-out no-Project conditions, all study intersections would operate at acceptable LOS D or better during the AM and PM peak hours.

Table 2-2 LRDP Build-out No-Project Intersection LOS Summary

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		ICU	LOS	ICU	LOS
1. SR 73 NB Ramps & Bison Ave	Irvine/Caltrans	0.63	B	0.67	B
2. California Ave & Bison Ave	UCI	0.83	D	0.80	C
3. W. Peltason Dr & Bison Ave	UCI	0.74	C	0.70	B

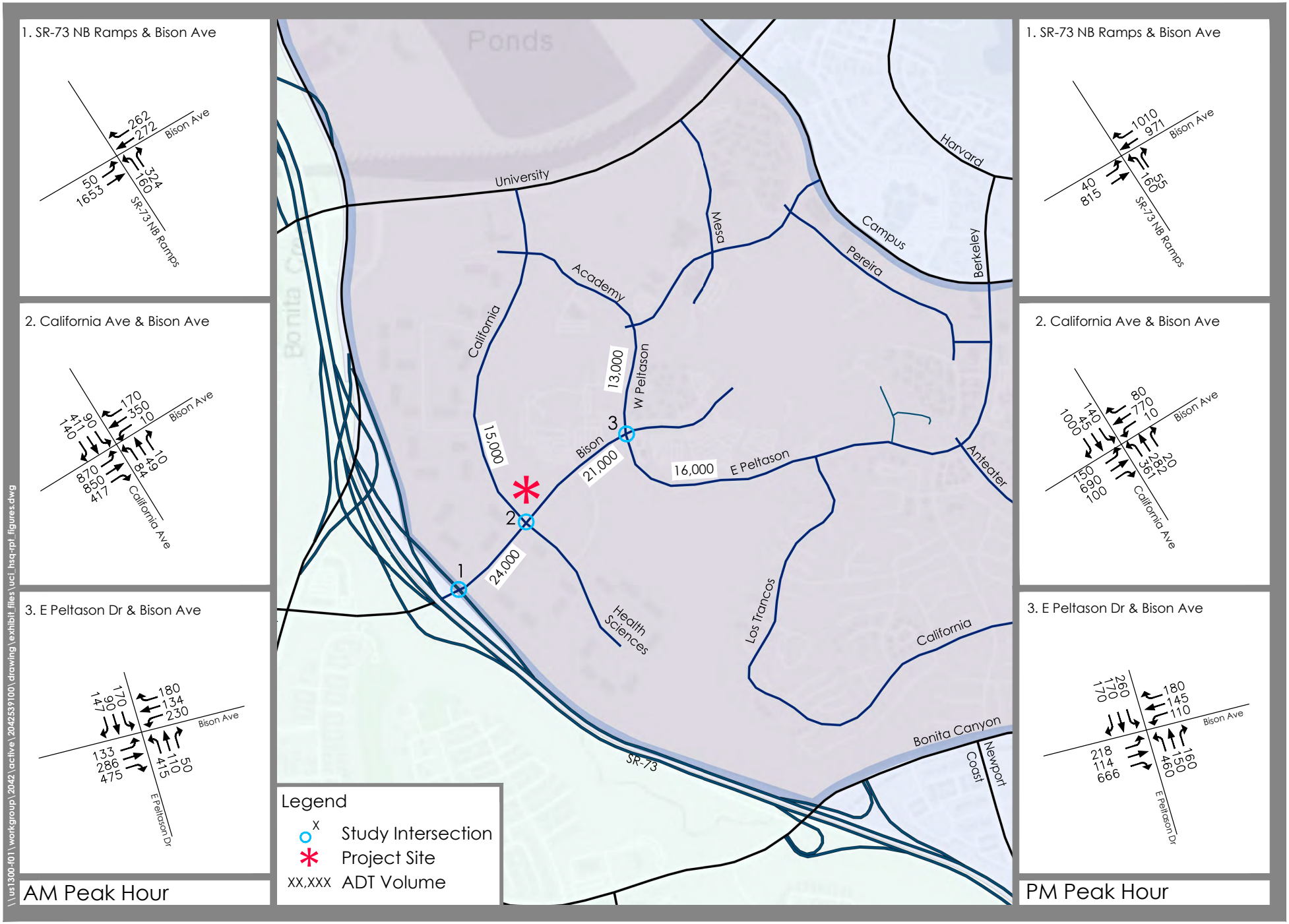

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Figure 2-3

LRDP Build-Out No-Project ADT and Peak Hour Volumes

2.5

3.0 PROPOSED PROJECT

This chapter describes the traffic characteristics of the proposed Project. Trip generation for the Project is summarized and the distribution of Project trips on the study area circulation system is presented.

3.1 PROJECT DESCRIPTION

The Project site is located at the north corner of California Avenue and Bison Avenue. The site surrounds the existing Gavin Herbert Eye Institute and is an expansion of the health sciences campus. The proposed Project includes development of two new buildings—the COHS and a Nursing building. See Figure 3-1 for the proposed site plan.

The COHS includes development of a four to five story building of approximately 125,000 square feet for academic and clinical use. Approximately 100,000 square feet is for academic use for existing faculty, staff and students, and approximately 25,000 square feet would be for clinical space. The Samueli Integrative Health Institute, an existing off-campus clinic located on Bristol Street in Costa Mesa, would be relocated within the COHS building. The Samueli Integrative Health Institute currently has approximately 100 off-campus visitors per day.

The Nursing building includes development of a four to five story building of approximately 95,000 square feet of academic use for the existing on-campus faculty, staff and students. The Project would include approximately 25 new faculty and staff to support COHS and Nursing building.

The proposed Project would be accessed primarily via an existing driveway on Bison Avenue opposite to Health Sciences Road. It is a full-access driveway and a new traffic signal was installed at this intersection in Spring 2019. A secondary site access that would be a full-access driveway is proposed on California Avenue, just north of Bison Avenue.

Due to the circulation modifications and realignment included as part of the project, 461 existing on-site parking spaces to the west and north of the Gavin Herbert Eye Institute and within Lot 83 would be demolished during construction. These spaces would be replaced at a one-to-one ratio north of the two new buildings and within Lot 83.

An additional approximately 350-space surface parking lot would be constructed north of the replacement parking and would be accessed through the existing Lot HT. It should be noted that this 350-space parking lot would not generate any additional new traffic but there would be more traffic accessing the Project site to utilize the larger parking lot area. There is an existing approximately 1,000-space Bison parking lot on the south corner of California Avenue and Bison Avenue (Bison parking lot) and it is anticipated that a lesser amount of Project traffic would utilize the Bison lot if the larger parking area is provided at the Project site.

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Figure 3-1
Site Plan
3.2

3.2 TRIP GENERATION

Trip generation rates for the proposed Project are consistent with the UCI Main Campus Traffic Model trip rates for Faculty and Medical Clinic. See Appendix C for UCI MCTM LRDP 2007 Trip Rate Summary. Table 3-1 shows the derivation of the estimated trip generation and corresponding trip rates for the proposed Project. As shown in the table, the Project would generate a total of 937 daily trips of which 75 trips would occur during the AM peak hour and 90 trips during the PM peak hour.

3.3 TRIP DISTRIBUTION

The trips accessing the parking lot will use Bison Avenue, California Avenue, and West Peltason Drive to access the surrounding circulation system.

Project trip distribution was determined based on the Project site location in relation to the surrounding uses while taking into account the proposed driveway locations, existing traffic flow patterns and engineering judgement. Approximately 60 percent of the Project trips are estimated to use the Bison Avenue driveway, with 25 percent oriented toward the west on Bison Avenue and approximately 35 percent oriented toward the east on Bison Avenue and continuing along West Peltason Drive and East Peltason Drive. Approximately 40 percent of the Project trips are anticipated to use the new driveway on California Avenue to access the Project site. Of those, approximately 20 percent are oriented towards the north on California Avenue and the remaining 20 percent are oriented towards the south on California Avenue.

Figure 3-2 illustrates the general distribution of trips for the proposed Project. Figure 3-3 illustrates the Project ADT volumes on the study area roadways and the AM and PM peak hour Project-generated trips based on the distribution.

3.4 SITE ACCESS

The primary access to the Project site would be via the intersection of Bison Avenue and the Project driveway opposite of Health Science Road, located approximately midway between California Avenue and Peltason Drive. It is a full-access driveway and a new traffic signal was installed at this intersection in Spring 2019. A secondary site access is proposed on California Avenue approximately 650 feet north of Bison Avenue. It would be a full access driveway with stop-control for the driveway.

Table 3-1 Proposed Project Trip Generation Summary

ADT Trip Rate					
Land Use	**Unit**	**Rate A**	**Rate B**	**Rate A Description**	**Rate B Description**
Faculty	PER	0.85	1.9	Proportion of Commuters	Person Trips / Commuter
Medical Clinic	TSF	33.00	3.0	External vehicle trips	Internal vehicle trips

Project ADT Trip Generation					
Land Use	**Amount**	**Unit**	**Rate A**	**Rate B**	**Total**
Faculty	25	PER	21	40	37*
Medical Clinic	25	TSF	825	75	900
Total					**937**

Peak Hour Trip Rates (Percent of ADT)				
	AM Peak Hour		**PM Peak Hour**	
Land Use	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Academic Use - Faculty	8.00%	0.70%	2.00%	7.50%
Medical Clinic	6.50%	1.50%	3.00%	6.50%

Project Peak Hour Trip Generation							
	AM Peak Hour			**PM Peak Hour**			
Land Use	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**ADT**
Faculty	**3**	**0**	**3**	**1**	**3**	**4**	**37**
Medical Clinic - External Trips	54	12	66	25	54	79	825
Medical Clinic - Internal Trips	5	1	6	2	5	7	75
Medical Clinic - Total Trips	**59**	**13**	**72**	**27**	**59**	**86**	**900**
Total Trips	**62**	**13**	**75**	**28**	**62**	**90**	**937**

Note:
Trip Rate Source: UCI Main Campus Traffic Model
*Includes faculty/staff average vehicle occupancy of 1.1 persons per vehicle

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Figure 3-2
Project Distribution Percentages
3.5

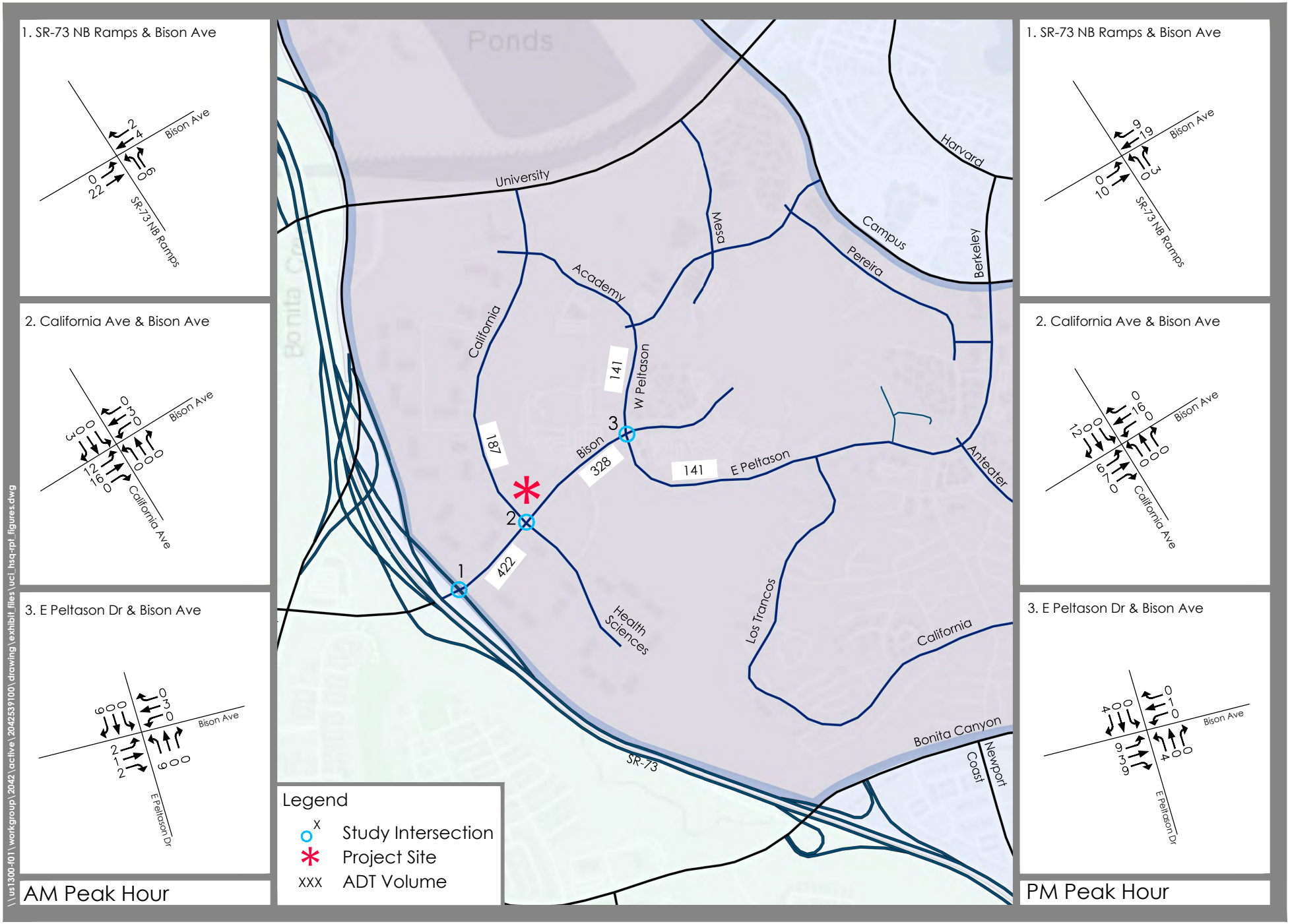

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Figure 3-3

Project-Generated ADT and Peak Hour Volumes

3.6

4.0 IMPACT ANALYSIS

This chapter presents the traffic conditions with the Project generated traffic and evaluates the Project impacts on the study intersections. Project increases resulting in significant impacts, if any, are discussed and mitigation measures are identified if necessary.

4.1 EXISTING PLUS PROJECT CONDITIONS

In this Section, impacts from the proposed Project are analyzed under existing conditions. Existing-plus-Project peak hour volumes were obtained by adding the Project-generated peak hour trips to the existing intersection turning movement volumes at the study intersections.

Figure 4-1 illustrates the existing-plus-Project ADT volumes on the mid-block roadway segments in the study area and the peak hour volumes at the study intersections during the AM peak hour and the PM peak hour.

The existing and existing-plus-Project LOS based on existing lane configurations are summarized in Table 4-1. As shown in the table, the study intersections continue to operate at LOS A and LOS B during the AM and PM peak hours with the addition of the proposed Project traffic. The Project would result in less than significant impact at the study intersections under existing conditions. The ICU calculation worksheets are included in Appendix B.

Table 4-1 Existing Plus Project Intersection LOS Summary

	Existing				Existing + Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1. SR 73 NB Ramps & Bison Ave	0.47	A	0.55	A	0.48	A	0.55	A	0.01	0.00
2. California Ave & Bison Ave	0.49	A	0.60	A	0.52	A	0.62	B	0.03	0.02
3. W. Peltason Dr & Bison Ave	0.54	A	0.65	B	0.54	A	0.65	B	0.00	0.00

4.2 LRDP BUILD-OUT WITH-PROJECT ANALYSIS

Impacts from the proposed Project under LRDP build-out conditions are analyzed in this section. LRDP build-out with-Project peak hour volumes were obtained by adding the Project-generated peak hour trips to the LRDP build-out without Project volumes. Figure 4-2 illustrates the LRDP build-out with-Project ADT and peak hour volumes. The LRDP build-out with and without Project ICU values and LOS of the study intersections are summarized in Table 4-2 below.

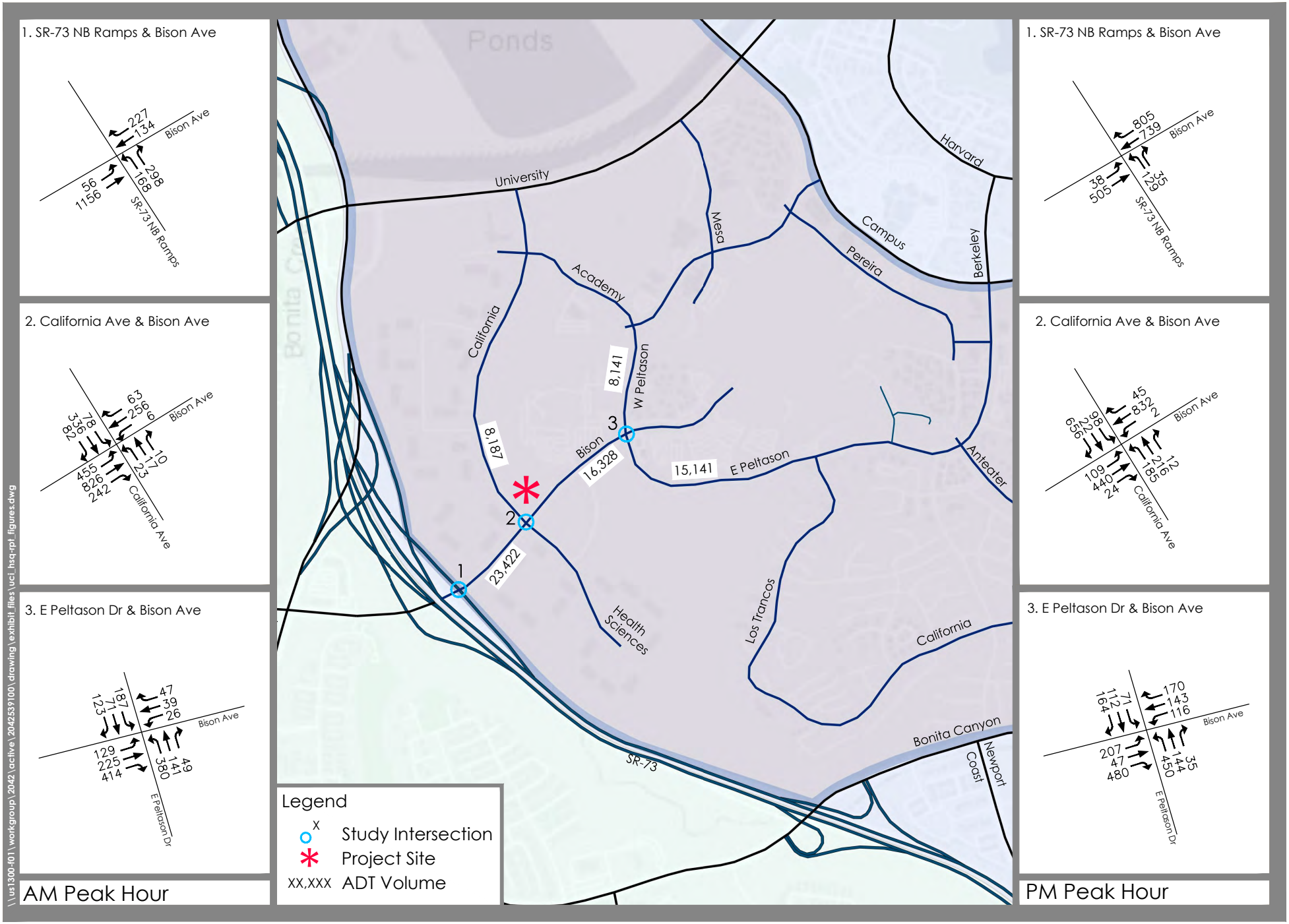

Figure 4-1

Existing Plus Project ADT and Peak Hour Volumes

4.2

The intersections operate at an acceptable LOS D or better during the AM and PM peak hours. The Project has no significant impact on the study intersections under LRDP build-out conditions and therefore no mitigation is required.

Table 4-2 LRDP Build-out with-Project Intersection LOS Summary

	LRDP Build-out without Project				LRDP Build-out with Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**	**AM**	**PM**
1. SR 73 NB Ramps & Bison Ave	0.63	B	0.67	B	0.64	B	0.68	B	0.01	0.01
2. California Ave & Bison Ave	0.83	D	0.80	C	0.89	D	0.83	D	0.06	0.03
3. W. Peltason Dr & Bison Ave	0.74	C	0.70	B	0.74	C	0.70	B	0.00	0.00

4.3 VEHICLE MILES TRAVELED (VMT) ANALYSIS

Under the California Environmental Quality Act (CEQA), administrative regulations and guidelines are set forth that explain how to determine whether an activity (i.e., proposed project) is subject to environmental review, the steps, and the required content. Since the original Act, subsequent legislations have updated the CEQA guidelines that demonstrated the State's efforts to improve air quality and reduce greenhouse gas emissions through transportation planning. Beginning July 1, 2020, updated CEQA guidelines will go into effect that include sections created by Senate Bill 743. Local agencies have the option to implement the new guidelines immediately, however, the provisions of the updated sections will apply statewide beginning July 1, 2020.

SB 743 requires the Governor's Office of Planning and Research (OPR) to establish recommendations for identifying and mitigating transportation impacts within CEQA. Generally, SB 743 moves away from using delay-based level of service as the primary metric for identifying a project's significant impact to vehicle miles traveled (VMT). The final Technical Advisory released by OPR in December 2018 provides guidance on evaluating transportation impacts and VMT. The Technical Advisory recommends new significance thresholds that may constitute a significant transportation impact. The recommended significance thresholds are summarized in Table 4-3.

Table 4-3 SB 743 Recommended Significance Thresholds

Type:	Metric:	Threshold:
Residential development	Household VMT per capita	15% less than existing city household VMT per capita or regional household VMT per capita
Office development	VMT per employee	15% less than existing regional VMT per employee
Retail development	Total VMT	If project causes a net increase in total VMT

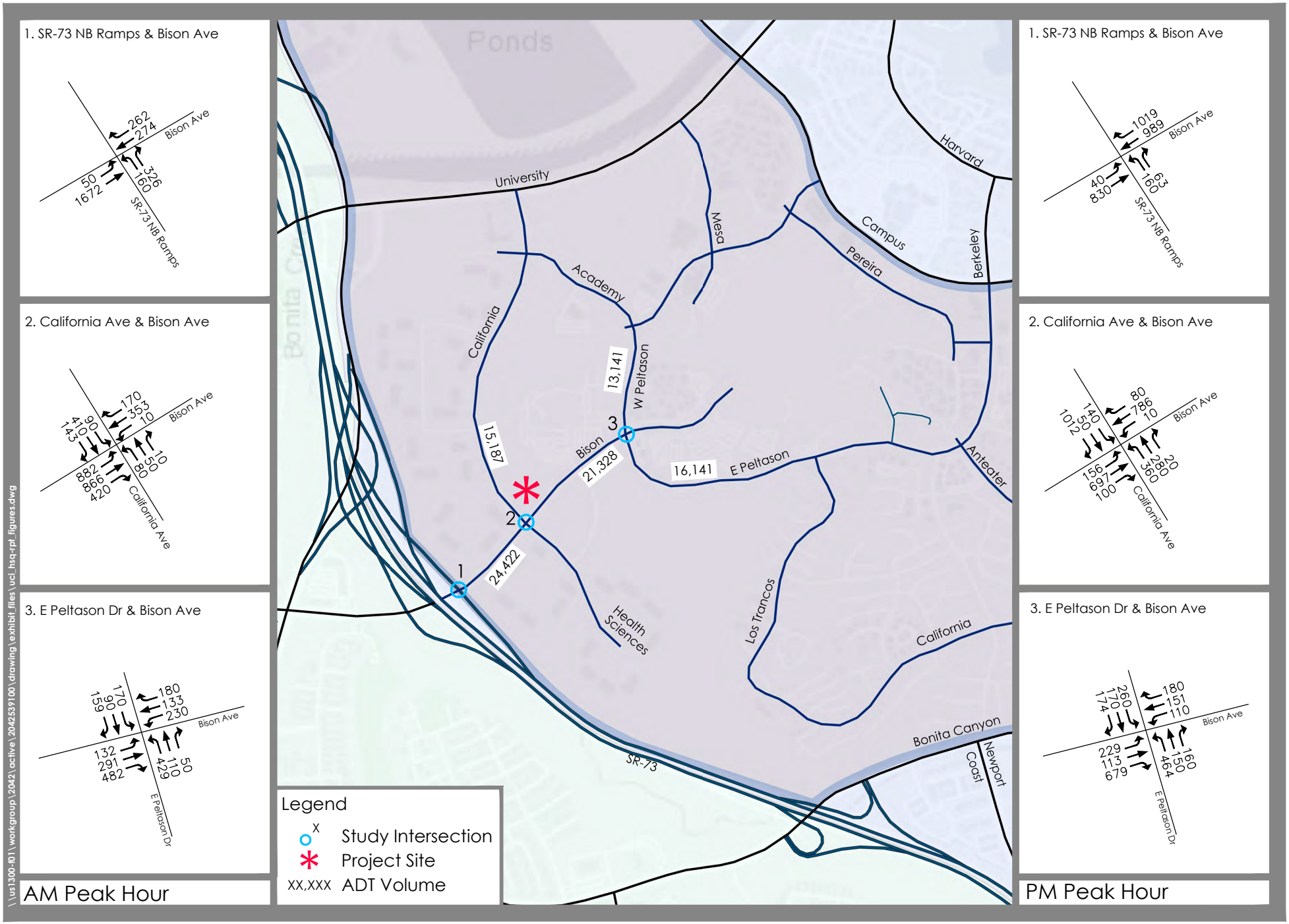

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Figure 4-2

LRDP Build-Out With Project ADT and Peak Hour Volumes

4.4

If a significant impact is identified utilizing the aforementioned significance thresholds, mitigation must be identified. The overall goal of utilizing VMT and the newly defined significance thresholds is to meet Statewide air quality and greenhouse gas emissions targets, promote more efficient development patterns, and facilitate use of transit and non-motorized transportation.

OPR notes that lead agencies have the discretion to set or apply their own thresholds of significance. Since UCI is located within the City of Irvine, significance thresholds set by the City may be appropriate for UCI. However, since the City is currently in the process of updating the Irvine Traffic Analysis Model (ITAM) and has yet to establish a VMT threshold, the California State Transportation Demand Model (CSTDM) was utilized for this study to establish thresholds and calculate VMT data for the project site. The CSTDM is maintained by Caltrans and is recommended by OPR as a source for lead agencies to establish a regional threshold.

Prior to undertaking a detailed VMT study, the OPR advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study". During the screening process, if the project meets one of the established criteria, then the project can be expected to cause a less-than-significant impact. The screening criteria is summarized in Table 4-4.

4.3.1 VMT Analysis

As recommended in the Technical Advisory, Table 4-5 summarizes the results of a screening conducted to identify if the proposed Project is expected to cause a less-than-significant impact. While the Technical Advisory addresses Residential, Office and Transportation Projects, atypical uses such as University-uses are not addressed. For purposes of this analysis, the proposed Project has been evaluated as an office use and provides a conservative worst-case scenario.

As shown in Table 4-5, to screen the Project, the Map-Based screening criteria was selected (See Figure 4-3 for map). As noted above, the Technical Advisory does not address atypical uses such as University-uses, therefore the Project was evaluated as an office use because of the similar travel patterns of faculty and staff (i.e., employees), specifically the commute between home and work during the AM peak period and PM peak periods. The regional VMT per employee was compared to the VMT per employee for CSTDM traffic analysis zone (TAZ) 5091.

To derive the regional average VMT per employee, the maximum distance that commuters would commute to the campus was used to define the regional area. Specifically, the regional area is defined by cities and unincorporated areas within a 70-mile radius from the campus. Using 2010 data from CSTDM, the resulting regional existing average VMT per employee is 34.05 VMT per employee. When a 15% reduction is applied to existing conditions, the VMT per employee threshold becomes 28.94 VMT per employee.

Table 4-4 VMT Screening Criteria

Criteria:	Description:
Screening Threshold for Small Projects	Projects that generate or attract less than 110 trips per day, may be assumed to cause a less-than-significant impact
Map-Based Screening for Residential and Office Projects	Residential and office projects that locate in areas with low VMT, and that incorporate similar features will tend to exhibit similar low VMT and therefore can be screened out from needing to prepare a detailed VMT analysis According to the Technical Advisory, an area with "low" VMT can be illustrated with data from a travel survey or a travel demand model. A "low" VMT area is defined as an area that is currently below threshold VMT[1]
Presumption of Less Than Significant Impact Near Transit Stations	Projects that are a mix of uses and are within ½ mile of an existing major transit stop or along a high quality transit corridor will have less-than-significant impact on VMT
Redevelopment Projects	If the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net increase of local-serving retail, transportation impacts from the retail portion of the development should be presumed to be less than significant.

[1] The threshold is 15% below existing VMT per capita for residential projects and 15% below existing regional VMT per employee
Source: OPR Technical Advisory on Evaluating Transportation Impacts in CEQA

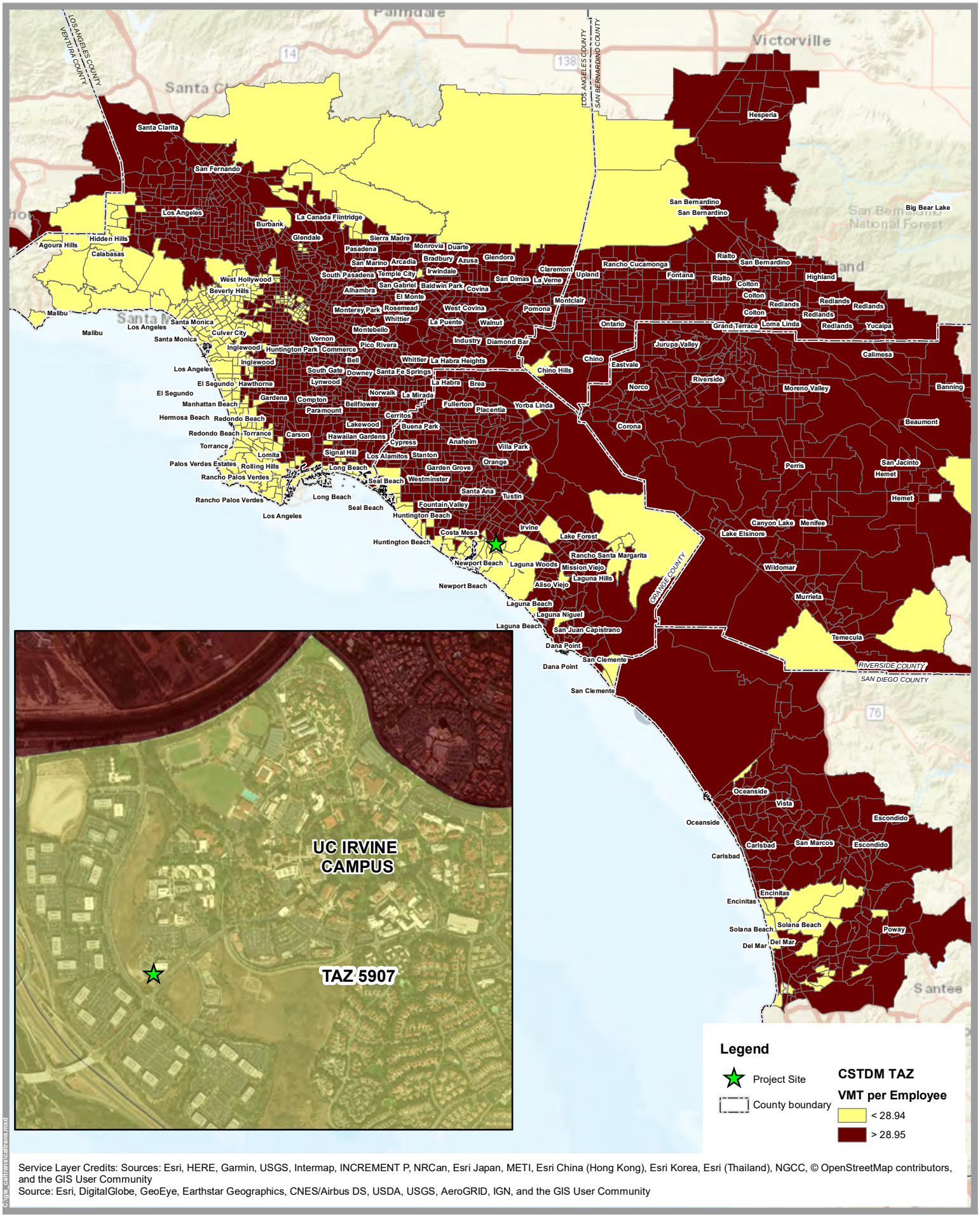
Table 4-5 Project VMT Screening Summary

Criteria	**Metric**	**Regional Threshold**[1]	**College of Health Science and College of Nursing**[2]	**Less than significant**
Map-Based Screening for Residential and Office Projects	Low VMT areas, measured by VMT per employee	28.94	28.72	**Yes**

[1] The regional threshold includes cities and unincorporated area within approximately 70 miles from the campus. The regional average VMT per employee is 34.05 using data from CSTDM. The regional threshold is 15% below existing average regional VMT per employee.
[2] Average VMT per employee shown is per CSTDM TAZ 5091

The UC Irvine campus is located in CSTDM TAZ 5907 and makes up the entire TAZ 5907 area. The existing average VMT per employee for TAZ 5907 is 28.72 VMT per employee. Since 28.72 VMT per employee is less than the regional threshold, the Project's location is considered a low-VMT area. This methodology of comparing the Project's TAZ VMT per employee to the regional VMT per employee threshold (and using the same travel demand model for both) follows the methodology suggested by OPR for map-based screening for office projects.

Therefore, based on OPR's guidelines, since the project is in a low VMT area (currently below threshold VMT), the Project would likely result in similar level VMT. Therefore, the Project will have a less than significant impact to VMT.



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stantec

N

Figure 4-3
Map-Based Screening - CSTDM
4.7

In regard to the clinical use, the existing site of the clinic is located approximately three miles from the proposed College of Health Science site and has approximately 100 off-campus visitors per day. Rerouting the existing users to the proposed site is expected to not represent longer travel distances, on average, in comparison to the current travel distances when considering all trips coming from different parts of the region.

5.0 CONCLUSIONS

The proposed Project would consist of the construction of two new buildings—the COHS and a Nursing building. The COHS includes approximately 100,000 square feet of academic use and 25,000 square feet of clinical space. The Nursing building consists of approximately 95,000 square feet of academic use. The Project would include approximately 25 new faculty and staff. An additional approximately 350 space surface parking lot would be constructed as part of the Project.

The Project would generate approximately 937 daily trips, of which 75 trips would occur during the AM peak hour and 90 trips would occur during the PM peak hour. These peak hour trips were assigned to the surrounding street system and added to existing traffic volumes and to the model forecasts to determine the Project impacts during existing conditions and LRDP build-out conditions.

All study intersections operate at LOS B or better under existing conditions and operate at LOS D or better under LRDP build-out conditions. Therefore, the Project has a less than significant impact on the study intersections. The additional 350-space parking lot constructed as part of the Project would not generate any new traffic but would result in more traffic accessing the Project site and a corresponding reduction in traffic accessing other nearby parking lots.

A VMT analysis screening process was conducted to evaluate and identify Project VMT impacts. Based on the screening criteria, the Project VMT falls below the regional threshold of significance.

In conclusion, the proposed Project has a less than significant impact on the surrounding circulation system under existing or LRDP build-out conditions; therefore, no mitigation is required based on the LOS and the VMT analysis.

Appendix A TRAFFIC COUNT DATA

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

City: IRVINE
N-S Direction: SR-73 NB RAMPS
E-W Direction: BISON AVENUE

File Name : H1803019
Site Code : 00000000
Start Date : 3/8/2018

Groups Printed- Turning Movements

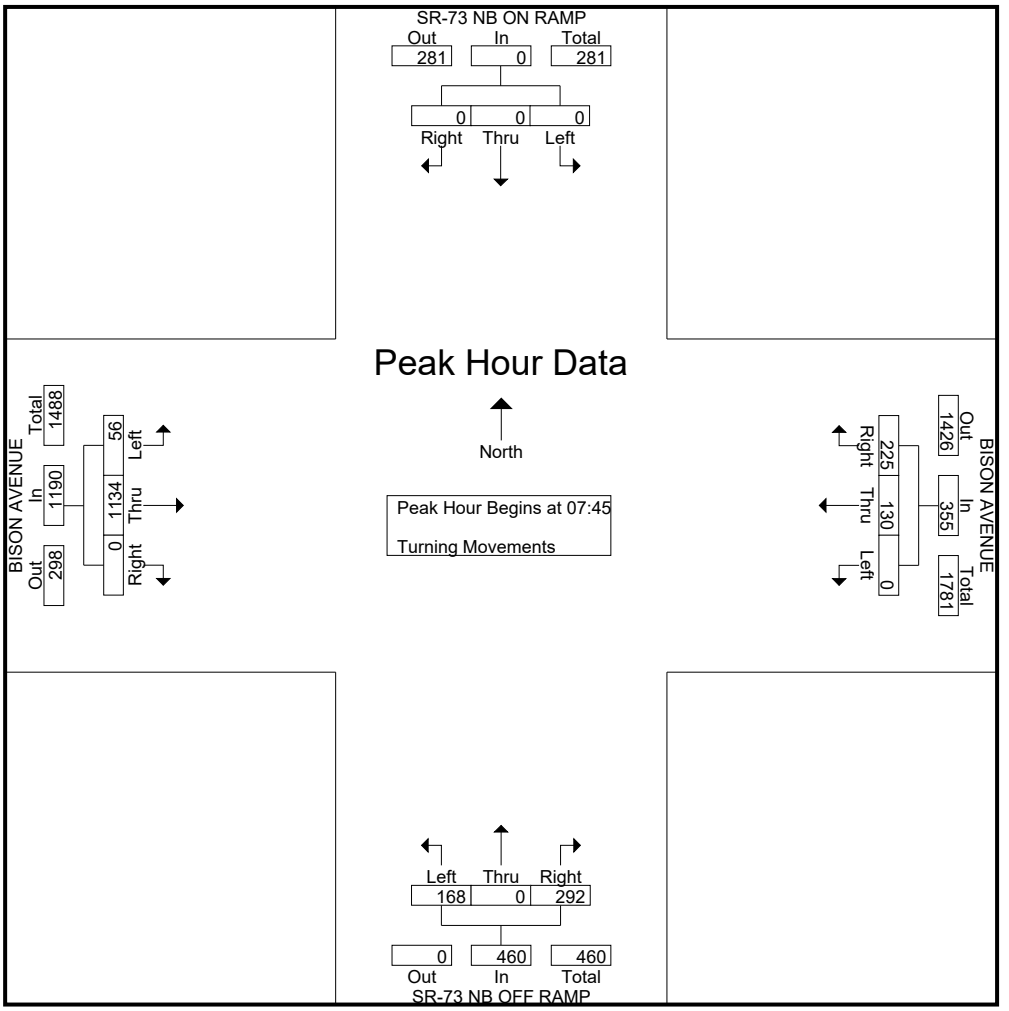
	SR-73 NB ON RAMP Southbound			BISON AVENUE Westbound			SR-73 NB OFF RAMP Northbound			BISON AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	0	0	38	12	0	29	0	26	0	176	11	292
07:15	0	0	0	67	14	0	34	0	30	0	254	5	404
07:30	0	0	0	62	21	0	61	0	26	0	288	15	473
07:45	0	0	0	62	38	0	79	0	42	0	319	11	551
Total	0	0	0	229	85	0	203	0	124	0	1037	42	1720
08:00	0	0	0	59	24	0	78	0	40	0	271	16	488
08:15	0	0	0	50	31	0	72	0	36	0	275	12	476
08:30	0	0	0	54	37	0	63	0	50	0	269	17	490
08:45	0	0	0	71	28	0	77	0	53	0	293	18	540
Total	0	0	0	234	120	0	290	0	179	0	1108	63	1994
*** BREAK ***													
16:00	0	0	0	212	89	0	6	0	19	0	91	13	430
16:15	0	0	0	167	79	0	10	0	25	0	106	19	406
16:30	0	0	0	203	99	0	4	0	23	0	122	10	461
16:45	0	0	0	211	114	0	12	0	25	0	129	10	501
Total	0	0	0	793	381	0	32	0	92	0	448	52	1798
17:00	0	0	0	201	266	0	2	0	30	0	105	9	613
17:15	0	0	0	218	202	0	7	0	36	0	124	12	599
17:30	0	0	0	166	138	0	11	0	38	0	137	7	497
17:45	0	0	0	154	109	0	7	0	40	0	147	17	474
Total	0	0	0	739	715	0	27	0	144	0	513	45	2183
Grand Total	0	0	0	1995	1301	0	552	0	539	0	3106	202	7695
Apprch %	0	0	0	60.5	39.5	0	50.6	0	49.4	0	93.9	6.1	
Total %	0	0	0	25.9	16.9	0	7.2	0	7	0	40.4	2.6	

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

City: IRVINE
N-S Direction: SR-73 NB RAMPS
E-W Direction: BISON AVENUE

File Name : H1803019
Site Code : 00000000
Start Date : 3/8/2018

	SR-73 NB ON RAMP Southbound				BISON AVENUE Westbound				SR-73 NB OFF RAMP Northbound				BISON AVENUE 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	0	0	0	0	**62**	**38**	0	**100**	**79**	0	42	**121**	0	**319**	11	**330**	**551**
08:00	0	0	0	0	59	24	0	83	78	0	40	118	0	271	16	287	488
08:15	0	0	0	0	50	31	0	81	72	0	36	108	0	275	12	287	476
08:30	0	0	0	0	54	37	0	91	63	0	**50**	113	0	269	**17**	286	490
Total Volume	0	0	0	0	225	130	0	355	292	0	168	460	0	1134	56	1190	2005
% App. Total	0	0	0		63.4	36.6	0		63.5	0	36.5		0	95.3	4.7		
PHF	.000	.000	.000	.000	.907	.855	.000	.888	.924	.000	.840	.950	.000	.889	.824	.902	.910

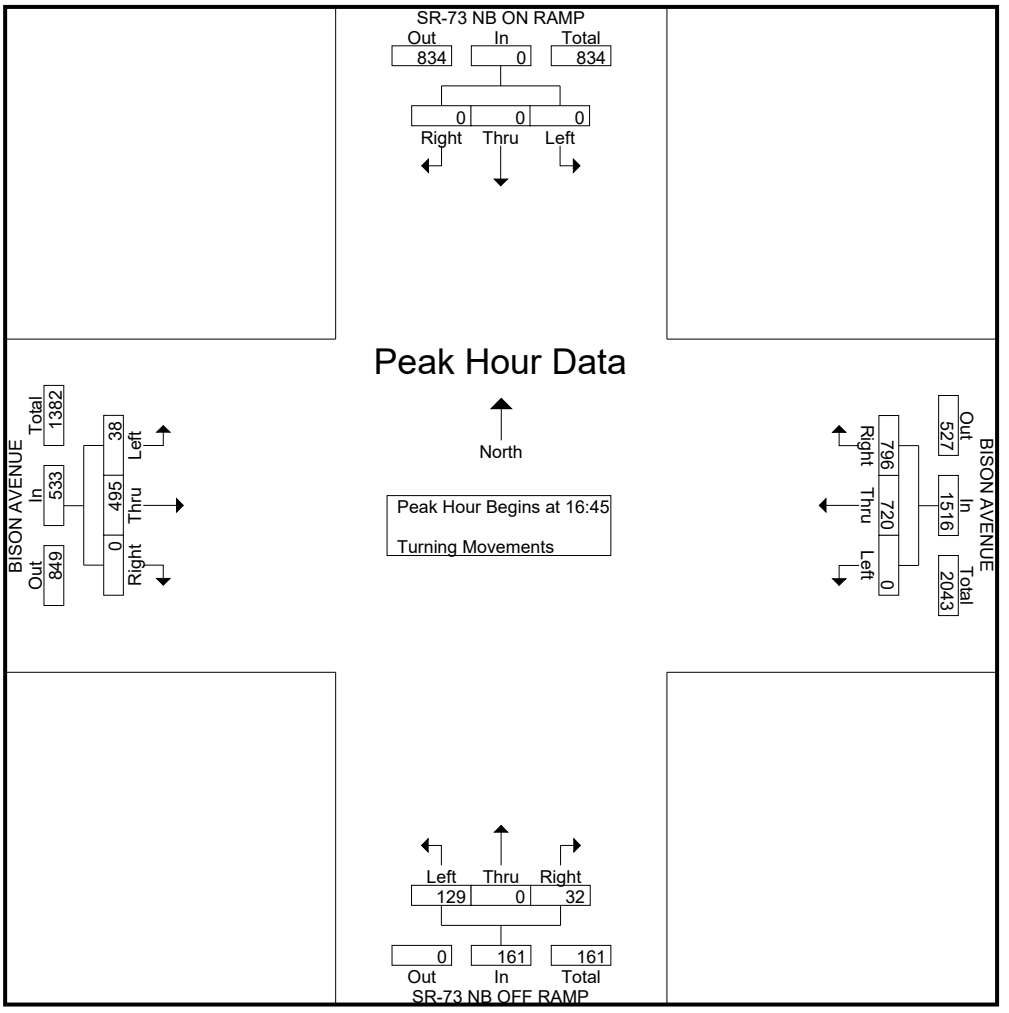


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: IRVINE
N-S Direction: SR-73 NB RAMPS
E-W Direction: BISON AVENUE

File Name : H1803019
Site Code : 00000000
Start Date : 3/8/2018
Page No : 3

	SR-73 NB ON RAMP Southbound				BISON AVENUE Westbound				SR-73 NB OFF RAMP Northbound				BISON AVENUE 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	0	0	0	0	211	114	0	325	**12**	0	25	37	0	129	10	139	501
17:00	0	0	0	0	201	**266**	0	**467**	2	0	30	32	0	105	9	114	**613**
17:15	0	0	0	0	**218**	202	0	420	7	0	36	43	0	124	**12**	136	599
17:30	0	0	0	0	166	138	0	304	11	0	**38**	**49**	0	**137**	7	**144**	497
Total Volume	0	0	0	0	796	720	0	1516	32	0	129	161	0	495	38	533	2210
% App. Total	0	0	0		52.5	47.5	0		19.9	0	80.1		0	92.9	7.1		
PHF	.000	.000	.000	.000	.913	.677	.000	.812	.667	.000	.849	.821	.000	.903	.792	.925	.901



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City of Irvine
N/S: California Avenue
E/W: Bison Avenue
Weather: Clear

File Name : 01_IRVCABIAM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 1

Groups Printed- Total Volume

	California Avenue Southbound				Bison Avenue Westbound				California Avenue Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	16	17	8	41	0	51	2	53	0	4	2	6	48	106	16	170	270
07:15 AM	15	23	13	51	0	55	2	57	2	0	0	2	66	135	19	220	330
07:30 AM	14	20	11	45	0	64	13	77	4	5	1	10	86	194	28	308	440
07:45 AM	18	22	6	46	1	83	14	98	2	8	1	11	133	201	34	368	523
Total	63	82	38	183	1	253	31	285	8	17	4	29	333	636	97	1066	1563
08:00 AM	15	49	19	83	0	68	21	89	10	6	1	17	139	188	39	366	555
08:15 AM	17	46	15	78	10	47	20	77	3	1	4	8	148	178	49	375	538
08:30 AM	17	75	18	110	3	70	16	89	8	4	4	16	121	228	54	403	618
08:45 AM	21	69	16	106	1	65	17	83	5	3	2	10	139	215	45	399	598
Total	70	239	68	377	14	250	74	338	26	14	11	51	547	809	187	1543	2309
09:00 AM	17	99	18	134	1	61	12	74	7	4	1	12	107	158	70	335	555
09:15 AM	23	93	27	143	1	57	18	76	3	6	3	12	76	209	73	358	589
09:30 AM	19	83	29	131	2	63	19	84	9	4	3	16	56	199	60	315	546
09:45 AM	24	90	24	138	2	68	18	88	6	14	3	23	59	136	50	245	494
Total	83	365	98	546	6	249	67	322	25	28	10	63	298	702	253	1253	2184
Grand Total	216	686	204	1106	21	752	172	945	59	59	25	143	1178	2147	537	3862	6056
Apprch %	19.5	62	18.4		2.2	79.6	18.2		41.3	41.3	17.5		30.5	55.6	13.9		
Total %	3.6	11.3	3.4	18.3	0.3	12.4	2.8	15.6	1	1	0.4	2.4	19.5	35.5	8.9	63.8	

	California Avenue Southbound				Bison Avenue Westbound				California Avenue Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	17	75	18	110	**3**	**70**	16	**89**	**8**	4	**4**	**16**	121	**228**	54	**403**	**618**
08:45 AM	21	69	16	106	1	65	17	83	5	3	2	10	**139**	215	45	399	598
09:00 AM	17	**99**	18	134	1	61	12	74	7	4	1	12	107	158	70	335	555
09:15 AM	**23**	93	**27**	**143**	1	57	**18**	76	3	**6**	3	12	76	209	**73**	358	589
Total Volume	78	336	79	493	6	253	63	322	23	17	10	50	443	810	242	1495	2360
% App. Total	15.8	68.2	16		1.9	78.6	19.6		46	34	20		29.6	54.2	16.2		
PHF	.848	.848	.731	.862	.500	.904	.875	.904	.719	.708	.625	.781	.797	.888	.829	.927	.955

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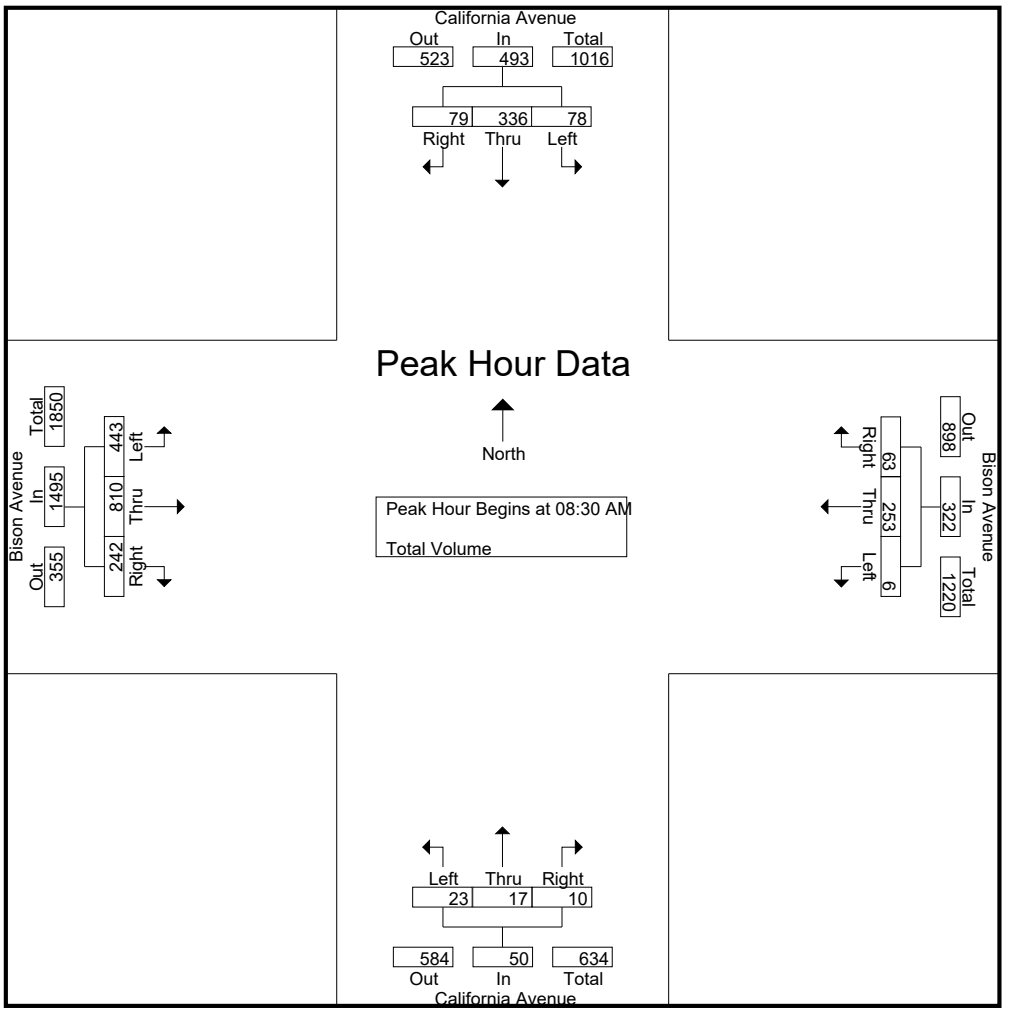
Weather: Clear

File Name : 01_IRVCABIAM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	09:00 AM				07:45 AM				09:00 AM				08:00 AM			
+0 mins.	17	**99**	18	134	1	**83**	14	**98**	7	4	1	12	139	188	39	366
+15 mins.	23	93	27	**143**	0	68	**21**	89	3	6	**3**	12	**148**	178	49	375
+30 mins.	19	83	**29**	131	**10**	47	20	77	**9**	4	3	16	121	**228**	**54**	**403**
+45 mins.	**24**	90	24	138	3	70	16	89	6	**14**	3	**23**	139	215	45	399
Total Volume	83	365	98	546	14	268	71	353	25	28	10	63	547	809	187	1543
% App. Total	15.2	66.8	17.9		4	75.9	20.1		39.7	44.4	15.9		35.5	52.4	12.1	
PHF	.865	.922	.845	.955	.350	.807	.845	.901	.694	.500	.833	.685	.924	.887	.866	.957

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City of Irvine
N/S: California Avenue
E/W: Bison Avenue
Weather: Clear

File Name : 01_IRVCABIPM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 1

Groups Printed- Total Volume

	California Avenue Southbound				Bison Avenue Westbound				California Avenue Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	5	103	115	0	168	15	183	37	39	2	78	20	75	1	96	472
04:15 PM	17	5	84	106	2	169	14	185	30	34	1	65	36	100	8	144	500
04:30 PM	15	9	116	140	2	148	13	163	37	50	2	89	20	110	5	135	527
04:45 PM	15	7	124	146	0	135	25	160	39	36	2	77	19	122	4	145	528
Total	54	26	427	507	4	620	67	691	143	159	7	309	95	407	18	520	2027
05:00 PM	25	7	212	244	0	238	18	256	50	54	2	106	15	91	5	111	717
05:15 PM	33	10	154	197	1	248	10	259	50	58	3	111	31	122	5	158	725
05:30 PM	23	3	155	181	0	152	11	163	36	48	4	88	33	114	7	154	586
05:45 PM	17	2	123	142	1	178	6	185	49	56	3	108	24	106	7	137	572
Total	98	22	644	764	2	816	45	863	185	216	12	413	103	433	24	560	2600
06:00 PM	11	1	112	124	0	204	10	214	50	55	1	106	13	92	1	106	550
06:15 PM	12	7	104	123	0	159	8	167	44	60	2	106	11	93	2	106	502
06:30 PM	10	7	102	119	1	142	9	152	45	45	3	93	8	89	7	104	468
06:45 PM	9	3	105	117	0	136	10	146	55	49	2	106	9	96	3	108	477
Total	42	18	423	483	1	641	37	679	194	209	8	411	41	370	13	424	1997
Grand Total	194	66	1494	1754	7	2077	149	2233	522	584	27	1133	239	1210	55	1504	6624
Apprch %	11.1	3.8	85.2		0.3	93	6.7		46.1	51.5	2.4		15.9	80.5	3.7		
Total %	2.9	1	22.6	26.5	0.1	31.4	2.2	33.7	7.9	8.8	0.4	17.1	3.6	18.3	0.8	22.7	

	California Avenue Southbound				Bison Avenue Westbound				California Avenue Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	25	7	**212**	**244**	0	238	**18**	256	**50**	54	2	106	15	91	5	111	717
05:15 PM	**33**	**10**	154	197	**1**	**248**	10	**259**	50	**58**	3	**111**	31	**122**	5	**158**	**725**
05:30 PM	23	3	155	181	0	152	11	163	36	48	**4**	88	**33**	114	**7**	154	586
05:45 PM	17	2	123	142	1	178	6	185	49	56	3	108	24	106	7	137	572
Total Volume	98	22	644	764	2	816	45	863	185	216	12	413	103	433	24	560	2600
% App. Total	12.8	2.9	84.3		0.2	94.6	5.2		44.8	52.3	2.9		18.4	77.3	4.3		
PHF	.742	.550	.759	.783	.500	.823	.625	.833	.925	.931	.750	.930	.780	.887	.857	.886	.897

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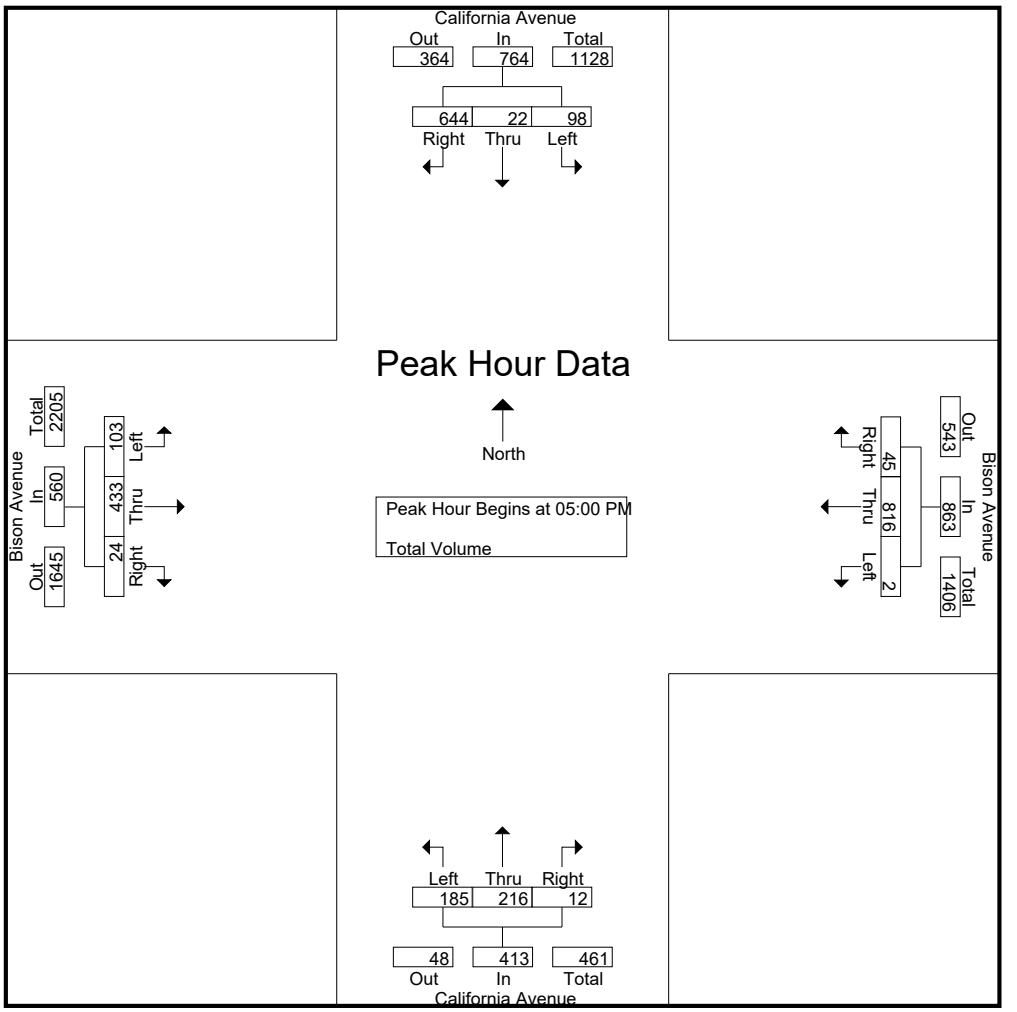
City of Irvine
N/S: California Avenue
E/W: Bison Avenue
Weather: Clear

File Name : 01_IRVCABIPM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				05:00 PM				04:45 PM			
+0 mins.	15	7	124	146	0	238	**18**	256	**50**	54	2	106	19	**122**	4	145
+15 mins.	25	7	**212**	**244**	**1**	**248**	10	**259**	50	**58**	3	**111**	15	91	5	111
+30 mins.	**33**	**10**	154	197	0	152	11	163	36	48	**4**	88	31	122	5	**158**
+45 mins.	23	3	155	181	1	178	6	185	49	56	3	108	**33**	114	**7**	154
Total Volume	96	27	645	768	2	816	45	863	185	216	12	413	98	449	21	568
% App. Total	12.5	3.5	84		0.2	94.6	5.2		44.8	52.3	2.9		17.3	79	3.7	
PHF	.727	.675	.761	.787	.500	.823	.625	.833	.925	.931	.750	.930	.742	.920	.750	.899

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City of Irvine
N/S: West Peltason Dr/East Peltason Dr
E/W: Bison Avenue
Weather: Clear

File Name : 05-IRVEWPEBIAM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 1

Groups Printed- Total Volume

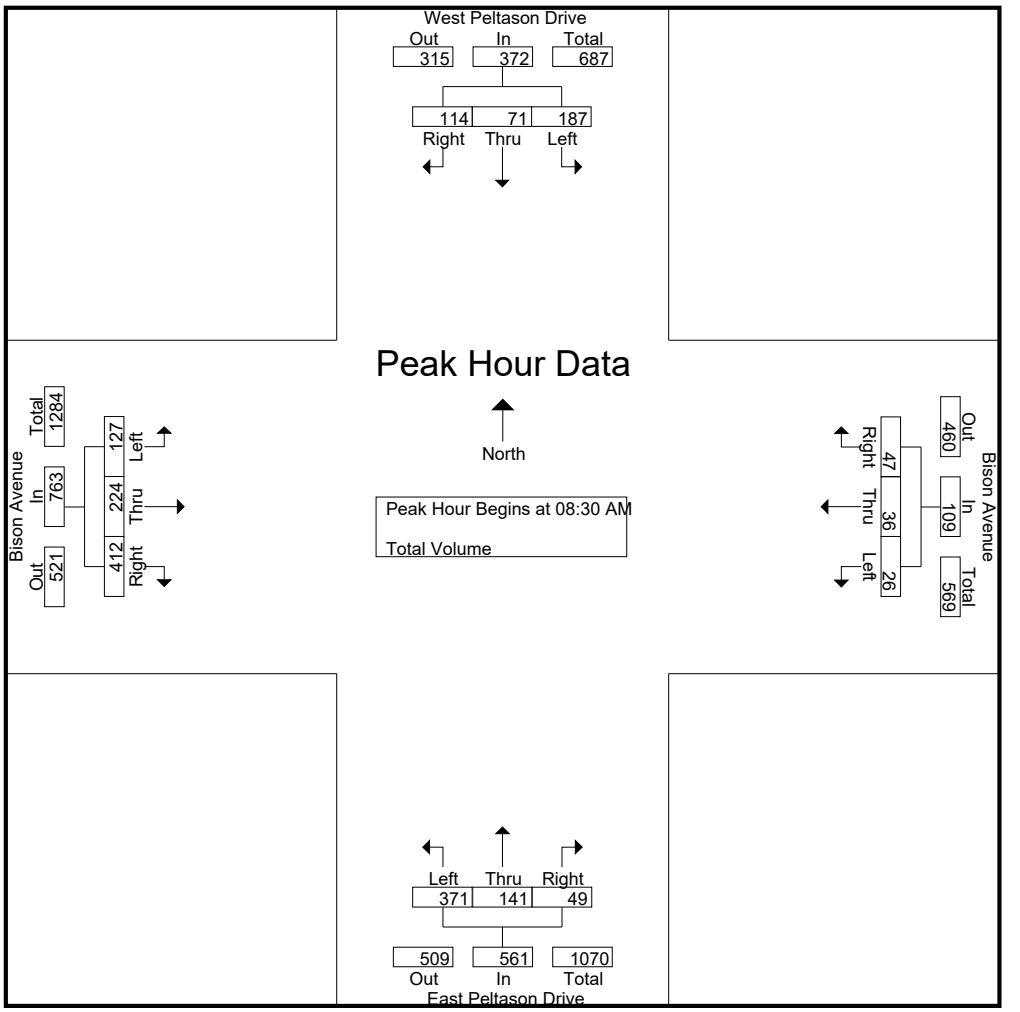
	West Peltason Drive Southbound				Bison Avenue Westbound				East Peltason Drive Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	16	5	7	28	4	5	6	15	49	5	4	58	11	27	55	93	194
07:15 AM	14	8	10	32	3	2	8	13	59	10	1	70	19	18	84	121	236
07:30 AM	17	14	19	50	6	9	6	21	73	16	5	94	34	32	101	167	332
07:45 AM	34	14	26	74	3	3	6	12	109	28	6	143	22	39	126	187	416
Total	81	41	62	184	16	19	26	61	290	59	16	365	86	116	366	568	1178
08:00 AM	18	9	24	51	2	6	4	12	87	19	8	114	41	37	102	180	357
08:15 AM	29	15	19	63	4	9	6	19	84	21	11	116	31	36	108	175	373
08:30 AM	46	14	21	81	5	11	8	24	88	33	12	133	37	70	105	212	450
08:45 AM	57	25	27	109	10	10	11	31	101	43	10	154	34	64	117	215	509
Total	150	63	91	304	21	36	29	86	360	116	41	517	143	207	432	782	1689
09:00 AM	39	19	25	83	7	8	18	33	95	35	11	141	24	49	84	157	414
09:15 AM	45	13	41	99	4	7	10	21	87	30	16	133	32	41	106	179	432
09:30 AM	41	13	22	76	5	13	13	31	56	19	13	88	29	64	92	185	380
09:45 AM	55	19	25	99	11	19	23	53	74	48	20	142	18	46	95	159	453
Total	180	64	113	357	27	47	64	138	312	132	60	504	103	200	377	680	1679
Grand Total	411	168	266	845	64	102	119	285	962	307	117	1386	332	523	1175	2030	4546
Apprch %	48.6	19.9	31.5		22.5	35.8	41.8		69.4	22.2	8.4		16.4	25.8	57.9		
Total %	9	3.7	5.9	18.6	1.4	2.2	2.6	6.3	21.2	6.8	2.6	30.5	7.3	11.5	25.8	44.7	

	West Peltason Drive Southbound				Bison Avenue Westbound				East Peltason Drive Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	46	14	21	81	5	**11**	8	24	88	33	12	133	**37**	**70**	105	212	450
08:45 AM	**57**	**25**	27	**109**	**10**	10	11	31	**101**	**43**	10	**154**	34	64	**117**	**215**	**509**
09:00 AM	39	19	25	83	7	8	**18**	**33**	95	35	11	141	24	49	84	157	414
09:15 AM	45	13	**41**	99	4	7	10	21	87	30	**16**	133	32	41	106	179	432
Total Volume	187	71	114	372	26	36	47	109	371	141	49	561	127	224	412	763	1805
% App. Total	50.3	19.1	30.6		23.9	33	43.1		66.1	25.1	8.7		16.6	29.4	54		
PHF	.820	.710	.695	.853	.650	.818	.653	.826	.918	.820	.766	.911	.858	.800	.880	.887	.887

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Irvine
N/S: West Peltason Dr/East Peltason Dr
E/W: Bison Avenue
Weather: Clear

File Name : 05-IRVEWPEBIAM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:30 AM				09:00 AM				08:30 AM				08:00 AM			
+0 mins.	46	14	21	81	7	8	18	33	88	33	12	133	**41**	37	102	180
+15 mins.	**57**	**25**	27	**109**	4	7	10	21	**101**	**43**	10	**154**	31	36	108	175
+30 mins.	39	19	25	83	5	13	13	31	95	35	11	141	37	**70**	105	212
+45 mins.	45	13	**41**	99	**11**	**19**	**23**	**53**	87	30	**16**	133	34	64	**117**	**215**
Total Volume	187	71	114	372	27	47	64	138	371	141	49	561	143	207	432	782
% App. Total	50.3	19.1	30.6		19.6	34.1	46.4		66.1	25.1	8.7		18.3	26.5	55.2	
PHF	.820	.710	.695	.853	.614	.618	.696	.651	.918	.820	.766	.911	.872	.739	.923	.909

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Irvine
N/S: West Peltason Dr/East Peltason Dr
E/W: Bison Avenue
Weather: Clear

File Name : 05-IRVEWPEBIPM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 1

Groups Printed- Total Volume

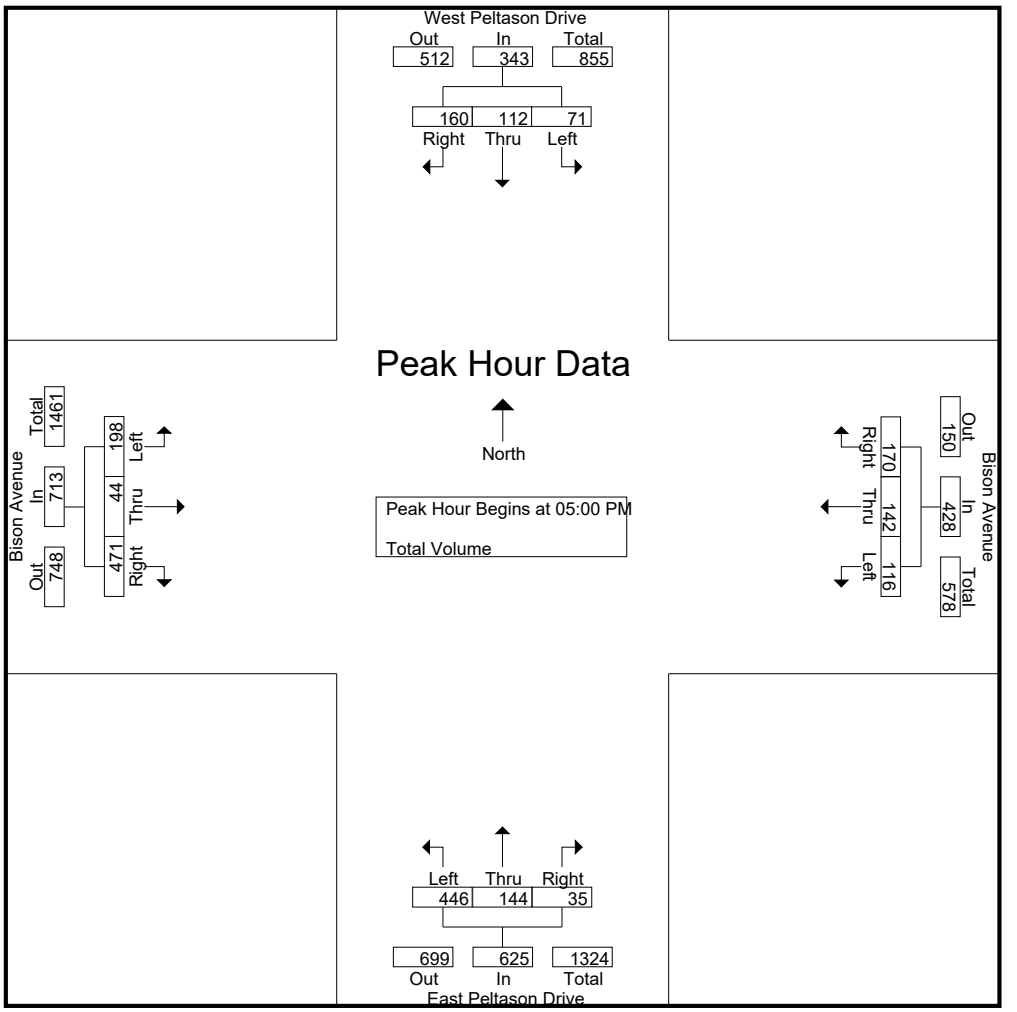
	West Peltason Drive Southbound				Bison Avenue Westbound				East Peltason Drive Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	21	36	74	20	34	51	105	97	21	3	121	21	13	64	98	398
04:15 PM	23	19	28	70	16	23	23	62	90	16	3	109	26	10	91	127	368
04:30 PM	26	21	35	82	11	29	31	71	81	23	4	108	27	20	90	137	398
04:45 PM	38	33	23	94	36	39	44	119	69	31	13	113	32	15	115	162	488
Total	104	94	122	320	83	125	149	357	337	91	23	451	106	58	360	524	1652
05:00 PM	17	35	48	100	25	60	54	139	132	52	12	196	32	13	108	153	588
05:15 PM	15	36	41	92	35	37	42	114	121	28	6	155	64	9	141	214	575
05:30 PM	20	19	36	75	21	18	31	70	88	28	6	122	45	14	123	182	449
05:45 PM	19	22	35	76	35	27	43	105	105	36	11	152	57	8	99	164	497
Total	71	112	160	343	116	142	170	428	446	144	35	625	198	44	471	713	2109
06:00 PM	13	29	51	93	38	33	44	115	108	40	9	157	28	5	93	126	491
06:15 PM	20	27	25	72	16	36	36	88	81	25	11	117	34	8	99	141	418
06:30 PM	11	23	18	52	27	35	38	100	88	32	5	125	29	6	95	130	407
06:45 PM	19	21	22	62	33	29	38	100	79	37	11	127	42	7	78	127	416
Total	63	100	116	279	114	133	156	403	356	134	36	526	133	26	365	524	1732
Grand Total	238	306	398	942	313	400	475	1188	1139	369	94	1602	437	128	1196	1761	5493
Apprch %	25.3	32.5	42.3		26.3	33.7	40		71.1	23	5.9		24.8	7.3	67.9		
Total %	4.3	5.6	7.2	17.1	5.7	7.3	8.6	21.6	20.7	6.7	1.7	29.2	8	2.3	21.8	32.1	

	West Peltason Drive Southbound				Bison Avenue Westbound				East Peltason Drive Northbound				Bison Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	17	35	**48**	**100**	25	**60**	**54**	**139**	**132**	**52**	**12**	**196**	32	13	108	153	**588**
05:15 PM	15	**36**	41	92	**35**	37	42	114	121	28	6	155	**64**	9	**141**	**214**	575
05:30 PM	**20**	19	36	75	21	18	31	70	88	28	6	122	45	**14**	123	182	449
05:45 PM	19	22	35	76	35	27	43	105	105	36	11	152	57	8	99	164	497
Total Volume	71	112	160	343	116	142	170	428	446	144	35	625	198	44	471	713	2109
% App. Total	20.7	32.7	46.6		27.1	33.2	39.7		71.4	23	5.6		27.8	6.2	66.1		
PHF	.888	.778	.833	.858	.829	.592	.787	.770	.845	.692	.729	.797	.773	.786	.835	.833	.897

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Irvine
N/S: West Peltason Dr/East Peltason Dr
E/W: Bison Avenue
Weather: Clear

File Name : 05-IRVEWPEBIPM
Site Code : 10517079
Start Date : 2/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				05:00 PM				05:00 PM			
+0 mins.	26	21	35	82	11	29	31	71	**132**	**52**	**12**	**196**	32	13	108	153
+15 mins.	**38**	33	23	94	**36**	39	44	119	121	28	6	155	**64**	9	**141**	**214**
+30 mins.	17	35	**48**	**100**	25	**60**	**54**	**139**	88	28	6	122	45	**14**	123	182
+45 mins.	15	**36**	41	92	35	37	42	114	105	36	11	152	57	8	99	164
Total Volume	96	125	147	368	107	165	171	443	446	144	35	625	198	44	471	713
% App. Total	26.1	34	39.9		24.2	37.2	38.6		71.4	23	5.6		27.8	6.2	66.1	
PHF	.632	.868	.766	.920	.743	.688	.792	.797	.845	.692	.729	.797	.773	.786	.835	.833

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
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email: counts@countsunlimited.com

City of Irvine
Bison Avenue
B/ State Route 73 Northbound Off Ramp - California Avenue
24 Hour Directional Volume Count

IRV024
Site Code: 105-17079

Start Time	16-Feb-17 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		8	199			21	259				
12:15		6	181			19	190				
12:30		3	**215**			12	218				
12:45		10	**223**	27	818	9	170	61	837	88	1655
01:00		7	**218**			14	194				
01:15		5	**206**			10	131				
01:30		6	189			5	172				
01:45		2	156	20	769	6	195	35	692	55	1461
02:00		4	130			13	257				
02:15		5	119			6	197				
02:30		1	139			7	236				
02:45		5	114	15	502	6	196	32	886	47	1388
03:00		5	136			9	182				
03:15		1	119			6	229				
03:30		6	117			2	281				
03:45		5	108	17	480	2	240	19	932	36	1412
04:00		6	100			4	285				
04:15		7	120			3	271				
04:30		18	140			3	295				
04:45		27	130	58	490	19	**375**	29	1226	87	1716
05:00		28	130			40	**539**				
05:15		33	134			22	**425**				
05:30		57	115			21	**341**				
05:45		61	140	179	519	27	299	110	1604	289	2123
06:00		58	137			25	305				
06:15		86	125			32	313				
06:30		101	125			40	288				
06:45		160	89	405	476	43	220	140	1126	545	1602
07:00		169	77			59	209				
07:15		244	69			73	165				
07:30		379	64			86	134				
07:45		419	73	1211	283	88	143	306	651	1517	934
08:00		370	87			117	205				
08:15		301	69			77	149				
08:30		**374**	47			105	138				
08:45		**375**	54	1420	257	94	101	393	593	1813	850
09:00		**415**	54			84	107				
09:15		**387**	56			116	91				
09:30		291	55			121	84				
09:45		267	39	1360	204	92	82	413	364	1773	568
10:00		194	45			103	55				
10:15		215	36			89	52				
10:30		255	24			116	58				
10:45		211	25	875	130	162	36	470	201	1345	331
11:00		141	23			**201**	33				
11:15		145	21			**169**	27				
11:30		154	25			**209**	18				
11:45		188	18	628	87	**255**	30	834	108	1462	195
Total		6215	5015	6215	5015	2842	9220	2842	9220	9057	14235
Combined Total		11230		11230		12062		12062		23292	
AM Peak	-	08:30	-	-	-	11:00	-	-	-	-	-
Vol.	-	1551	-	-	-	834	-	-	-	-	-
P.H.F.		0.925				0.818					
PM Peak	-	-	00:30	-	-	-	04:45	-	-	-	-
Vol.	-	-	862	-	-	-	1680	-	-	-	-
P.H.F.			0.966				0.779				
Percentage		55.3%	44.7%			23.6%	76.4%				
ADT/AADT		ADT 22,860		AADT 22,860							

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : BISON AVENUE
Segment : CALIFORNIA TO PELTASON DR
Client : STANTEC

Site: IRVINE
Date: 05/22/18

Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	17	57	120	517	22	50	188	573	39	107	308	1,090
12:15	7		129		11		133		18		262	
12:30	15		128		9		114		24		242	
12:45	18		140		8		138		26		278	
01:00	7	18	106	463	14	31	160	519	21	49	266	982
01:15	0		129		6		120		6		249	
01:30	5		120		5		117		10		237	
01:45	6		108		6		122		12		230	
02:00	2	9	73	384	4	11	192	623	6	20	265	1,007
02:15	1		120		1		150		2		270	
02:30	4		84		4		141		8		225	
02:45	2		107		2		140		4		247	
03:00	7	34	75	362	4	11	178	616	11	45	253	978
03:15	7		94		3		122		10		216	
03:30	8		86		2		172		10		258	
03:45	12		107		2		144		14		251	
04:00	6	67	86	385	6	25	212	668	12	92	298	1,053
04:15	11		84		5		156		16		240	
04:30	20		91		5		144		25		235	
04:45	30		124		9		156		39		280	
05:00	18	169	134	546	14	57	288	827	32	226	422	1,373
05:15	30		138		10		224		40		362	
05:30	55		142		17		161		72		303	
05:45	66		132		16		154		82		286	
06:00	46	256	108	406	18	112	184	582	64	368	292	988
06:15	66		115		29		156		95		271	
06:30	68		96		26		116		94		212	
06:45	76		87		39		126		115		213	
07:00	103	653	81	271	45	257	152	458	148	910	233	729
07:15	160		64		56		110		216		174	
07:30	170		56		84		96		254		152	
07:45	220		70		72		100		292		170	
08:00	175	819	64	232	84	366	100	329	259	1,185	164	561
08:15	206		60		93		88		299		148	
08:30	226		62		82		80		308		142	
08:45	212		46		107		61		319		107	
09:00	210	732	50	162	108	368	98	286	318	1,100	148	448
09:15	166		42		85		56		251		98	
09:30	176		43		85		58		261		101	
09:45	180		27		90		74		270		101	
10:00	132	591	31	111	126	370	60	182	258	961	91	293
10:15	141		37		73		46		214		83	
10:30	162		19		62		52		224		71	
10:45	156		24		109		24		265		48	
11:00	120	531	16	64	122	449	26	87	242	980	42	151
11:15	115		10		106		24		221		34	
11:30	148		17		106		20		254		37	
11:45	148		21		115		17		263		38	
Totals	3,936		3,903		2,107		5,750		6,043		9,653	
Split%	65.1		40.4		34.9		59.6					
Day Totals		7,839				7,857				15,696		
Day Splits		49.9				50.1						
Peak Hour	08:15		05:00		11:00		04:45		08:15		05:00	
Volume	854		546		449		829		1,244		1,373	
Factor	0.94		0.96		0.92		0.72		0.97		0.81	

* Data File : D1805054

Printed : 6/5/2018

Counts Unlimited, Inc.

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Phone: 951-268-6268
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City of Irvine
California Avenue
B/ Academy Way - Bison Avenue
24 Hour Directional Volume Count

IRV025RD
Site Code: 105-17079

Start Time	16-Feb-17 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		2	86			1	73				
12:15		1	81			1	64				
12:30		1	69			2	79				
12:45		1	87	5	323	0	**100**	4	316	9	639
01:00		1	74			2	**82**				
01:15		4	58			0	**100**				
01:30		1	53			3	**83**				
01:45		1	47	7	232	1	72	6	337	13	569
02:00		1	52			0	66				
02:15		3	49			1	48				
02:30		0	54			1	44				
02:45		3	53	7	208	0	45	2	203	9	411
03:00		0	61			0	58				
03:15		0	48			2	41				
03:30		0	55			0	47				
03:45		0	65	0	229	2	37	4	183	4	412
04:00		1	93			1	56				
04:15		0	83			0	51				
04:30		0	123			3	57				
04:45		0	117	1	416	4	70	8	234	9	650
05:00		0	**155**			5	96				
05:15		1	**141**			5	93				
05:30		4	**126**			10	67				
05:45		3	**119**	8	541	18	64	38	320	46	861
06:00		4	151			25	45				
06:15		8	134			18	47				
06:30		8	109			31	33				
06:45		18	88	38	482	52	24	126	149	164	631
07:00		23	84			68	15				
07:15		21	62			73	9				
07:30		41	38			86	9				
07:45		45	22	130	206	115	11	342	44	472	250
08:00		55	24			133	15				
08:15		68	19			146	7				
08:30		74	21			161	7				
08:45		59	18	256	82	**197**	8	637	37	893	119
09:00		50	12			**210**	4				
09:15		38	16			**174**	2				
09:30		39	11			**176**	9				
09:45		47	13	174	52	181	7	741	22	915	74
10:00		20	7			130	2				
10:15		20	10			110	2				
10:30		27	10			86	5				
10:45		35	3	102	30	90	2	416	11	518	41
11:00		**45**	4			57	3				
11:15		**49**	3			74	1				
11:30		**82**	3			64	1				
11:45		**114**	4	290	14	87	2	282	7	572	21
Total		1018	2815	1018	2815	2606	1863	2606	1863	3624	4678
Combined Total		3833		3833		4469		4469		8302	
AM Peak	-	11:00	-	-	-	08:45	-	-	-	-	-
Vol.	-	290	-	-	-	757	-	-	-	-	-
P.H.F.		0.636				0.901					
PM Peak	-	-	05:00	-	-	-	00:45	-	-	-	-
Vol.	-	-	541	-	-	-	365	-	-	-	-
P.H.F.			0.873				0.913				
Percentage		26.6%	73.4%			58.3%	41.7%				
ADT/AADT		ADT 8,302		AADT 8,302							

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : E. PELTASON DRIVE
Site: IRVINE
Segment : BISON AVE TO ANTEATER DR
Date: 05/22/18
Client : STANTEC
Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	21	70	122	473	12	43	154	537	33	113	276	1,010
12:15	12		121		10		103		22		224	
12:30	16		96		9		114		25		210	
12:45	21		134		12		166		33		300	
01:00	8	26	100	399	7	23	153	529	15	49	253	928
01:15	4		107		5		112		9		219	
01:30	5		98		5		102		10		200	
01:45	9		94		6		162		15		256	
02:00	3	11	91	367	4	10	176	544	7	21	267	911
02:15	1		96		1		124		2		220	
02:30	5		84		2		114		7		198	
02:45	2		96		3		130		5		226	
03:00	4	9	112	408	2	9	176	554	6	18	288	962
03:15	0		96		1		110		1		206	
03:30	1		98		2		154		3		252	
03:45	4		102		4		114		8		216	
04:00	5	22	119	489	5	23	141	537	10	45	260	1,026
04:15	4		87		2		122		6		209	
04:30	5		101		8		134		13		235	
04:45	8		182		8		140		16		322	
05:00	7	73	190	702	7	74	182	592	14	147	372	1,294
05:15	21		160		16		138		37		298	
05:30	15		184		27		146		42		330	
05:45	30		168		24		126		54		294	
06:00	38	185	152	530	19	136	124	475	57	321	276	1,005
06:15	50		141		32		120		82		261	
06:30	40		113		42		112		82		225	
06:45	57		124		43		119		100		243	
07:00	64	406	90	320	54	377	94	367	118	783	184	687
07:15	89		86		91		103		180		189	
07:30	122		72		99		82		221		154	
07:45	131		72		133		88		264		160	
08:00	128	498	72	274	124	605	80	307	252	1,103	152	581
08:15	108		68		138		80		246		148	
08:30	124		71		140		93		264		164	
08:45	138		63		203		54		341		117	
09:00	128	491	46	212	120	532	60	247	248	1,023	106	459
09:15	123		53		135		50		258		103	
09:30	122		61		140		68		262		129	
09:45	118		52		137		69		255		121	
10:00	104	464	45	160	120	473	49	138	224	937	94	298
10:15	100		48		114		31		214		79	
10:30	112		35		110		34		222		69	
10:45	148		32		129		24		277		56	
11:00	102	429	29	95	106	497	32	86	208	926	61	181
11:15	88		19		107		22		195		41	
11:30	114		21		124		18		238		39	
11:45	125		26		160		14		285		40	
Totals	2,684		4,429		2,802		4,913		5,486		9,342	
Split%	48.9		47.4		51.1		52.6					
Day Totals		7,113				7,715				14,828		
Day Splits		48.0				52.0						
Peak Hour	08:30		04:45		08:00		04:45		08:30		04:45	
Volume	513		716		605		606		1,111		1,322	
Factor	0.93		0.94		0.75		0.83		0.81		0.89	

Data File : D1805056
Printed : 5/31/2018

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : W. PELTASON DRIVE
Site: IRVINE
Segment : BISON AVE TO ACADEMY WAY
Date: 05/22/18
Client : STANTEC
Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	6	18	82	298	10	31	74	307	16	49	156	605
12:15	6		76		10		69		16		145	
12:30	1		56		4		86		5		142	
12:45	5		84		7		78		12		162	
01:00	3	10	66	290	2	8	55	267	5	18	121	557
01:15	1		58		2		62		3		120	
01:30	2		76		1		68		3		144	
01:45	4		90		3		82		7		172	
02:00	1	6	87	280	1	8	60	226	2	14	147	506
02:15	1		61		1		49		2		110	
02:30	1		54		1		50		2		104	
02:45	3		78		5		67		8		145	
03:00	0	3	88	271	2	4	58	250	2	7	146	521
03:15	0		60		0		56		0		116	
03:30	0		56		1		66		1		122	
03:45	3		67		1		70		4		137	
04:00	2	7	80	335	2	11	63	275	4	18	143	610
04:15	2		69		1		48		3		117	
04:30	2		99		2		80		4		179	
04:45	1		87		6		84		7		171	
05:00	5	37	96	347	2	31	82	292	7	68	178	639
05:15	8		88		5		67		13		155	
05:30	12		75		7		70		19		145	
05:45	12		88		17		73		29		161	
06:00	5	48	81	283	14	57	46	230	19	105	127	513
06:15	14		70		9		54		23		124	
06:30	14		54		16		59		30		113	
06:45	15		78		18		71		33		149	
07:00	17	149	59	207	22	168	30	134	39	317	89	341
07:15	24		58		28		34		52		92	
07:30	51		44		48		32		99		76	
07:45	57		46		70		38		127		84	
08:00	54	223	46	167	61	278	33	123	115	501	79	290
08:15	51		41		58		33		109		74	
08:30	48		48		74		32		122		80	
08:45	70		32		85		25		155		57	
09:00	64	239	18	122	76	252	28	100	140	491	46	222
09:15	56		24		56		16		112		40	
09:30	42		49		38		34		80		83	
09:45	77		31		82		22		159		53	
10:00	66	234	18	67	54	258	28	77	120	492	46	144
10:15	55		21		66		15		121		36	
10:30	49		14		60		18		109		32	
10:45	64		14		78		16		142		30	
11:00	72	293	25	54	56	228	13	52	128	521	38	106
11:15	55		14		42		14		97		28	
11:30	75		6		52		10		127		16	
11:45	91		9		78		15		169		24	
Totals	1,267		2,721		1,334		2,333		2,601		5,054	
Split%	48.7		53.8		51.3		46.2					
Day Totals		3,988				3,667				7,655		
Day Splits		52.1				47.9						
Peak Hour	11:00		04:30		08:15		04:30		08:30		04:30	
Volume	293		370		293		313		529		683	
Factor	0.80		0.93		0.86		0.93		0.85		0.95	

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Appendix B ICU CALCULATION WORKSHEETS

INTERSECTION CAPACITY UTILIZATION

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1,700 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval for City of Irvine intersections, and a capacity of 1,600 VPH is assumed for the City of Newport Beach intersection. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both through and right-turn traffic (i.e., with a width of 19 feet from curb to outside of through-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

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

Example for Northbound Right

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

If NBT is critical move, then:

RTOG = V/C (NBT)

Otherwise,

RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

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

If WBL is critical move, then:

RTOR = V/C (WBL)

Otherwise,

RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Right-Turn Overlap Adjustment

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

RTOG = RTOG + V/C (WBL)

RTOR = RTOR - V/C (WBL)

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

RTC = RTOG + factor x RTOR

Where factor = RTOR saturation flow factor (75%)

Right-turn adjustment is then as follows:

Additional ICU = V/C (NBR) - RTC

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

Shared Lane V/C Methodology

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

Example for Shared Left/Through Lane

1. Average Lane Volume (ALV)

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

2. ALV for Each Approach

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

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

3. Lane Dedication is Warranted

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

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

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

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

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

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

4. Lane Dedication is not Warranted

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

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

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

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

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

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

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

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

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

These same steps are carried out for shared through/right lanes. If full dedication of a shared through/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the through/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/through and through/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

1. SR-73 NB Ramps & Bison Avenue

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		168	{.09}*	129	.04*
NBT	0	5100	0	.09	0	
NBR	1.5		292		32	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	56	.03	38	.02*
EBT	2	3400	1134	.33*	495	.15
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	130	.04	720	.21*
WBR	1	1700	225	.13	796	.47
Right Turn Adjustment					WBR	.23*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.47**		**.55**

Existing + Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		168	{.09}*	129	.04*
NBT	0	5100	0	.09	0	
NBR	1.5		298		35	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	56	.03	38	.02*
EBT	2	3400	1156	.34*	505	.15
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	134	.04	739	.22*
WBR	1	1700	227	.13	805	.47
Right Turn Adjustment					WBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.48**		**.55**

LRDP Build-out without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		160	.09*	160	.05*
NBT	0	5100	0		0	
NBR	1.5		320	.09	60	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	50	.03	40	.02*
EBT	2	3400	1650	.49*	820	.24
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	270	.08	970	.29*
WBR	1	1700	260	.15	1010	.59
Right Turn Adjustment					WBR	.26*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.63**		**.67**

LRDP Build-out with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		160	.09*	160	.05*
NBT	0	5100	0		0	
NBR	1.5		326	.10	63	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	50	.03	40	.02*
EBT	2	3400	1672	.49*	830	.24
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	274	.08	989	.29*
WBR	1	1700	262	.15	1019	.60
Right Turn Adjustment			NBR	.01*	WBR	.27*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.64**		**.68**

2. California Avenue & Bison Avenue

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	23	.01*	185	.11*
NBT	2	3400	17	.01	216	.06
NBR	d	1700	10	.01	12	.01
SBL	1	1700	78	.05	98	.06
SBT	1.5	5100	336	.10*	22	.01*
SBR	1.5		79		644	.19
EBL	1	1700	443	.26*	103	.06*
EBT	2	3400	810	.24	433	.13
EBR	1	1700	242	.14	24	.01
WBL	1	1700	6	.00	2	.00
WBT	2	3400	253	.07*	816	.24*
WBR	d	1700	63	.04	45	.03
Right Turn Adjustment					SBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.49**		**.60**

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	23	.01*	185	.11*
NBT	2	3400	17	.01	216	.06
NBR	d	1700	10	.01	12	.01
SBL	1	1700	78	.05	98	.06
SBT	1.5	5100	336	.10*	22	.01*
SBR	1.5		82		656	.19
EBL	1	1700	455	.27*	109	.06*
EBT	2	3400	826	.24	440	.13
EBR	1	1700	242	.14	24	.01
WBL	1	1700	6	.00	2	.00
WBT	2	3400	256	.09*	832	.26*
WBR	0	0	63		45	
Right Turn Adjustment					SBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.62**

LRDP Build-out without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	360	.21*
NBT	2	3400	50	.01	280	.08
NBR	d	1700	10	.01	20	.01
SBL	1	1700	90	.05	140	.08
SBT	1.5	5100	410	.12*	50	.03*
SBR	1.5		140		1000	.29
EBL	1	1700	870	.51*	150	.09*
EBT	2	3400	850	.25	690	.20
EBR	1	1700	420	.25	100	.06
WBL	1	1700	10	.01	10	.01
WBT	2	3400	350	.10*	770	.23*
WBR	d	1700	170	.10	80	.05
Right Turn Adjustment					SBR	.19*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.83**		**.80**

LRDP Build-out with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	360	.21*
NBT	2	3400	50	.01	280	.08
NBR	d	1700	10	.01	20	.01
SBL	1	1700	90	.05	140	.08
SBT	1.5	5100	410	.12*	50	.03*
SBR	1.5		143		1012	.30
EBL	1	1700	882	.52*	156	.09*
EBT	2	3400	866	.25	697	.21
EBR	1	1700	420	.25	100	.06
WBL	1	1700	10	.01	10	.01
WBT	2	3400	353	.15*	786	.25*
WBR	0	0	170		80	
Right Turn Adjustment					SBR	.20*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.89**		**.83**

3. West Peltason Drive/East Peltason Drive & Bison

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	371	.22*	446	.26*
NBT	1	1700	141	.08	144	.08
NBR	d	1700	49	.03	35	.02
SBL	1	1700	187	.11	71	.04
SBT	1	1700	71	.04*	112	.07*
SBR	1	1700	114	.07	160	.09
EBL	0	0	127		198	{.12}*
EBT	1	1700	224	.21*	44	.14
EBR	1	1700	412	.24	471	.28
WBL	0	0	26	{.02}*	116	
WBT	1	1700	36	.04	142	.15*
WBR	1	1700	47	.03	170	.10
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION **.54** **.65**

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	380	.22*	450	.26*
NBT	1	1700	141	.08	144	.08
NBR	d	1700	49	.03	35	.02
SBL	1	1700	187	.11	71	.04
SBT	1	1700	71	.04*	112	.07*
SBR	1	1700	123	.07	164	.10
EBL	0	0	129		207	{.12}*
EBT	1	1700	225	.21*	47	.15
EBR	1	1700	414	.24	480	.28
WBL	0	0	26	{.02}*	116	
WBT	1	1700	39	.04	143	.15*
WBR	1	1700	47	.03	170	.10
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION **.54** **.65**

LRDP Build-out without Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	420	.25*	460	.27*
NBT	1	1700	110	.06	150	.09
NBR	d	1700	50	.03	160	.09
SBL	1	1700	170	.10	260	.15
SBT	1	1700	90	.05*	170	.10*
SBR	1	1700	150	.09	170	.10
EBL	0	0	130		220	{.13}*
EBT	1	1700	290	.25*	110	.19
EBR	1	1700	480	.28	670	.39
WBL	0	0	230	{.14}*	110	
WBT	1	1700	130	.21	150	.15*
WBR	1	1700	180	.11	180	.11
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.74** **.70**

LRDP Build-out with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	429	.25*	464	.27*
NBT	1	1700	110	.06	150	.09
NBR	d	1700	50	.03	160	.09
SBL	1	1700	170	.10	260	.15
SBT	1	1700	90	.05*	170	.10*
SBR	1	1700	159	.09	174	.10
EBL	0	0	132		229	{.13}*
EBT	1	1700	291	.25*	113	.20
EBR	1	1700	482	.28	679	.40
WBL	0	0	230	{.14}*	110	
WBT	1	1700	133	.21	151	.15*
WBR	1	1700	180	.11	180	.11
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for EBR

TOTAL CAPACITY UTILIZATION **.74** **.70**

Appendix C UCI MAIN CAMPUS TRAFFIC MODEL - TRIP RATE SUMMARY

Table A-1

UCI MAIN CAMPUS TRAFFIC MODEL LRDP UPDATE 2007 TRIP RATE SUMMARY

	USE	UNIT	RATE A	RATE B	RATE A	RATE B
1.	Student	PER	0.50	1.90	Prop. commuter students	Person trips/comm.
2.	Faculty	PER	0.85	1.90	Proportion of commuters	Person trips/comm.
3.	UCI Staff	PER	0.84	1.90	Proportion of commuters	Person trips/comm.
4.	General Parking	SPC	1.80	0.00	Space utilization	-
5.	Resident Parking	SPC	0.00	0.00	-	-
6.	Pref/Rsvd Parking	SPC	1.50	0.00	Space utilization	-
7.	Meter Parking	SPC	8.00	0.00	Space utilization	-
8.	Other/Service Parking	SPC	0.00	0.00	-	-
9.	Support	TSF	10.00	2.00	Ext. veh. trips	Int. Ac. V. trips
10.	Single Undergrad Housing	BED	1.60	0.10	Non-Ac. veh. trips	Int. Ac. V. trips
11.	Married/Graduate Housing	BED	1.90	0.10	Non-Ac. veh. trips	Int. Ac. V. trips
12.	Faculty/Staff Studio Apt	DU	4.70	0.30	Non-Ac. veh. trips	Int. Ac. V. trips
13.	Faculty/Staff 1-Bdrm Apt	DU	4.70	0.30	Non-Ac. veh. trips	Int. Ac. V. trips
14.	Faculty/Staff 2-Bdrm Apt	DU	7.00	0.50	Non-Ac. veh. trips	Int. Ac. V. trips
15.	Faculty/Staff 3-Bdrm Apt	DU	8.40	0.60	Non-Ac. veh. trips	Int. Ac. V. trips
16.	Faculty/Staff (SFD)	DU	9.40	0.60	Non-Ac. veh. trips	Int. Ac. V. trips
17.	Faculty/Staff (SFA)	DU	8.00	0.50	Non-Ac. veh. trips	Int. Ac. V. trips
18.	UCI R&D	TSF	8.50	1.50	Ext. veh. trips	Int. veh. trips
19.	Medical Clinic	TSF	33.00	3.00	Ext. veh. trips	Int. veh. trips
20.	Fitness Center	TSF	15.00	5.00	Ext. veh. trips	Int. veh. trips
21.	Elementary School	STU	0.50	0.20	Ext. veh. trips	Int. veh. trips
22.	TIC R&D	TSF	10.00	0.50	Ext. veh. trips	Int. veh. trips
23.	Multi-Family Residential	DU	8.00	0.50	Non-Ac. veh. trips	Int. Ac. V. trips
24.	Barclay Theater	SG	20.00	0.00	Ext. veh. trips	-
25.	Bren Events Center	SG	10.00	2.00	Ext. veh. trips	Int. veh. trips
26.	Evening Classes	STU	1.00	2.00	Pop. commuter students	Person trips/comm.

LU data code specifications -

ACADEMIC	1 26	Students
	2 3	Faculty/Staff
PARKING	4 7	Students
	6	Faculty/Staff
RESIDENTIAL	10 11	Students
	12 13 14 15 16 17 23	Faculty/Staff
SUPPORT/R&D	9 18 19 21 22 24	Support/R&D
	20 25	Commercial

Zone Specifications -

Zones 1	to 26	ACADEMIC
Zones 27	to 48	PARKING
Zones 49	to 66	RESIDENTIAL
Zones 67	to 88	SUPPORT/R&D
Zones 89	to 106	CORDONS

1.200	Student vehicle occupancy
1.100	Faculty/Staff vehicle occupancy
.200	Staff use of general parking lot spaces

APPENDIX E

CEQA Notices

UCI Division of Finance and Administration

Physical & Environmental Planning
4199 Campus Drive, Suite 380
Irvine, CA 92697-2325
(949)824-8692

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Project Title: Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall
Location: University of California, Irvine
Lead Agency: University of California
County: Orange

In accordance with the California Environmental Quality Act (CEQA) Guidelines and University of California Guidelines for Implementation of CEQA, an Initial Study for the Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall project (proposed project) was prepared by the University of California, Irvine (UCI), and was determined that a Mitigated Negative Declaration (MND) is the appropriate level of analysis.

The proposed project would demolish existing surface parking, a vehicle loop, ornamental landscaping, and pedestrian walkways to construct the approximately 95,000-gross-square-foot Sue and Bill Gross Nursing and Health Sciences Hall and the approximately 125,000 GSF Susan and Henry Samueli College of Health Sciences on an 11.4-acre site in the Health Sciences Quad. Existing on-site surface parking to be demolished as part of the project would be replaced at a one-to-one ratio. A driveway and a left-hand turn pocket, pending permit approval, would be installed at California Avenue for vehicular access to the site.

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 on the UCI website 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 Physical and Environmental Planning. Comments will be received May 16, 2019 through June 15, 2019, and can be emailed to hashimol@uci.edu or mailed to:

Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

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

Sincerely,

Richard Demerjian
Assistant Vice Chancellor
Physical & Environmental Planning

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: Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall

Lead Agency: University of California, Irvine — Contact Person: Lindsey Hashimoto

Mailing Address: 4199 Campus Drive, Suite 380, Irvine, CA 92697 — Phone: (949) 824-8692

City: Irvine — Zip: 92697 — County: Orange

Project Location: County: Orange — City/Nearest Community: Irvine

Cross Streets: California Avenue and Bison Avenue — Zip Code: 92697

Longitude/Latitude (degrees, minutes and seconds): 33 ° 38 ′ 26.9 ″ N / -117 ° 51 ′ 10.8 ″ W Total Acres: 11.4

Assessor's Parcel No.: — Section: — Twp.: — Range: — Base:

Within 2 Miles: State Hwy #: SR-73 and I-405 — Waterways: San Diego Creek

Airports: — Railways: — Schools: IUSD (4); Tarbut V'Torah

Document Type:

CEQA: ☐ NOP ☐ Draft EIR — NEPA: ☐ NOI — Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:
☒ Mit Neg Dec Other: ☐ FONSI

Local Action Type:

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

Development Type:

☐ Residential: Units — Acres
☐ Office: Sq.ft. — Acres — Employees — ☐ Transportation: Type
☐ Commercial: Sq.ft. — Acres — Employees — ☐ Mining: Mineral
☐ Industrial: Sq.ft. — Acres — Employees — ☐ Power: Type — MW
☒ Educational: office, research, instructional, clinical — ☐ Waste Treatment: Type — MGD
☐ Recreational: — ☐ Hazardous Waste: Type
☐ Water Facilities: Type — MGD — ☐ Other:

Project Issues Discussed in Document:

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

Present Land Use/Zoning/General Plan Designation:

UC Irvine is not subject to local zoning. The 2007 UCI LRDP land use designation allows research/clinical/instructional/office.

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

The proposed project would demolish existing surface parking, a vehicle loop, ornamental landscaping, and pedestrian walkways to construct the approximately 95,000-gross-square-foot Sue and Bill Gross Nursing and Health Sciences Hall and the approximately 125,000 GSF Susan and Henry Samueli College of Health Sciences on an 11.4-acre site in the UCI Health Sciences Quad. Existing on-site surface parking to be demolished as part of the project would be replaced at a one-to-one ratio. A driveway and a left-hand turn pocket, pending permit approval, would be installed at California Avenue for vehicular access to the site.

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	X	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: _____
____	Native American Heritage Commission		

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

Starting Date May 16, 2019 Ending Date June 15, 2019

Lead Agency (Complete if applicable):

Consulting Firm: _____
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: University of California, Irvine
Address: 4199 Campus Drive, Suite 380
City/State/Zip: Irvine, CA 92697-2325
Phone: (949) 824-8692

Signature of Lead Agency Representative: _____ **Date:** 5/14/19

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 16, 2019

"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

Dated: May 16, 2019

Signature: Sandra Campos

The Orange County Register
2190 S. Towne Centre Place
Anaheim, CA 92806
(714) 796-2209

PROOF OF PUBLICATION

NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION

SUSAN AND HENRY SAMUELI COLLEGE OF HEALTH SCIENCES & SUE AND BILL GROSS NURSING AND HEALTH SCIENCES HALL

UNIVERSITY OF CALIFORNIA, IRVINE

In accordance with the California Environmental Quality Act (CEQA) Guidelines and University of California Guidelines for implementation of CEQA, an Initial Study for the Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall project (proposed project) was prepared by the University of California, Irvine (UCI), and was determined that a Mitigated Negative Declaration (MND) is the appropriate level of analysis.

The proposed project would demolish existing surface parking, a vehicle loop, ornamental landscaping, and pedestrian walkways to construct the approximately 95,000-gross-square-foot Sue and Bill Gross Nursing and Health Sciences Hall and the approximately 125,000 GSF Susan and Henry Samueli College of Health Sciences on an 11.4-acre site in the UCI Health Sciences Quad. Existing on-site surface parking to be demolished as part of the project would be replaced at a one-to-one ratio. A driveway and a left-hand turn pocket, pending permit approval, would be installed at California Avenue for vehicular access to the site.

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 on the UCI website 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 Physical and Environmental Planning. Comments will be received May 16, 2019 through June 15, 2019, and can be emailed to Lindsey Hashimoto, Senior Planner, at hashimol@uci.edu or mailed to University of California, Irvine, Office of Physical and Environmental Planning, 4199 Campus Drive, Suite 380, Irvine, CA 92697. If you have any questions regarding the project, please call (949) 824-8692.

Published: Orange County Register May 16, 2019 11271253

APPENDIX F

Response to Comments

Susan and Henry Samueli College of Health Sciences &
Sue and Bill Gross Nursing and Health Sciences Hall

Draft Initial Study/Mitigated Negative Declaration
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, 2019 through June 15, 2019. 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 15, 2019, 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
Irvine Ranch Water District	June 7, 2019
Orange County Transportation Authority	June 11, 2019
Transportation Corridor Agencies	June 13, 2019
California Department of Fish and Wildlife	June 14, 2019
City of Irvine	June 14, 2019
State Clearinghouse	June 18, 2019

SUSAN AND HENRY SAMUELI COLLEGE OF HEALTH SCIENCES &
SUE AND BILL GROSS NURSING AND HEALTH SCIENCES HALL
IS/MND MAILING LIST

Orange County Public Library University Park Branch 4512 Sandburg Way Irvine, CA 92612	California Department of Transportation District 12 1750 E 4th Street, #100 Santa Ana, CA 92705
City of Irvine Community Development Dept. P.O. Box 19575 Irvine, CA 92623-9575	Orange County Fire Authority P.O. Box 57115 Irvine, CA 92619-7115
County of Orange Planning & Development Services 300 N. Flower Street	Irvine Ranch Water District 15600 Sand Canyon Ave. Irvine, CA 92618
Orange County Transportation Authority 550 South Main Street Orange, CA 92868	Public Utilities Commission 320 W. 4th Street, Suite 500 Los Angeles, CA 90013
California Department of Fish & Wildlife 3883 Ruffin Road San Diego, CA 92123	Transportation Corridor Agencies 125 Pacifica Irvine, CA 92618-3304
U.S. Fish & Wildlife Service Division of Ecological Services 2177 Salk Avenue, Suite 250 Carlsbad, CA 92008	Irvine Unified School District 5050 Barranca Parkway Irvine, CA 92604-4698
Regional Water Quality Control Board - Santa Ana Region 3737 Main Street, Suite 500 Riverside, CA 92501-3348	Metropolitan Water District P.O. Box 54153 Los Angeles, CA 90054
U.S. Army Corps of Engineers Los Angeles District 911 Wilshire Boulevard Los Angeles, CA 90017	Southern California Association of Governments 818 West 7th Street, 12th Floor Los Angeles, CA 90017
CA Department of Toxic Substances Control 5796 Corporate Avenue Cypress, California 90630	Department of Water Resources 1416 9th Street Sacramento, CA 95814
South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765-4182	

Irvine Ranch
WATER DISTRICT

June 7, 2019

Ms. Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Re: NOI/Draft MND for College of Health Services and Nursing Building

Dear Ms. Hashimoto:

Irvine Ranch Water District (IRWD) has received the University of California, Irvine's (UCI) Notice of Intent (NOI) for the Susan and Henry Samueli College of Health Services & Sue and Bill Gross Nursing and Health Sciences Hall Draft Mitigated Negative Declaration (MND). IRWD has reviewed the NOI/Draft MND and offers the following comments.

The draft MND indicates that the proposed project would receive water services from IRWD. Per the draft MND, potable water would be connected through an existing 12-inch potable waterline located in Bison Avenue; recycled water would be connected through an existing 12-inch recycled water pipeline in California Avenue; and sanitary sewer would be connected through an existing 12-inch sewer pipeline also located in California Avenue. Coordination with IRWD will be required for these facilities remain in service. For coordination questions, please contact Ms. Kelly Lew, Principal Engineer at (949) 453-5586.

IRWD appreciates the opportunity to review and comment on the NOI/Draft MND. If you have any questions or if you require additional information, please contact me at (949) 453-5325 or Jo Ann Corey, Environmental Compliance Specialist at (949) 453-5326.

Sincerely,

Fiona M. Sanchez
Director of Water Resources

cc: Kelly Lew, IRWD
Jo Ann Corey, IRWD

Responses to the Irvine Water District

Comment 1: UCI staff met with IRWD staff on June 13, 2019 to discuss water services coordination to the project site. As discussed during the meeting, IRWD's Sub-Area Master Plan will be updated to include projected future development within the Health Sciences Quad of the West Campus.

June 11, 2019

Ms. Lindsey Hashimoto
Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 94697

Subject: **Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall Draft Initial Study and Mitigated Negative Declaration**

Dear Ms. Hashimoto:

Thank you for providing the Orange County Transportation Authority (OCTA) with the Draft Initial Study and Mitigated Negative Declaration for the Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall (Project). The following comments are provided for your consideration:

Section 4.15, Transportation, Conflict with Congestion Management Program, states "the Orange County Congestion Management Plan highways." Please revise to "Orange County Congestion Management Program highways."

Appendix D, Section 2.1 Existing Roadway System, states "Bison Avenue between SR 73 and California Avenue is designated as a primary arterial on the City of Irvine and the Orange County Master Plan of Arterial Highways (MPAH)." This segment of Bison Avenue is not designated on the Orange County MPAH. Please revise the statement.

Appendix D, Section 2.1 Existing Roadway System, states "California Avenue is designated as a primary arterial and runs from University Drive to Health Sciences Road." California Avenue is not a designated facility under the Orange County MPAH. Please revise to clarify California Avenue is designated as a primary arterial by the City of Irvine.

Throughout the development of this project, we encourage communication with OCTA on any matters discussed herein. If you have any questions or comments, please contact me at (714) 560-5907 or at dphu@octa.net.

Sincerely,

Dan Phu
Manager, Environmental Programs

Responses to the Orange County Transportation Authority

Comment 1: Text has been updated on page 4.15-5 of the Final IS/MND from "Orange County Congestion Management Plan" to "Orange County Congestion Management Program."

Comment 2: Page 2.1 of Appendix D, Traffic Study, has removed language stating that Bison Avenue between SR-73 and California Avenue is designated as a primary arterial by the Orange County Master Plan of Arterial Highways.

Comment 3: Page 2.1 of Appendix D, Traffic Study, has added language to clarify that California Avenue is designated as a primary arterial by the City of Irvine.

San Joaquin Hills
Transportation
Corridor Agency

Chair:
Fred Minagar
Laguna Niguel

Transportation Corridor Agencies™

Foothill/Eastern
Transportation
Corridor Agency

Chair:
Christina Shea
Irvine

Via email: hashimol@uci.edu

June 13, 2019

Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Subject: Notice of Inter to Adopt a Mitigated Negative Declaration for the Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall

Dear Ms. Hashimoto,

Thank you for sending the Notice of Intent to Adopt a Mitigated Negative Declaration for the above-mentioned subject. The Transportation Corridor Agencies (TCA) has reviewed the above-subject environmental document and has no comments at this time, but requests to be kept on the distribution list.

Additionally, should any potential lane or ramp closures, or detours to and from The Toll Road (SR 73) be needed, TCA requests to be notified with sufficient advance notice (no less than 14 business days) for planning purposes. Please send these notifications to Sam Rad, Corridor Manager, Operations, at srad@thetollroads.com or he may be reached at (949) 754-3481.

TCA looks forward to receiving all future notices, the final environmental document, along with any other forthcoming documentation for the Project. TCA appreciates the opportunity to provide input to your planning process. If you have questions or require additional information, please do not hesitate to contact me at 949.754.3487 or via email at vgomez@thetollroads.com.

Sincerely,

Virginia Gomez
Environmental Analyst

Response to the Transportation Corridor Agencies

The University acknowledges receipt of the letter from the Transportation Corridor Agencies (TCA). No comments were included, and, as requested, UCI will keep TCA on the project distribution list. In the event that lane or ramp closures or detours to the SR-73 are required as part of the project, TCA will be consulted with sufficient advance notice.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

June 14, 2019

Ms. Lindsey Hashimoto
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Subject: Comments on the Notice of Intent to Adopt a Mitigated Negative Declaration for the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall Project, Irvine, CA (SCH# 2019059078)

Dear Ms. Hashimoto:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall Project Mitigated Negative Declaration (MND), dated May 2019. The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act [CEQA], Guidelines §15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning program (NCCP). The University of California, Irvine (UCI) is a participating landowner under the Central/Coastal Orange County NCCP/Habitat Conservation Plan (HCP).

The project proposes the development of a 95,000-gross-square-foot nursing and health sciences hall and parking lot on 24.32 acres. Currently located on the parcel are a vehicle loop, parking lots, and previously graded open space. The project area is within the UCI campus on the north corner of California and Bison avenues. According to the Biological Resource Report (Appendix B), the open space within the project area is disturbed non-native grassland (14.03 acres) with a 0.25-acre patch of coastal sage scrub. The open space also contains an ephemeral drainage with associated southern willow scrub (0.07 acre) and mule fat scrub (0.19 acre). Coastal California gnatcatcher (*Polioptila californica*; Endangered Species Act - listed threatened) and northern harrier (*Circus cyaneus*; California Species of Special Concern), were observed within the biological study area (defined by the Biological Resources Report as the project area and a 150-foot buffer). A query of the California Natural Diversity Database (CNDDB) and other sources indicate that white-tailed kite (*Elanus leucurus*; a State Fully Protected Species) and California horned lark (*Eremophila alpestris actia*) have

potential to occur on site. General biological surveys were conducted in December 2018; pre-construction surveys for all sensitive species are proposed.

Our primary concerns regarding the proposed project are potential impacts to observed sensitive species, and impacts to species that may not have been detected due to the time of year at which surveys were conducted. We offer the following comments and recommendations to assist the UCI in avoiding or minimizing potential project impacts on biological resources.

1. In compiling data for the environmental baseline, the CNDDB was utilized by the applicant as a primary source to identify previously reported occurrences of special species and sensitive habitats in the project vicinity. The CNDDB is a statewide inventory, managed by the Department, and is routinely updated with the location and condition of the state's rare and declining species and habitats. Although the CNDDB is a valuable tool for tracking positive occurrences of special status species, it contains only those records that have been reported to the Department, and does not replace the need for timely physical surveys. We consider general biological surveys such as those conducted on December 3, 2018 inadequate to determine the flora and fauna on site. Plant and wildlife surveys should be conducted at the appropriate times of year to detect species (i.e., during the blooming period), and should and not be done opportunistically. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when sensitive species are active or otherwise identifiable, should be included in the impact analysis. The Department requests copies of all biological surveys, including forthcoming focused or species-specific surveys.

   While the Department agrees that preconstruction surveys, as required in mitigation measure BR-2, are appropriate to supplement data collected through surveys whose results are adequately disclosed, we consider the reliance upon future biological surveys inadequate to determine whether project impacts will be less than significant with mitigation. We therefore request that the Biological Technical Report and the MND be amended to include seasonally appropriate surveys.

2. A Species Relocation Plan may be an appropriate addition to the MND. On-site biologists should be required to obtain, as applicable, Scientific Collecting Permits. Mitigation measure BR-2 states that if wildlife, "…do[es] not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate distance from the project site, unless they are a Federally and/or State-listed species in which coordination and direction from USFWS and/or CDFW, respectively, shall be required" (page 4.3-5). In addition to CESA, the Department currently implements its authority to issue permits for the take or possession of wildlife, including mammals, birds, and the nests and eggs thereof, reptiles, and amphibians, fish, certain plants, and invertebrates for scientific, educational, and propagation purposes through Section 650, Title 14, California Code of Regulations, by issuing Scientific Collecting Permits. If wildlife is to be physically touched and/or moved, UCI should provide a Species Relocation Plan to the Department for approval prior to the

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

3. The nesting surveys mitigation measure discussed in the Biological Technical Report (Appendix B, page 26) is not included in the MND. The Department recommends that measures be taken to avoid project impacts to nesting birds, particularly since construction activities are scheduled to commence during the avian nesting season (MND, page 2-11), which is February 1- September 1 (as early as January 1 for some raptors). Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 50, § 10.13, Code of Federal Regulations), and sections 3503, 3503.5 and 3513 of the California Fish and Game Code. Fish and Game Code section 3503 prohibits the needless take of nests and eggs of all bird species except European starling and English sparrow; section 3503.5 prohibits take of all raptors or their eggs or nests; and section 3513 protects migratory birds in accordance with the Federal Migratory Bird Treaty Act. If avoidance of the avian breeding season is not feasible, the Department recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, individual's tolerance for disturbance, ambient levels of human activity, screening vegetation, or possibly other factors. We recommend that this language or that provided in the Biological Technical Report be included in the MND.

4. The Biological Resources section of the MND should be revised to include construction activities Best Management Practices. As a participating landowner under the Central/Coastal NCCP/HCP, UCI is required to adhere to the construction-related minimizations measures for the NCCP/HCP (see Attachment A). We recommend that these measures are added to the MND.

5. The Department recognizes UCI's commitment to avoiding riparian areas and special-status vegetation communities in the project area through mitigation measure BR-1. We recommend amending BR-1 to clarify that, "[n]o routing, staging, or any work shall occur within the drainage *or special-status vegetation communities*."

6. Mitigation measure BR-3 states that, "[i]f species are found, measures adherent to mitigation measure BR-1 described above shall be implemented" (page 4.3-5). Mitigation measure BR-1 pertains to avoidance of riparian areas. The Department believes that BR-3 may include a clerical error that was intended to refer to BR-2 (which pertains to biological resources found on site). The MND should be revised to

clarify BR-3, or, if written as intended, the MND should include a discussion of how BR-3 will be implemented and what benefit this measure will have for the biological resources.

7. Exhibit 2-4 depicts a conceptual design of the nursing and health sciences hall that contains large glass panels or windows. Bird strike, a direct impact to which migratory avian species are particularly susceptible, can be minimized through incorporation of "bird safe" elements in architectural design. Elements such as glazed windows, well-articulated building facades, and minimal nighttime lighting are encouraged to reduce collisions of migratory birds with buildings. Large flat windows, reflective glass, and transparent corners are strongly discouraged. We recommend that UCI follow as many of these guidelines as possible when considering structure design, as described in Standards for Bird Safe Buildings (San Francisco Planning Department 2011).

We appreciate the opportunity to comment on the MND for this project and to assist UCI in further minimizing and mitigating project impacts to biological resources. The Department requests an opportunity to review and comment on any response that UCI has to our comments and to receive notification of the forthcoming hearing date for the project (CEQA Guidelines; §15073(e)). If you have any questions or comments regarding this letter, please contact Jennifer Turner of the Department at (858) 467-2717 or via email at jennifer.turner@wildlife.ca.gov.

Sincerely,

Dal Mayer
for
Gail K. Sevrens
Environmental Program Manager

ec: Christine Medak (U.S. Fish and Wildlife Service)
Scott Morgan (State Clearinghouse)

Attachment A

Construction-Related Minimization Measures from the Joint Environmental Impact Report and Environmental Impact Statement for the Central/Coastal Orange County NCCP/HCP.

Attachment A

Construction-Related Minimization Measures
From the Joint Environmental Impact Report and Environmental Impact Statement
For the Central/Coastal Orange County NCCP/HCP
(Section 7.5.3, pages 7-145 to 7-143)

The NCCP/HCP proposes that certain construction-related minimization measures be required to assure that development/construction within areas recommended to be authorized for incidental take of CSS (including allowed uses within the Reserve System) be undertaken in a manner that minimizes impacts on gnatcatchers presently using or in close proximity to the habitat to be converted. These minimization measures would also be expected to benefit other Identified CSS species.

For *participating landowners,* each landowner will comply with the "construction-related minimization measures" as part of compliance with the landowner's individual Section 10(a) permit pursuant to the Implementation Agreement. For *"non-participating landowners,"* the construction-related minimization measures will be integrated with standard brush-clearance/grading permits at the local government level by signatory local governments as specified in the Implementation Agreement.

Since the construction-related minimization measures are based on measures required in prior gnatcatcher Section 7 consultations and Section 10 HCPs, these measures are determined to constitute significant minimization/mitigation of impacts of uses proposed to be allowed in or near CSS occupied by gnatcatchers.

MINIMIZATION/MITIGATION MEASURES - CONSTRUCTION RELATED IMPACTS

1. To the maximum extent practicable, no grading of CSS habitat that is occupied by nesting gnatcatchers will occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measure and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, cactus wrens and any other CSS Identified Species that are not otherwise flushed and will carry out the following' measures only to the extent as practicable in the context of the public health and safety considerations.

2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of CSS habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of CSS, a survey will be conducted to locate gnatcatchers and cactus wrens within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.

3. A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of CSS. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush Identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nets, if feasible, and relocated to areas of the site be protected or to the NCCP/HCP Reserve System. It will be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.

4. Following the completion of initial grading/earth movement activities, all areas of CSS habitat to be avoided by construction equipment and personnel will be marked with temporary fencing other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.

5. In areas bordering the NCCP Reserve System or Special Linkage/Special Management areas containing significant CSS identified in the NCCP/HCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent CSS identified in the NCCP/HCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.

6. CSS identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

Response to the California Department of Fish and Wildlife

Comment 1: As discussed in Section 4.3, Biological Resources, and Appendix B, Biological Resources, the 11.4-acre project site (of 27 acres surveyed) contains only ornamental and disturbed, nonnative grassland. Only one special-status plant species, the Robinson's pepper grass, has a moderate or higher potential to occur on the project site, which was not observed during site surveying. Additionally, the species has a CNPR designation of 4, which is not considered a significate take under CEQA. In consultation with the biologist and as discussed in the Biological Technical Report, it was determined that additional rare plant surveying was not needed as the occurrence of special-status plant species is unlikely.

Comment 2: In the event that wildlife would need to be relocated before or during construction, the University will notify CDFW prior to capture in compliance with mitigation measure BR-2 (Final IS/MND, page 4.3-4). The capture and relocation of wildlife, if needed, would be completed by a qualified biologist and a memo discussing the procedures taken would be prepared and submitted to CDFW.

Comment 3: Project-specific mitigation measure BR-4, which requires pre-construction nesting surveys, was added to Section 4.3, Biological Resources (Final IS/MND, page 4.3-5).

Comment 4: Regarding the recommended minimization measures 1 through 4: As discussed on page 4.3-3 of the Final IS/MND, coastal sage scrub does not occur within the project site. Additionally, with the incorporation of project-specific mitigation measure BR-1, which would stake off during construction the ephemeral drainage and its adjacent special-status vegetation communities located north of the project site, no impacts to coastal sage scrub would occur.

Regarding recommended minimization measures 5 and 6: The project site is not located in an area bordering the NCCP/HCP Reserve System and would not directly impact protected coastal sage scrub.

Comment 5: The language "…or special-status vegetation communities" was added to project-specific mitigation measure BR-1 on page 4.3-4 of the Final IS/MND.

Comment 6: The language of the project-specific mitigation measure BR-3 was updated from "BR-1" to "BR-2" on page 4.3-5 of the Final IS/MND.

Comment 7: As discussed in Section 4.1, Aesthetics (Final IS/MND, page 4.1-3), LRDP EIR mitigation measures Aes-2A and Aes-2B would be incorporated into the project. These include design features to minimize glare impacts of glass windows and require an exterior lighting plan that would address light intensity and spillover to sensitive resources.

Community Development
1 Civic Center Plaza, Irvine, CA 92606-5208
cityofirvine.org
949-724-6000

June 14, 2019

Ms. Lindsey Hashimoto
University of California, Irvine
Office of Physical and Environmental Planning
4199 Campus Drive, Suite 380
Irvine CA 92697-2325

Subject: **Notice of Intent (NOI) to Adopted a Mitigated Negative Declaration for the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall at the University of California, Irvine (UCI)**

Dear Ms. Hashimoto:

Staff is in receipt of the NOI to adopt a Mitigated Negative Declaration for the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall at UCI. The proposed project consists of a 95,000 square feet Nursing and Health Sciences Hall and a 125,000 square-foot College of Health Sciences building at UCI's Health Sciences Quad. The new buildings will be five stories tall and located at the north corner of California Avenue and Bison Avenue. To accommodate the buildings, the project will demolish landscaping, pedestrian walkways, a vehicle loop, and surface parking, which will be replaced at a one-to-one ratio.

Staff completed its review and has provided comments. If you have any questions, please contact me at jequina@cityofirvine.org or 949-724-6364.

Sincerely,

Justin Equina
Associate Planner

Enclosure: Staff comments

ec: Kerwin Lau, Manager of Planning Services
Lisa Thai, Supervising Transportation Analyst
Melissa Chao, Senior Planner

CITY OF IRVINE COMMENTS

1. Confirm the number of buildings proposed for this project. The project description states there are only two buildings; however, Figure 3.1, shows five additional "future buildings." Additionally, confirm whether or not the "future buildings" are a part of the LDRP.

2. In Figure 3-1, include the following:

    - Provide a "Not A Part" label on the buildings that are not included in this project.
    - Identify the existing 1,000 space parking lot.
    - Identify the interim 200 space parking lot.

3. In the study area intersections, include the following:

    - SR-73 NB Off-Ramps/University
    - California/University, and
    - Campus/University

4. Revise the language in Table 1-3 (Performance Criteria for Locations Analyzed within the Study Area), under the Mitigation Requirement, to show the following:

    Traffic impacts occur at an intersection if either of the two conditions are met:

    - A location is at acceptable Level of Service (LOS) in the baseline condition, and the project causes the location to become deficient; or
    - A location is deficient in the baseline condition, and the project causes the location to further deteriorate by at least two percent.

    Note: This is according to the City of Irvine's adopted performance criteria, thresholds of significance, and General Plan standards.

5. On Page 3.1, Project Description, please do the following:

    - Discuss the buildout condition for the interim parking. The first paragraph only includes a discussion about the two new buildings with a 200 space interim parking lot.

    - Revise the language in the fourth paragraph to show that the new traffic signal is already installed.

- Add a discussion in the fourth paragraph about whether or not the proposed second site access will be full access. If it is full access, staff recommends a signal warrant analysis.

6. In Figure 3-1, identify the location of the 1,000 space parking lot, as mentioned in the last paragraph of Page 3.1 - Project Description.

7. In the traffic study, include a discussion about whether or not the project's a.m., p.m., and total daily trips are a part of, or in addition to, the LRDP assumptions.

   Table 3-1 shows the project adding 937 total daily trips, 75 a.m. and 90 p.m. trips. Are these trips in addition to LRDP assumptions?

8. Provide an access analysis on the secondary access on California, north of Bison. The Transportation Design Procedures (TDPs) that should be analyzed include, but are not limited to:

   - TDP-1 (turn-lane pocket lengths)
   - TDP-4 (right-turn lane at driveways)
   - TDP-10 (distance between driveways and intersections)
   - TDP 12 (signal warrants), and
   - TDP-14 (driveway lengths)

9. Include a second scenario analysis in the traffic study. The study should include a trip distribution analysis to both project access driveways.

10. In the Traffic Impact Analysis findings, explain how the proposed project affects the 2007 LRDP mitigation measure findings. In addition, confirm the timing of the improvements, and whether or not any changes will occur as a result of the proposed project.

Response to the City of Irvine

Comment 1: Two buildings, the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall, would be constructed. Please refer to Section 2.0, Project Description, Exhibit 2-3 (Final IS/MND, page 2-6). These two structures are marked as 1 and 2, and the project site is delineated with a yellow line.

The buildings marked as "future buildings" are potential future development proposed for buildout of the Health Sciences Quad. The square footage, as proposed, is within the 2007 LRDP building capacity that was analyzed in the LRDP EIR. Each of these "future buildings" would be analyzed in a project-level CEQA document.

Comment 2: (1) As discussed in the response to Comment 1 above, as shown in Exhibit 2-3 (Final IS/MND, page 2-6), the project site is delineated with a yellow line. The two buildings, internal roadway, vehicle loop, pedestrian walkways, replacement parking, and the up to 350-space surface parking lot are included in the project description.

(2) The existing 1,000-space parking lot, Lot 70, is located southeast of the project site at the eastern corner of California Avenue and Bison Avenue as shown on Exhibit 2-1 (Final IS/MND, page 2-2).

(3) Appendix D, Traffic Study, has been updated and removed the references to an interim 200-space parking lot. The language regarding the 200-space interim parking lot was referencing the existing surface parking being replaced at a one-to-one ratio as discussed in Section 2.0, Project Description, in the Final IS/MND. As this is replacement of existing parking, no additional trips are associated with this use.

Comment 3: As shown on page 3.6 of Appendix D, Traffic Study, California Avenue has a 187 ADT, 15 AM peak hour, and 18 PM peak hour trips associated with the project. The intersections on University Drive, which are further from the project site than the study area intersections, would be less than the 187 ADT, 15 AM peak hour, and 18 peak hour trips on California Avenue as traffic disperses along Academy Way and University Drive. Due to the low number of trips, the project would not result in a significant impact to these intersections.

Comment 4: Table 1-3 on page 1.8 of Appendix D, Traffic Study, has been updated with the revised language in accordance with the City of Irvine's adopted performance criteria, thresholds of significance, and General Plan standards.

Comment 5: (1) As discussed in the response to Comment 2 above, Appendix D, Traffic Study, has been updated and removed the references to an interim 200-space parking lot. The language regarding the 200-space interim parking lot was referencing the existing surface parking being replaced at a one-to-one ratio as discussed in Section 2.0, Project Description, in the Final IS/MND. As this is replacement of existing parking, no additional trips are associated with this use.

(2) Page 3.1 of Appendix D, Traffic Study, has been updated to include language that the installation of the traffic signal at the Bison Avenue and Health Sciences Road intersection has been completed.

(3) Page 3.1 of Appendix D, Traffic Study, has been updated to clarify that the proposed second access point on California Avenue would be full access. UCI staff is meeting with the City Engineer on July 9, 2019 to discuss the installation of the left-hand turn pocket on California Avenue. Additionally, based on the modeling in the Traffic Study, volume of traffic at this access point would be approximately 375 ADT, which is under the threshold requiring signalization.

Comment 6: As discussed in the response to Comment 2 above, the existing 1,000-space parking lot, known as Lot 70, is located southeast of the project site at the eastern corner of California Avenue and Bison Avenue as shown on Exhibit 2-1 (Final IS/MND, page 2-2).

Comment 7: As discussed above in Comment 1 above and in Section 2.0, Project Description, the project's square footage is within the 2007 LRDP building capacity that was analyzed in the LRDP EIR (Final IS/MND, page 2-12). The 2007 LRDP Traffic Study analyzed the trips based on the LRDP projected future development, and therefore, the trips associated with the proposed project are included in the LRDP assumptions.

Comment 8: As discussed in Comment 5 above, UCI staff is meeting with the City Engineer and staff on July 9, 2019 to discuss the installation of the left-hand turn pocket on California Avenue**.**

Comment 9: Appendix D, Traffic Study, assumes full access at both the Bison Avenue and Health Sciences Road intersection and the proposed driveway on California Avenue, which would include the installation of a left-hand turn pocket. No additional scenarios are proposed for the project.

Comment 10: As discussed on page 4.13-54 of the 2007 LRDP EIR, the UCITP intersections are not located within UCI's jurisdiction, and, as such, would be planned, designed, and implemented by the owning entity. A "fair share" of the improvement costs would be paid by UCI as required by mitigation measures Tra-1E and Tra-1F. Therefore, the improvements listed in the UCITP are not proposed to be constructed by UCI because none are located within UCI's jurisdiction.

As discussed in Tra-1D, monitoring of UCITP intersections is required for every 3,000-student increase above the 2007-08 enrollment level. The campus performed UCITP intersection monitoring in March 2018 and the results are in the table below. All UCITP intersections are operating at an acceptable LOS D or higher and no improvements are needed at this time.

UCITP Intersections Existing Conditions (March 2018)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
Von Karman Ave & Campus Dr	0.51	A	0.65	B
Jamboree Rd & Campus Dr	0.59	A	0.64	B

Jamboree Rd & Birch St	0.52	A	0.52	A
Jamboree Rd & MacArthur Blvd	0.58	A	0.68	B
Carlson Ave & Michelson Dr	0.46	A	0.50	A
Carlson Ave & Campus Dr	0.40	A	0.62	B
Harvard Ave & Michelson Dr	0.62	B	0.87	D
University Dr & Campus Dr	0.82	D	0.72	C
University Dr & California	0.67	B	0.60	A
Culver Dr & Michelson Dr	0.53	A	0.71	C
Culver Dr & University Dr	0.74	C	0.85	D
Bonita Cyn. Rd & Newport Coast Dr	0.38	A	0.49	A

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

June 18, 2019

Lindsey Hashimoto
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Subject: Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall
SCH#: 2019059078

Dear Lindsey Hashimoto:

The State Clearinghouse submitted the above named MND to selected state agencies for review. The review period closed on 6/17/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, please visit: https://ceqanet.opr.ca.gov/2019059078/2 for full details about your project.

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

Sincerely,

Scott Morgan
Director, State Clearinghouse

Response to the State Clearinghouse

The letter from the State Clearinghouse confirms no additional comments were received from State agencies that the State Clearinghouse circulated the IS/MND to during the public review period.

APPENDIX G

Mitigation Monitoring and Reporting Program

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
LRDP EIR 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
LRDP EIR 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 prepare during design EPS to confirm
BR-1	Prior to the start of construction, the existing ephemeral drainage and special-status vegetation communities located to the north of the project site shall be	D&CS/EPS	D&CS to coordinate with contractor

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	staked off and remain until project construction completion. No routing, staging, or any work shall occur within the drainage or special-status vegetation communities		EPS to confirm
BR-2	Prior to clearing, mowing, or ground-breaking activities, a qualified biologist shall conduct a focused wildlife clearance survey for special-status wildlife species with the potential to occur within the project site. Focused surveys shall be inclusive of the entire survey area. If individuals of special-status wildlife species are found, they shall be allowed to move out of harm's way on their own accord. If they do not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate distance from the project site, unless they are a federally and/or State-listed species in which coordination and direction from USFWS and/or CDFW, respectively, shall be required.	D&CS/EPS	D&CS to coordinate survey EPS to confirm
BR-3	During construction, prior to the end of each work day, all open pipes and trenches shall be covered adequately to prevent wildlife from falling in and getting trapped. Prior to the start of construction each day, the construction site shall be checked, including vegetation, open pipes and trenches, and under staged vehicles, equipment, and materials. If species are found, measures adherent to mitigation measure BR-2 described shall be implemented.	D&CS/EPS	D&CS to coordinate with contractor EPS to confirm
BR-4	In order to avoid impacts to nesting birds, project activities shall occur outside of the peak avian breeding season, which runs from February 1st through August 31st. If project construction is necessary during the bird breeding season, a qualified biologist with experience in conducting bird breeding surveys shall conduct surveys for nesting birds, within three days prior to the work in the area, and ensure no nesting birds in the project area would be impacted by the project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting	D&CS/EPS	D&CS to coordinate survey EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	activities are not interrupted. The buffer shall be a minimum width of 300 feet (500 feet for raptors), be delineated by temporary fencing, and remain in effect as long as construction is occurring or until the nest is no longer active. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or other possible factors.		
LRDP EIR 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
LRDP EIR 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	D&CS/EPS	On-site construction supervisor to notify D&CS and EPS who will stop/direct work

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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.		Submit final report to EPS
LRDP EIR Cul-4B	If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.	D&CS/EPS	Submit documentation to EPS to report procedures were followed
LRDP EIR 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
LRDP EIR 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	D&CS/EPS	D&CS to record notification to the Fire Marshall

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	Fire Marshal. If determined necessary by the UCI Fire Marshal, local emergency services shall be notified of the lane or roadway closure by the Fire Marshal.		EPS to confirm
LRDP EIR 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.	D&CS/EPS	D&CS to incorporate findings into project design EPS to confirm
LRDP EIR 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	D&CS/EPS	D&CS to prepare erosion control plan and incorporate into construction documents

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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.		EPS to confirm
LRDP EIR 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	D&CS/EPS	D&CS to incorporate into construction documents

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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.		EPS to confirm
LRDP	Prior to initiating on-site construction for future projects that implement the	D&CS/EPS	D&CS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
EIR Noi-2A	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-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		with contractor and incorporate into construction documents EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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.		