



UCI

TIERED INITIAL STUDY &
MITIGATED NEGATIVE DECLARATION

Health Sciences Parking Structure

June 2021

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1.0 PROJECT INFORMATION

1.1 Project Title

Health Sciences Parking Structure

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 east of the California Avenue and Theory Drive intersection.

1.5 Custodian of the Administrative Record

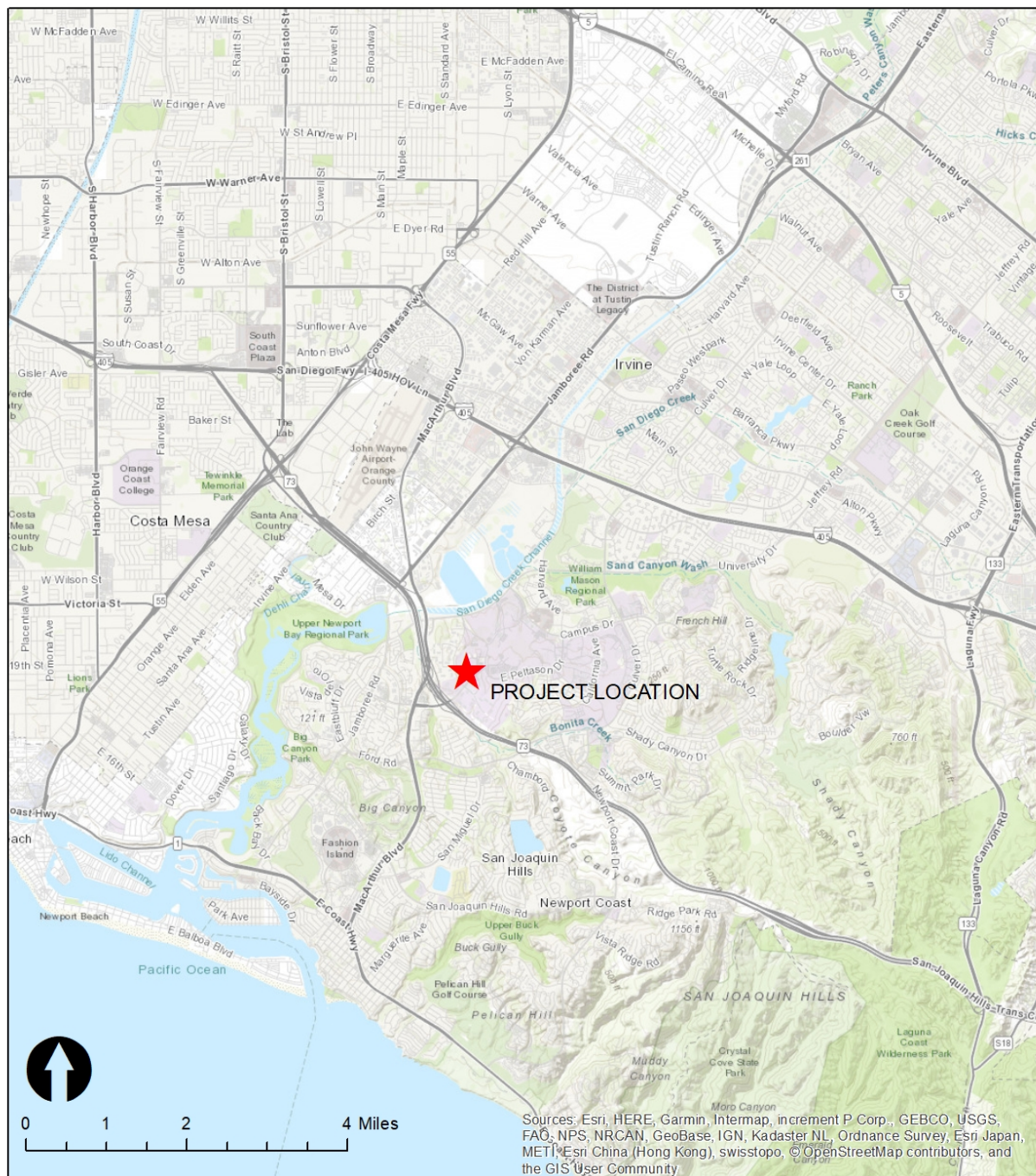
University of California, Irvine
Office of Physical and Environmental Planning
4199 Campus Drive, Suite 380, Irvine, CA 92697-2325

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 6.1-acre project site is located in the Health Sciences Quad of the West Campus. Surrounding uses include the University Research Park across California Avenue to the west; the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall currently under construction to the south; Sprague Hall, Hewitt Hall, and Lot HT to the east; and undeveloped land to the north. The site is currently undeveloped containing disturbed and nonnative grassland and ornamental landscaping (see Exhibits 2-1 and 2-2).

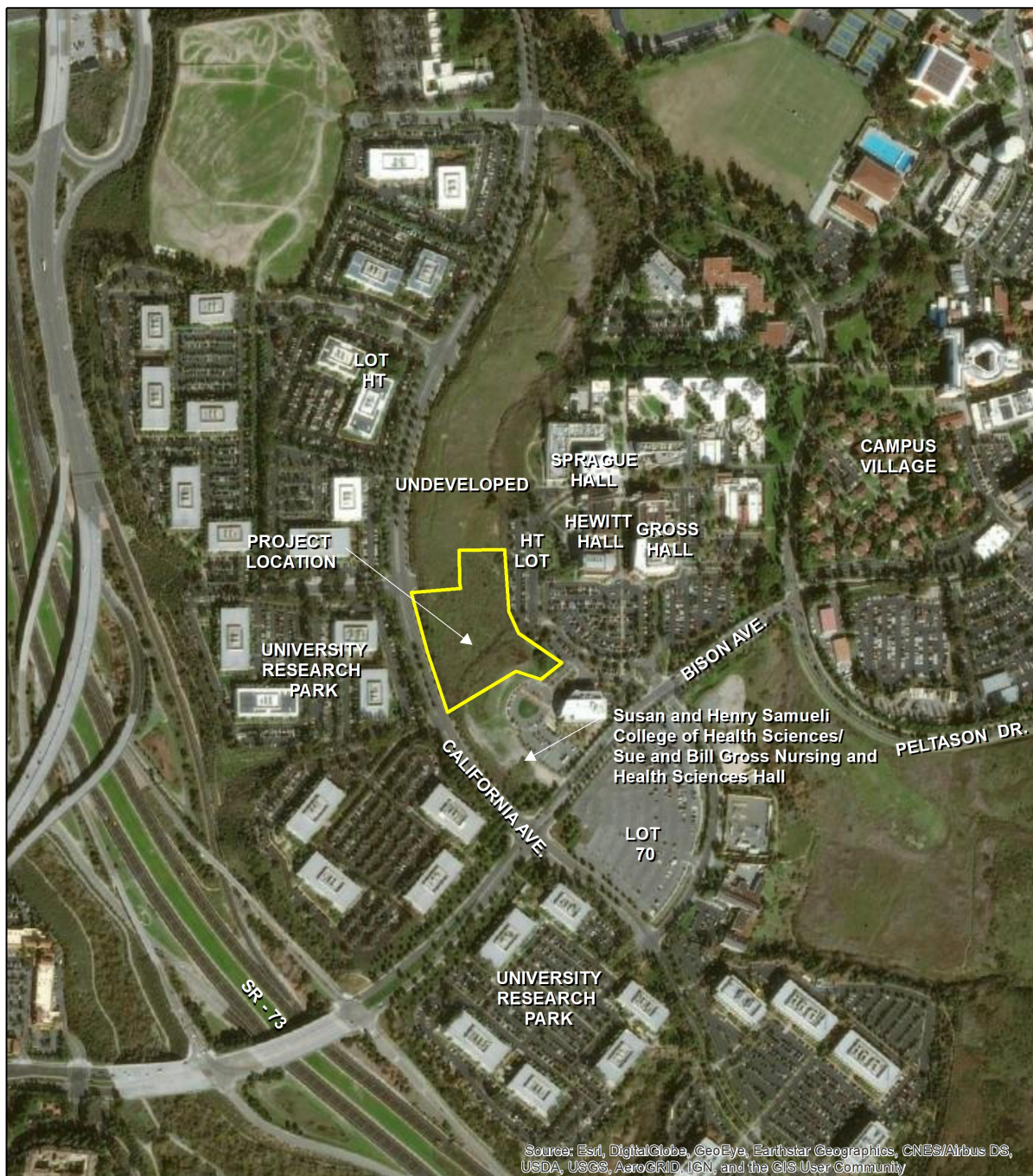
2.2 Description of Project

Campus building construction sited on surface parking lots has resulted in the loss of parking stalls throughout the campus. Based on the 2007 LRDP, buildout of the campus would result in the loss of more than 4,000 surface parking spaces, including approximately 1,500 spaces in the Health Sciences Quad vicinity. Construction of the proposed project would address the current parking supply and demand imbalance and reduce the impacts of future loss of parking spaces due to construction activity.

The proposed project would construct an approximately 1,900-space parking structure within the Health Sciences Quad of the UCI West Campus (see Exhibit 2-3). The approximately six-story open parking structure would be designed to be 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). To increase vehicular accessibility to the project site, a left-hand turn pocket, pending City of Irvine permit approval, and a driveway would be constructed and signalization would be installed at the California Avenue and Theory Drive intersection. Sidewalk and access improvements along California Avenue will be completed to meet code access and setback compliance. A campus wellness path is proposed along the east edge of the site, allowing for pedestrian and bicycle connections to the campus-wide network. Other site improvements would include vehicular arrival court and drop-off loop, 24-hour lighting, green space, 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.

In order to operate the parking structure, it is anticipated that no new staff would be hired. Additionally, as described above, the proposed project would replace previously displaced and future displacement of surface parking as new buildings are sited on existing surface lots throughout the campus. The parking structure would be utilized by the campus population projected within the 2007 LRDP and would not directly increase the campus population beyond what was analyzed in the 2007 LRDP EIR.

Exhibit 2-1
Project Location and Adjacent Land Uses



0 225 450 900 1,350 1,800
Feet

Exhibit 2-2
Existing Project Views



View 1: Center of the project site looking south toward the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall.



View 2: Center of the project site looking northeast toward Sprague Hall and Hewitt Hall.

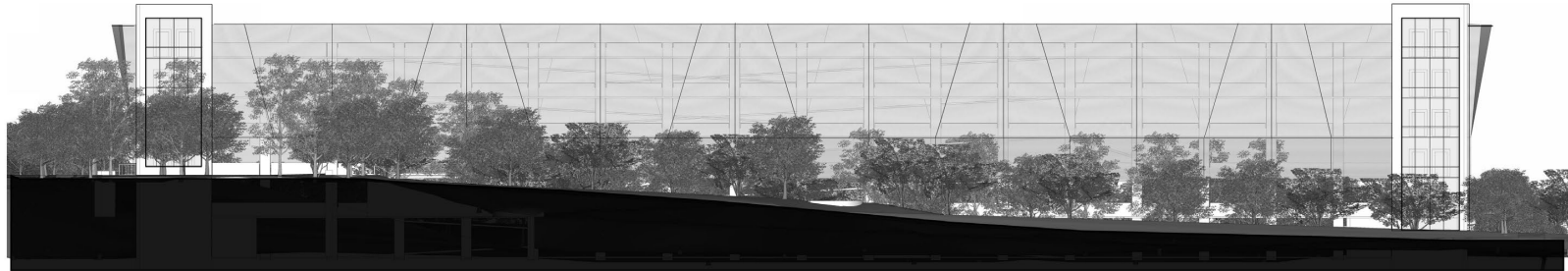


View 3: West of the project site at the California Avenue and Theory Drive intersection looking east toward the project site.

**Exhibit 2-3
Conceptual Site Plan**



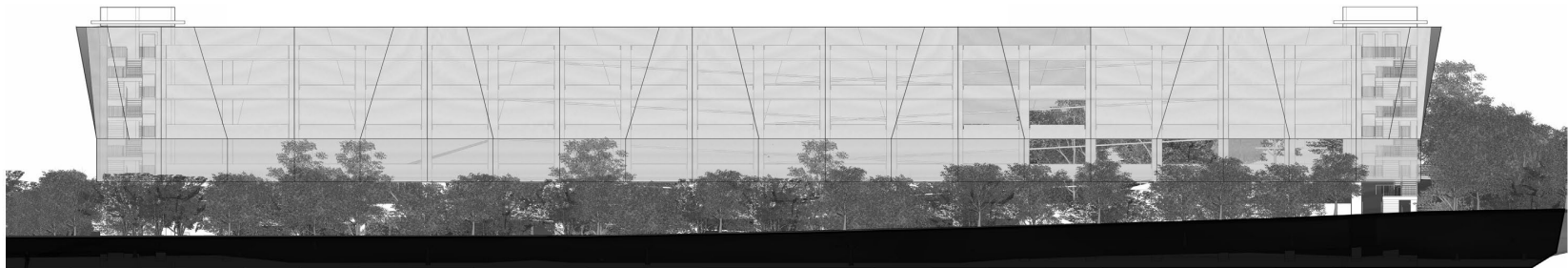
Exhibit 2-4
Conceptual Elevations



Conceptual East Elevation



Conceptual North Elevation



Conceptual West Elevation

Per Section A, Green Building Design, of the UC Sustainable Practices Policy, 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: water conservation measures, exceed Title 24 by 20 percent, use energy efficient lighting, photovoltaic panels, etc. In addition, because LEED certification is not applicable to parking structures, the proposed project would strive to achieve, at a minimum, silver certification from Parksmart, which is under the U.S. Green Building Council (USGBC) and administered by the Green Building Certification Institute, Inc. (GBCI) in order to continue sustainability efforts across the campus. 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 August 2021 and would occur over 16 months with anticipated completion in December 2022. Demolition and grading would occur during the first two months, and construction over the next 14 months.

Grading for the proposed improvements would require cut and fill to create the building pads. The proposed project is anticipated to have approximately 135,700 cubic yards (CY) of cut and 153,000 CY of fill, requiring approximately 120,400 CY of exported soil.

2.2.2 Access

Construction staging is currently proposed to occur on the project site. Haul routes during construction would be along Bison Avenue, California Avenue, and East and West Peltason Drives, with site access via California Avenue and the College of Health Sciences entryway.

Vehicular access would be provided in two locations: from the California Avenue and Theory Drive intersection and from the California Avenue and College of Health Sciences entryway intersection, which would enter the proposed structure at the third level. A pedestrian plaza would connect to the Health Sciences Quad buildings located east of the parking structure. The third level of the parking structure would connect to the College of Health Sciences and Nursing Building currently under construction to the south of the project.

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 10-inch line located in the College of Health Sciences entryway, recycled water through an existing 8-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 to the south 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). 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 drainage north of the project site, 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 is consistent with the 2007 LRDP land use designations of Transportation, Income-Producing Inclusion Area, and Open Space – General. A majority of the project, including the parking structure and vehicular circulation elements, falls within the Transportation and Income-Producing Inclusion Area land use designations, both of which allow for parking. Some landscaping and a pedestrian path are proposed to be located within the area designated as Open Space – General, which allows for both uses.

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 UCI Chancellor will consider design and CEQA approval of the proposed project in June 2021.

Responsible Agencies

City of Irvine

As described above in Section 2.2, Description of Project, proposed roadway improvements are located within the City of Irvine. Construction of the off-site improvements would require review of the improvement plan and permit approval.

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.

DocuSigned by:

 509C3C95E0494ED

June 21, 2021

Signature

Date

Richard Demerjian, Assistant Vice Chancellor
 Campus Physical and Environmental Planning

Printed Name

For

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

4.1 Aesthetics

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Except as provided in Public Resources Code Section 21099, would the project:</i>					
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 multi-story office, medical office, academic buildings, and surface parking. 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 parking structure would be approximately six stories designed to be consistent with the architectural guidelines in the UCI Physical Design Framework, such as the use of concrete, brick, or stone masonry. Areas adjacent to the project site include multi-story office, medical office, and academic buildings constructed with similar materials, such as the University Research Park to the west; Susan and Henry Samueli College of Health Sciences & Sue and Bill Gross Nursing and Health Sciences Hall currently under construction and the Gavin Herbert Eye Institute to the south; and Hewitt Hall and Sprague Hall to the east. 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. Additionally, 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

¹ <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983>. Accessed March 28, 2021.

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-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
<i>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:</i>					
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: Less Than Significant Impact

As part of its enforcement responsibilities, the Environmental Protection Agency (EPA) requires each state with nonattainment areas 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 Clean Air Act (CCAA) requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). 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 the South Coast Air Quality Management District (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). The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving the NAAQS and CAAQS. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the California Air Resources Board (CARB), the Southern California Association of Governments (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 2020 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 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.

According to the SCAQMD's *CEQA Air Quality Handbook*, the purpose of the consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with CAAQS and NAAQS.

The violations to which Consistency Criterion No. 1 refers are CAAQS and NAAQS. As shown in Table 4.2-1 and Table 4.2-3 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. Thus, no impact is expected, and the proposed 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 2007 UCI LRDP and Strategic Plan¹. The project is consistent with the 2007 LRDP land use designations of Transportation, Income-Producing Inclusion Area, and Open Space – General. A majority of the project, including the parking structure and vehicular circulation elements, falls within the Transportation and Income-Producing Inclusion Area land use designations, both of which allow for parking. Some landscaping and a pedestrian path are proposed to be located within the area designated as Open Space – General, which allows for both uses. 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. As the project is providing parking for an already entitled use, it would not exceed the population or job growth projections used by the SCAQMD to develop the AQMP. Therefore, the proposed project is consistent with the second criterion. Impacts would be less than significant.

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 PM₁₀ 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 16 months. The project is anticipated to require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. 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 Assessment for more information regarding the construction assumptions used in this analysis. The project's predicted maximum daily construction-related emissions are

¹ University of California, Irvine, *Strategic Plan*, 2016.

summarized in Table 4.2-1. As shown in Table 4.2-1, all criteria pollutant emissions would remain below their respective thresholds.

Table 4.2-1
Construction-Related Emissions

Construction Year	Pounds per Day					
	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})
2021	4.03	83.43	33.00	0.20	20.31	11.87
2022	5.52	27.21	29.62	0.09	5.28	2.05
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

Operational emissions are typically associated with vehicle trips (motor vehicles), energy sources (natural gas use), and area sources (consumer products, architectural coatings, and landscape maintenance equipment). The proposed project would replace displaced parking due to construction activity throughout the campus. The proposed project would address the current parking supply and demand imbalance and reduce the impacts of future loss of parking spaces.

In order to operate the structure, it is not anticipated that new staff would be hired. In addition, parking structures do not increase population on their own. The people that would utilize the parking structure are generated by the land uses accessible from the structure, such as the uses within the Health Sciences Quad. Therefore, the proposed project would not result in an increase in additional vehicle trips. No stationary sources are proposed. Therefore, operational emissions are less than significant.

Cumulative Construction Emissions

The SCAB is designated nonattainment for O₃, PM₁₀, and PM_{2.5} for the CAAQS and nonattainment for O₃ and PM_{2.5} for the NAAQS. 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 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 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. No mitigation is required.

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 NAAQS and CAAQS. 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 and, inversely, emission volumes below the SCAQMD operational thresholds are not cumulatively considerable.

The project would not generate new vehicle trips and as a result, the project's operational emissions would not result in a 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 a cumulatively considerable net increase of any nonattainment criteria pollutant. No mitigation is required.

c) Sensitive Receptors: Less Than Significant Impact

Localized Construction Significance Analysis

The nearest sensitive receptor to the project site is the Gavin Herbert Eye Institute located approximately 265 feet (80 meters) southeast of the project site. To identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (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 4.2-2: Equipment-Specific Maximum Daily Soil Disturbance Rates is used to determine the maximum daily disturbed acreage for comparison to LSTs.

Table 4.2-2
Equipment-Specific Maximum Daily Soil Disturbance Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Disturbed per 8-Hour Day	Operating Hours per Day	Acres Disturbed per Day
Site Preparation	Tractors	4	0.5	8	2
	Graders	0	0.5	8	0
	Dozers	3	0.5	8	1.5
	Scrapers	0	1.0	8	0
Total Acres Graded per Day					3.5
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.					

The appropriate source receptor area (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, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD produced reference tables (i.e., screening thresholds) for projects that disturb areas less than or equal to 5 acres in size. Project construction is anticipated to disturb a maximum of 3.5 acres in a single day during the site preparation phase. As the LST guidance provides thresholds for projects disturbing 1-, 2-, and 5-acres in size and the thresholds increase with size of the site, the LSTs for a 3.5-acre threshold was interpolated and utilized for this analysis.

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 receptor to the project site is the Gavin Herbert Eye Institute located approximately 265 feet (80 meters) southeast of the project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, LSTs screening thresholds for receptors located at 80 meters were interpolated and utilized for this analysis. Table 4.2-3 presents the results of localized emissions during project construction, which 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.

Table 4.2-3
Localized Significance of Construction Emissions

Construction Activity	Pounds per Day			
	Nitrogen Oxide	Carbon Monoxide	Coarse Particulate	Fine Particulate

	(NO _x)	(CO)	Matter (PM ₁₀)	Matter (PM _{2.5})
Site Preparation (2021)	40.50	21.15	9.77	6.13
Grading (2021)	24.74	15.86	4.05	2.52
Building Construction (2021)	17.43	16.58	0.96	0.90
Building Construction (2022)	15.62	16.36	0.81	0.76
Paving (2022)	11.12	14.58	0.57	0.52
Architectural Coating (2022)	1.41	1.81	0.08	0.08
SCAQMD Localized Screening Threshold (adjusted for 3.5 acres at 80 meters)	165.9	1,778.9	40.6	12.60
Exceed SCAQMD Threshold?	No	No	No	No

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

Localized Operational Significance Analysis

The operational LST analysis only includes on-site sources. The project would construct an approximately six-level parking structure within the Health Sciences Quad on the UCI West Campus. As noted above, the project would not generate new vehicle trips or stationary sources. Therefore, impacts would be less than significant.

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). The Friant Ranch project was a 942-acre Specific Plan that involved a commercial master planned community of approximately 2,500 dwelling units and extensive commercial supporting development. The anticipated air quality impacts resulting from this development included significant and unavoidable emissions of multiple criteria pollutants (including significant emissions of both primary O₃ precursors [NO_x and ROG_s]) at levels that exceeded the daily thresholds of significance. As noted above, the project's operational emissions would not exceed the SCAQMD's significance thresholds.

The SCAQMD has set its CEQA significance thresholds based on the FCAA, which defines a major stationary source (in extreme O₃ nonattainment areas such as the SCAB) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program² was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based NAAQS. The NAAQS establish the levels of air quality necessary, with an adequate margin of safety, to protect the

¹ Code of Federal Regulation (CFR) [i.e. PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)]

public health. Therefore, projects that do not exceed the SCAQMD's LSTs and mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

NO_x and ROG are precursor emissions that form O₃ in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so O₃ may be formed at a distance downwind from the sources. Breathing ground-level O₃ can result in health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily O₃ concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that O₃ can make asthma symptoms worse and can increase sensitivity to asthma triggers.

According to the SCAQMD's 2016 AQMP, O₃, NO_x, and ROG have been decreasing in the SCAB since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled in the SCAB continue to increase, NO_x and ROG levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions from electric utilities have also decreased due to the use of cleaner fuels and renewable energy. The 2016 AQMP demonstrates how the SCAQMD's control strategy to meet the 8-hour O₃ standard in 2023 would lead to sufficient NO_x emission reductions to attain the 1-hour O₃ standard by 2022. In addition, since NO_x emissions also lead to the formation of PM_{2.5}, the NO_x reductions needed to meet the O₃ standards will likewise lead to improvement of PM_{2.5} levels and attainment of PM_{2.5} standards.

The SCAQMD's air quality modeling demonstrates that NO_x reductions prove to be much more effective in reducing O₃ levels and will also lead to significant improvement in PM_{2.5} concentrations. NO_x-emitting stationary sources regulated by the SCAQMD include Regional Clean Air Incentives Market (RECLAIM) facilities (e.g. refineries, power plants, etc.), natural gas combustion equipment (e.g. boilers, heaters, engines, burners, flares) and other combustion sources that burn wood or propane. The 2016 AQMP identifies robust NO_x reductions from new regulations on RECLAIM facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_x emissions levels achievable but there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The AQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies.

The 2016 AQMP also emphasizes that beginning in 2012, continued implementation of

previously adopted regulations will lead to NO_x emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_x from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_x reductions from stationary sources achieved in the decades prior to 2008.

As previously discussed, project emissions would not exceed SCAQMD's regional thresholds for criteria pollutants (refer to above tables). In addition, localized effects of on-site project emissions on nearby receptors would not exceed the SCAQMD's LST thresholds. 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 state or federal ambient air quality standard. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each SRA and distance to the nearest sensitive receptor. The NAAQS and CAAQS 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 NAAQS and CAAQS or cause an increase in the frequency or severity of existing violations of the NAAQS and CAAQS. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based NAAQS and CAAQS.

Carbon Monoxide Hotspots

Intersection 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 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 and Veteran Avenue intersection, one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day, 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.

It should be noted that this project would not generate new vehicle trips as it would serve existing campus uses. As the project would not generate additional vehicle trips, it would not

generate a CO hot spot.

Parking Structure Hotspots. CO concentrations are a function of vehicle idling time, meteorological conditions, and traffic flow. Parking structures may cause concern regarding CO hotspots, as they may be enclosed and have frequent vehicle operations in cold start mode. Open parking structures above ground would be naturally ventilated, preventing CO hotspots. The proposed parking structure would be open on sides and naturally ventilated which would allow for sufficient ventilation and CO hotspots would not occur. The proposed project is an open parking structure; however, if the structure were to be enclosed, it would be required to comply with ventilation requirements of the California Mechanical Code and the International Mechanical Code (Section 404 [Enclosed Parking Garages]), which requires mechanical ventilation systems for enclosed parking garages to operate automatically by means of CO and NO₂ detectors. Section 404.2 requires a minimum air flow rate of 0.05 cubic feet per second per square foot (cfs/sf) and the system shall be capable of producing a ventilation airflow rate of 0.75 cfs/sf of floor area³. Impacts regarding parking structure CO hotspots would be less than significant.

Construction-Related Diesel Particulate Matter

Construction would result in the generation of 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 toxic air contaminant (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 dissipates 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 are located approximately 265 feet from the project site. Project construction involves phased activities in several areas across the site and the project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs.

Construction is subject to and would comply with California regulations (e.g., California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Sections 2485 and 2449), which reduce diesel PM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles and limit the idling of heavy-duty construction equipment to no more than five minutes. These

³ International Code Council, International Mechanical Code, Chapter 4 Ventilation, 2015. <https://codes.iccsafe.org/public/document/IMC2015/chapter-4-ventilation>, accessed August 15, 2018.

regulations would further reduce nearby sensitive receptors' exposure to temporary and variable diesel PM emissions. Given the temporary and intermittent nature of construction activities likely to occur within specific locations in the project site (i.e., construction is not likely to occur in any one location for an extended time), the dose of diesel PM of any one receptor is exposed to would be limited. Therefore, considering the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area and the highly dispersive properties of diesel PM, sensitive receptors would not be exposed to substantial concentrations of construction-related TAC emissions. Impacts would be less than significant. No mitigation is required.

d) Emission Odors: Less than Significant Impact

Construction

Odors that could be generated by construction activities are required to follow SCAQMD Rule 402 to prevent odor nuisances on sensitive land uses. SCAQMD Rule 402, Nuisance, states:

A person shall not 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.

During construction, emissions from construction equipment, such as diesel exhaust, and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be temporary, are not expected to affect a substantial number of people and would disperse rapidly. No mitigation is required.

Operational

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 project proposes the construction of a parking structure which would not involve the types of uses that would emit objectionable odors affecting substantial numbers of people. The proposed project would not include any of the land uses that have been identified by the SCAQMD as significant odor sources. 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
<i>Would the project:</i>					
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 the project site and a 150-foot buffer in April 2021. A previous larger survey occurred in December 2021 that encompassed 24 acres and a 150-foot buffer within the West Campus, which included the current project site. The project site includes ornamental landscaping and disturbed and nonnative grassland.

The results of the database record searches (5-mile radius search of the CNDDDB RareFind 5 and CNPS Online Inventory; and query of the USFWS IPaC online system) revealed documented

occurrences for a total of forty-six (46) special-status plant species and a total of thirty-nine (39) special-status wildlife species. Nearly all the special-status species with documented occurrences from the records search were evaluated by the biologists 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, are discussed below.

No special-status plant species were observed during the December 2018 or April 2021 survey. Three (3) special-status wildlife species were observed during the two surveys: northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus leucurus*) and coastal California gnatcatcher. Based on the literature review/database searches and on-site habitat suitability assessments, the biologists determined that the survey area contains suitable habitat with a moderate or high potential to support one (1) other special-status wildlife species, California horned lark (*Eremophila alpestris actia*).

Special-status Plant Species

No special-status plant species were observed during either the 2018 or 2021 surveys. Of the forty-six (46) special-status plant species documented within the 5-mile search that could potentially occur, all 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 being outside of the species’ known distribution range.

Special-status Animal Species

Three (3) special-status wildlife species were observed during the survey: northern harrier, white-tailed kite, and coastal California gnatcatcher. Of the thirty-nine (39) special-status wildlife species documented within the 5-mile search, California horned lark (*Eremophila alpestris actia*) was determined to 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.

Northern harrier: This bird species is known to nest in dense grasslands, wetlands, and marshes, where it nests directly on the ground in protected areas surrounded by dense vegetative ground cover. One northern harrier was observed foraging on-site during the 2018 survey. There are no recorded nesting records in the CNDDb within 5 miles of the survey area, and this species has been declining on the coastal slope for decades as a breeding bird. Although there is an influx of wintering species each year, the local population of nesting birds is far smaller, and there is no nesting habitat on-site. Therefore, although this species may forage on-site it would not nest on-site.

Coastal California gnatcatcher: This bird species is known to nest and forage in coastal sage scrub vegetation, where it is obligate. It is rarely found outside of this vegetation except most often when adjacent vegetation provides post-fledging dispersal routes between habitat patches. Two California gnatcatchers were observed on the northeastern edge of the 2018 survey area,

not within the current project footprint or survey area, where there is a small patch of coastal sage scrub vegetation outside of the current survey area limits. No gnatcatchers were incidentally detected during the 2021 survey. Although this species was observed in 2018, vegetation within the current survey area is marginal for this species and there is a low likelihood of it nesting 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 and white-tailed kite was observed foraging on-site during the 2021 survey. The nearest recorded nest occurrence for white-tailed kite is approximately 0.6 mile to the southeast. On-site trees were checked for any indication of possible kite nesting in the immediate survey area but none was found. Therefore, this species should be expected to forage on-site but is unlikely to nest.

California horned lark: This bird species is known to occur in low herbaceous vegetation with widely scattered low shrubs, such as the conditions 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 and to nest on-site.

Special-status Vegetation Communities

The CNDDDB 5-mile radius records search revealed a total of seven (7) special-status vegetation community occurrences including Southern Coast Live Oak Riparian Forest, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Dune Scrub, Southern Foredunes, Southern Sycamore Alder Riparian Woodland, and Valley Needlegrass Grassland. None of these seven special-status vegetation communities were observed within the survey area.

Focused pre-construction wildlife clearance surveys prior to the commencement of construction, and monitoring during construction, would be required to determine the presence or absence of the special-status animal species on-site to avoid potential take. Therefore, with implementation of mitigation measures BR-1, BR-2, and BR-3, 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: No Impact

c) Wetlands: No Impact

The project site contains only ornamental and disturbed and nonnative grassland. Qualified biologists surveyed the project site in December 2018 and April 2021 and no riparian habitat or wetlands were observed. Therefore, no impacts to riparian habitat or wetlands would occur. No mitigation is required.

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, 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-1, BR-2, and BR-3, which would survey wildlife prior to the start of construction, monitor wildlife during construction, and conduct pre-construction nesting bird surveys, 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-1, BR-2, and BR-3, which would survey wildlife prior to the start of construction, monitor wildlife during construction, and conduct pre-construction nesting bird surveys, 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. Therefore, no impacts would occur. No mitigation is required.

Mitigation 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 special-status wildlife species are found that are already covered by the Orange County NCCP/HCP, they shall be allowed to move out of harm's way on their own. If they do not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate distance from the project site under the conditions of the take permits that were issued by CDFW and USFWS for the Orange County NCCP/HCP. If special-status species not already covered by the NCCP/HCP are found within the project site at the time of construction that cannot move on their own, a qualified biologist shall coordinate with CDFW and/or USFWS, as applicable and as necessary, to determine measures to avoid and minimize impacts and, if impacts cannot be avoided and mitigation is required, it will be provided to ensure CEQA

compliance. However, based on the analysis conducted for this project, unavoidable impacts to special-status species that are not covered by the Orange County NCCP/HCP are not expected to occur within the areas proposed for construction.

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, the site shall be checked, 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.

MM BIO-3: Proposed construction activities shall avoid the bird breeding season (January 1 to August 31), if feasible. If avoidance of the period from January 1 to August 31 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 in direct 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 no more than 3 days prior to project commencement.

In the event that active nests are discovered, a suitable buffer (distance to be determined by the biologist based on the specific species found to be nesting, but typical nest buffers are from 500 feet to 300 feet but can be smaller depending on the bird species) shall be established around such active nests, and no construction within the buffer shall be 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) or that it is safe to resume certain construction activities. Avoidance buffers may be reduced in size if a qualified biological monitor is present to observe the birds. The biological monitor must use best professional judgment to ensure that construction activities do not cause “take” (e.g., adults flushing off of a nest, fledglings changing behavior that could put them in harm, or any other form of disturbance).

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
<i>Would the project:</i>					
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 project site is located on undeveloped land within the West Campus. 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 in the West Campus, neither of which are located within the project site boundary. Additionally, both sites in the West Campus were previously recovered and recorded. To date, there has been no evidence of

additional archaeological resources within the project boundary, but there is a possibility that unknown archaeological remains could occur beneath the ground surface (LRDP EIR, page 4.4-4). Earth moving activities could 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 archaeologist, 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, exceed Title 24 by 20 percent, use energy efficient lighting, photovoltaic panels, etc.) in compliance with the UC Sustainable Practices Policy. In addition, because LEED certification is not applicable to parking structures, the proposed project would strive to achieve, at a minimum, silver certification from Parksmart, which is under the U.S. Green Building Council (USGBC) and

administered by the Green Building Certification Institute, Inc. (GBCI) in order to continue sustainability efforts across the campus. 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
<i>Would the project:</i>					
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 Preliminary Geotechnical Data Report, which surveyed a portion of the West Campus including 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.

¹ <https://maps.conservation.ca.gov/cgs/informationwarehouse/landslides/>. Accessed April 1, 2021.

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
<i>Would the project:</i>					
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 activities associated with the proposed project are estimated to last up to 16 months. The project site is vacant and there would be no demolition phase. Grading for the proposed improvements would require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. 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 4.7-1: Construction-Related Greenhouse Gas Emissions.

Table 4.7-1
Construction-Related Greenhouse Gas Emissions

Category	MTCO₂e
Construction Year 1 (2021)	981
Construction Year 2 (2022)	600
Total Construction Emissions	1,581
30-Year Amortized Construction	53
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

As shown in Table 4.7-1, the project would result in the generation of approximately 1,581 MTCO₂e over the course of construction. Construction GHG emissions are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.¹ The amortized project construction emissions would be 53 MTCO₂e per year. Once construction is complete, the generation of these GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the project. GHG emissions 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 also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to, and wastewater from a project, the emissions associated with solid waste generated from a project, and any fugitive refrigerants from air conditioning or refrigerators.

The proposed project would construct an approximately six-level parking structure to serve existing campus uses. It would not generate additional vehicle trips, and no stationary sources are proposed. The energy related GHG emissions associated with the project would be 223 MTCO₂e per year. When combined with the amortized GHG emissions, the total annual project emissions would be 276 MTCO₂e per year, which is below the SCAQMD's 3,000 MTCO₂e annual threshold. Thus, total project GHG emissions would be less than significant. No mitigation is required.

b) Conflict with a Greenhouse Gas Plan, Policy, or Regulation: Less than Significant Impact

Regional Transportation Plan/Sustainable Communities Strategy Consistency

On September 3, 2020, SCAG's Regional Council adopted the 2020 Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS). The RTP/SCS is a long-range visioning plan that

¹ 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).

balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG's RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 as well as an overall GHG target for the Project region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of Executive Orders 5-03-05 and B-30-15.

The RTP/SCS contains over 4,000 transportation projects, ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs and replacement bridges. These future investments were included in county plans developed by the six county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices for everyone. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding.

The plan accounts for operations and maintenance costs to ensure reliability, longevity, and cost effectiveness. The RTP/SCS is also supported by a combination of transportation and land use strategies that help the region achieve state GHG emissions reduction goals and Federal Clean Air Act (FCAA) requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and utilize resources more efficiently. GHG emissions resulting from development-related mobile sources are the most potent source of emissions, and therefore Project comparison to the RTP/SCS is an appropriate indicator of whether the Project would inhibit the post-2020 GHG reduction goals promulgated by the state. The Project's consistency with the RTP/SCS goals is analyzed in detail in Table 4.7-2: Regional Transportation Plan/Sustainable Communities Strategy Consistency. The goals stated in the RTP/SCS were used to determine consistency with the planning efforts previously stated. As shown in Table 4.7-2, the proposed project would be consistent with the stated goals of the RTP/SCS. Therefore, the proposed project would not interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets.

Table 4.7-2

Regional Transportation Plan/Sustainable Communities Strategy Consistency

<i>SCAG Goals</i>	<i>Compliance with Goal</i>
GOAL 1: Encourage regional economic prosperity and global competitiveness.	Not Applicable. This is not a project-specific policy and is therefore not applicable.
GOAL 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 3: Enhance the preservation, security, and resilience of the regional transportation system.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 4: Increase person and goods movement and travel choices within the transportation system.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 5: Reduce greenhouse gas emissions and improve air quality.	Consistent. As discussed above, this project proposed a six-level parking structure which would serve the campus. It would not generate additional vehicle trips and no stationary sources are proposed.

SCAG Goals	Compliance with Goal
GOAL 6: Support healthy and equitable communities.	Consistent. As noted above, the project involves the development of a parking structure that would serve the campus.
GOAL 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	Not Applicable. The project involves a parking structure that would serve the campus and is not a housing development.
GOAL 10: Promote conservation of natural and agricultural lands and restoration of habitats.	Not Applicable. The project is not located on agricultural lands. The project site is located within the UCI campus and is not within the Reserve System or identified special linkage areas.
Source: Southern California Association of Governments, <i>Connect SoCal 2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy</i> , 2020.	

California Air Resource Board Scoping Plan Consistency

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, CARB adopted the *Climate Change Scoping Plan* (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program. The 2017 Scoping Plan Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the first update to the Scoping Plan in 2013. Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets.

As shown in Table 4.7-3: Project Consistency with Applicable CARB Scoping Plan Measures, the project is consistent with most of the strategies, while others are not applicable to the Project.

Table 4.7-3
Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	Consistent. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	Consistent. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the Project would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	Consistent. The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the Project site would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	Consistent. This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the Project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related GHG Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	Consistent. The Project would provide development in the region that is consistent with the growth projections in the RTP/SCS.
	Goods Movement	Goods Movement Action Plan January 2007	Not applicable. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	Consistent. This measure applies to medium and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the Project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	Not applicable. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	Consistent. The Project would not conflict with implementation of this measure. The Project would comply with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	Consistent. The Project would obtain electricity from the UC Energy Services Unit (which is 100 percent carbon free power) via the UCI Combined Heat and Power Plant.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax Incentive Program	Consistent. This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would comply with the UCI and UC water efficiency policies which require a reduction in indoor and outdoor water use.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would implement required green building strategies consistent with the various 2019 CalGreen requirements.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	Not applicable. The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 MTCO ₂ e of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. As shown above, total Project GHG emissions would not exceed 10,000 MTCO ₂ e. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CalGreen code. UCI currently has an 83 percent diversion rate.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap and Trade Offset Projects	Not applicable. The Project is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	Not applicable. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	Not applicable. The Project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			proposed to be implemented by the Project.
Source: California Air Resources Board, <i>California's 2017 Climate Change Scoping Plan</i> , November 2017 and CARB, <i>Climate Change Scoping Plan</i> , December 2008.			

UCI Climate Action Plan (CAP)

The UCI Climate Action Plan (CAP) was developed as a framework to enable the university to meet their GHG emissions target. As discussed above, the proposed parking structure would serve campus uses. It would not generate additional vehicle trips and no stationary sources are proposed. As discussed above, total project GHG emissions would be 276 MTCO₂e per year, which is considered less than significant. As the project would serve campus uses and would not result in new vehicle trips or other growth, it would not conflict with UCI's GHG reduction goals addressed in the CAP.

Conclusion

As discussed above, the proposed project would not interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets. Additionally, project emissions would be indirectly reduced through the implementation of various Scoping Plan measures, such as the low carbon fuel standard, vehicle emissions standards, building energy efficiency standards, market-based mechanisms (such as the cap-and-trade program) and the Renewable Portfolio Standard. Therefore, the project would not conflict with the Scoping Plan's recommended measures and, as such, would not impede implementation of the Scoping Plan. As such, impacts related to consistency with the Scoping Plan would be less than significant.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the proposed project would benefit from the implementation of current and potential future regulations (e.g., improvements in vehicle emissions, SB 100/renewable electricity portfolio improvements, etc.) enacted to meet an 80 percent reduction below 1990 levels by 2050.

The project would not conflict with any applicable plan, policy, or regulation of an agency adopted for reducing the emissions of GHGs because the Project would generate low levels of GHGs and would not impede implementation of the Scoping Plan nor conflict with the policies of the Scoping Plan or any other GHG reduction plan. Therefore, the impacts would be less than significant. 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
<i>Would the project:</i>					
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 throughout the campus (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 project is a parking structure, which would use fertilizers, pesticides, paint, asphalt, fuels, solvents, cleaners, and other hazardous materials in limited quantities for maintenance during operation. Furthermore, as a parking structure, minimal amount of these hazardous materials would be stored on-site. 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.

Implementation of the 2007 LRDP, including this project, would increase hazardous materials use and waste generation on campus; however, UCI policy implemented by the Office of Environmental Health and Safety (EH&S) requires disposal and transportation of all hazardous materials conform to all federal, State, and local requirements. 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 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.

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 Main 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.¹ Additionally, as reported in the 2007 LRDP EIR, no accidents have occurred near the campus since 1981 (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.

¹https://files.ocair.com/media/2021-02/JWA_AELUP-April-17-2008.pdf?VersionId=cBobyJjdad9OuY5im7Oaj5aWaT1FS.vD. Accessed April 3, 2021.

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 disturbed and nonnative grasslands 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 proposed project is an unenclosed parking structure, 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 as part of the project. 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
<i>Would the project:</i>					
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 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 the 100-year 24-hour storm event. 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). Low impact development (LID) features or BMPs would be implemented in compliance with UCI's MS4 permit to retain and treat stormwater flows on the project site before release into the existing drainage to the north of the project site.

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:

¹https://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
<i>Would the project:</i>					
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 a parking structure within the Health Sciences Quad of the West Campus. Surrounding uses include the University Research Park across California Avenue to the west; the Susan and Henry Samueli College of Health Sciences and Sue and Bill Gross Nursing and Health Sciences Hall currently under construction to the south; Sprague Hall, Hewitt Hall, and Lot HT to the east; and undeveloped land to the north. The addition of parking 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 and bicycle paths would be constructed to connect the proposed project to the existing structures in the Health Sciences Quad located to the east and the College of Health Sciences and Nursing School buildings under construction to the south. 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 is consistent with the 2007 LRDP land use designations of Transportation, Income-Producing Inclusion Area, and Open Space – General. A majority of the project, including the parking structure and vehicular circulation elements, falls within the Transportation and Income-Producing Inclusion Area land use designations, both of which allow for parking. Some landscaping and a pedestrian path are proposed to be located within the area designated as Open Space – General, which allows for both uses.

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
<i>Would the project result in:</i>					
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 16-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 a parking structure adjacent to academic, clinical, and commercial uses. 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 and California Avenue and pedestrians within the Health Sciences Quad. As discussed in Section 4.14, Transportation and Traffic, as a parking structure, the proposed project does not directly generate trips, but instead is utilized by the surrounding uses. Therefore, a substantial permanent increase in ambient noise levels would not occur as these trips are already generated by uses within the project vicinity. Additionally, although the parking structure is not enclosed, it would consist of users parking vehicles and walking to their destination, which would not result in people or groups remaining in the structure for long periods of time.

Additionally, the proposed project is consistent with the LRDP. 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 and academic 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, California Avenue between Theory Drive and Bison Avenue, has an estimated 66 dBA CNEL at 50 feet from the centerline at LRDP buildout, which is within the 50 to 70 dB CNEL range for office and academic uses.

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.

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 contour¹ 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 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays. However, as determined by UCI, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by

¹ https://files.ocair.com/media/2021-03/2015.pdf?piVd4IKNO5dySd9zQpWwj2I_WW7x2Gai. Accessed April 2, 2021.

- 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
<i>Would the project:</i>					
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: No Impact

The proposed project, as described in Section 2.0, Project Description, would construct a parking structure to replace displaced parking due to construction activity throughout the campus. The proposed project would address the current parking supply and demand imbalance and reduce the impacts of future loss of parking spaces.

In order to operate the structure, it is not anticipated that new staff would be hired. In addition, parking structures do not increase population on their own. The people that would utilize the parking structure are generated by the land uses accessible from the structure, such as the uses within the Health Sciences Quad. Therefore, the proposed project would not directly result in an increase in faculty, staff, student, or visitor populations.

Therefore, the proposed project would not induce unplanned population growth and no impact would occur. 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
<i>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:</i>					
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 above and in Section 4.11, Population and Housing, the proposed project would not directly increase the campus population and would not hire additional staff to operate the structure. Therefore, the campus population would not surpass what was planned for in the 2007 LRDP and analyzed in its EIR that would result in an increased 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, parking structures as a use do not directly increase populations. Therefore, the campus population would not surpass what was planned for in the 2007 LRDP and analyzed in its EIR that would result in an increased 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 directly increase the campus population. 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 above and in Section 4.11, Population and Housing, the proposed project would not directly increase the campus population. Therefore, the proposed project would not require the need for park facilities. Additionally, 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 overall campus population. 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 directly increase the campus population. Furthermore, public facilities, such as libraries, exist

¹ http://www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC_FINAL.pdf. Accessed March 28, 2021.

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
<i>Would the project:</i>					
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: No Impact

As discussed in Section 4.11, Population and Housing, the proposed project is a parking structure and would not directly increase campus populations. Therefore, it would not result in accelerated deterioration of recreational uses on or off-campus. Additionally, 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, no impacts to recreational facilities would occur. No mitigation is required.

b) Construction of Recreational Facilities: No Impact

No recreational facilities are proposed as part of the project. Additionally, as discussed in Section 4.11, Population and Housing, the proposed parking structure would not directly increase campus populations 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 a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?					X
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?					X
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X	
d) Result in inadequate emergency access?				X	

Discussion

Since the original CEQA, subsequent legislations have updated the CEQA guidelines to better achieve the State's efforts to improve air quality and reduce greenhouse gas emissions through transportation planning. Updated CEQA Guidelines went into effect on July 1, 2020 statewide that include sections created by Senate Bill 743 (SB 743) changing the metric to evaluate transportation impacts from Level of Service (LOS) to Vehicle Miles Traveled (VMT). In compliance with the updated CEQA Guidelines, a project-level VMT study was prepared by Stantec Consulting Services, Inc. and is included as Appendix D.

a) Conflict with a Circulation Plan: No Impact

As discussed in Section 2.0, Project Description, and below in Section 4.15(b), the project is proposing to add a left turn lane at the California Avenue and Theory intersection located within the City of Irvine to provide access to the site, which would be finalized during the design phase. In addition, the intersection would also be improved by adding traffic signals and controls. As such, UCI would coordinate with City of Irvine staff and provide engineering drawings during the design phase of the project to ensure that any improvements adhere to the City roadway design requirements. The City would review, provide comments, negotiate any right-of-way acquisitions and/or maintenance agreements, and administer construction permits, as needed, in order to construct these improvements. Therefore, with coordination with the City of Irvine, no impacts to the roadway circulation plan would occur.

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 TDMs, UCI has achieved the highest average vehicle ridership for an employer greater than 3,000 within the SCAQMD area, which includes Orange, Los Angeles, and Riverside Counties. The proposed project would not require the removal of any transit routes or bicycle paths, and would not hinder implementation of TDM measures on the campus as discussed further below in Section 4.15(b). Therefore, the proposed project would not conflict with alternative transportation plans, policies and programs and no impact would occur. No mitigation is required.

b) Conflict with CEQA Guidelines Section 15064.3, Analyzing Vehicle Miles Traveled: No Impact

Significance Thresholds

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 instead use VMT. OPR's Technical Advisory provides guidance on evaluating transportation impacts and is the guidance on which this analysis is based on.

Prior to undertaking a full VMT analysis, OPR's Technical Advisory 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." The proposed project was evaluated using the screening criteria recommended in both OPR's Technical Advisory and the City of Irvine's VMT Guidelines. The screening criteria used in this analysis is shown in Table 4.15-1.

OPR's Technical Advisory recommended significance thresholds for identifying transportation impacts are generally categorized by residential development, office development, retail development, land use plans and transportation projects. The proposed project would construct a parking structure which does not fall into the general categories listed above. OPR's Technical

Advisory and the City of Irvine's VMT Guidelines does not provide recommendations for evaluating unique projects such as a parking structure, therefore in addition to the screening criteria, a qualitative analysis has been conducted.

The proposed project's ability to achieve the VMT metric's statutory goals related to the development of multimodal transportation networks, a diversity of land uses, RTP/SCS consistency, and the reduction of greenhouse gas emissions is also evaluated.

Table 4.15-1
VMT Significance Criteria

Category	Criteria/Screening	Threshold
1. Screening Thresholds	<p>OPR's Technical Advisory and the City of Irvine's VMT Guidelines provides screening thresholds for land use projects. These screening thresholds include:</p> <p>Trip generation screening – Small projects can be screened out from completing a full VMT analysis.</p> <p>Map-based screening – Projects located in areas with low VMT can be screened out from completing a full VMT analysis.</p> <p>Proximity to transit – Projects within 0.5 mile of a major transit stop or stops along a high-quality transit corridor reduce VMT and therefore can be screened out from completing a full VMT analysis. Four other criteria must be met regarding Floor Area Ratio, parking, affordable housing units, and consistency with the applicable SCS.</p> <p>Locally-serving retail – Retail that is 50,000 square feet or smaller are generally considered locally serving and can be screened out from completing a full VMT analysis.</p> <p>Affordable residential development – 100% affordable housing in infill locations can be screened out from completing a full VMT analysis.</p> <p>Evaluate the Project using the screening thresholds.</p>	<p>1. Per OPR Technical Advisory, if the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact. City of Irvine uses a threshold of 250 trips/day.</p> <p>2. Per OPR Technical Advisory, if the Project is in a low VMT area, the Project is assumed to have a less than significant impact. The City of Irvine does not use the map-based screening criteria.</p> <p>3. Per OPR Technical Advisory, If the Project is within 0.5 mile of a high-quality transit stop/corridor, and meet the other requirements, the Project is assumed to have less than significant impact. The City of Irvine has identified two Transit Priority Areas (TPA) in the City.</p> <p>4. Per OPR Technical Advisory, if the retail component is less than 50,000 then the retail is assumed to have a less than significant impact. The City of Irvine considers retail of 100,000 or smaller as locally serving.</p> <p>5. Per OPR Technical Advisory and the City of Irvine, if the Project consists of 100% affordable units and located in infill, then the Project is assumed to have less than significant impact.</p>
2. Multi-modal transportation	<p>Providing alternative modes of transportation that has high accessibility and connectivity reduces VMT, single occupancy vehicles (SOV), and VMT per capita. Identify existing pedestrian, bicycle and transit facilities that provide alternative modes of transportation in place of a SOV.</p> <p>Evaluate the accessibility and connectivity of pedestrian,</p>	<p>If the Project restricts access or alters a route, this may indicate a significant impact.</p>

	bicyclist, and transit facilities around the Project site.	
3. Diversity of land uses	<p>Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT.</p> <p>Evaluate the surrounding uses of the Project and the interaction between land use and transportation.</p>	If the Project is complementary and consistent with the existing land use patterns, then the Project is assumed to have a less than significant impact.
4. RTP/SCS Consistency	<p>The purpose of the RTP/SCS is to evaluate regional land use patterns and transportation systems to achieve the State's target GHG emissions reduction goals.</p> <p>Evaluate if the Project is consistent with the RTP/SCS. The Project's cumulative effects are determined through consistency with the RTP/SCS.</p>	If the Project is consistent with the RTP/SCS, then the Project would have less than significant cumulative impact. If the Project is inconsistent then the inconsistency should be evaluated for a significant impact on transportation.
5. Reduction of greenhouse gas emissions	<p>Identify existing TDM measures that increase vehicle efficiency, reduce amount of vehicle travel, improve human health, reduce vehicle crashes, improve air quality, improve physical and mental health, and encourage use of transit.</p> <p>Evaluate if the Project would eliminate or reduce the existing TDM measures.</p>	If the Project is not anticipated to eliminate or reduce any existing TDM measures, the Project is assumed to have a less than significant impact.

Transportation Impact Analysis

Screening Evaluation

Lead agencies may presume a project has a less than significant impact on VMT using a screening criteria that considers the project size, location in a low VMT area, transit availability and provision of affordable housing.

Trip Generation Screening

OPR's Technical Advisory recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than significant transportation impact. The City of Irvine Guidelines utilizes a threshold of 250 trips per day.

In general, parking lots and parking structures do not generate traffic on their own. The traffic that utilizes parking lots and structures is drawn to the land uses associated with the parking lot/structure. In this case, the Project would provide parking primarily for the Health Sciences Quad area but may also be used by students, staff, faculty, and visitors for other campus destinations. Specifically, the project is located in the Health Sciences Quad in the West

Campus; however, the project may be used to visit various areas throughout the campus. If the project is not constructed, students, staff, faculty, and visitors would utilize other parking locations. In general, the project would not increase or decrease the number of trips visiting the campus. Rather, by constructing a parking structure that provides high accessibility to alternative modes of transportation (i.e., adjacent pedestrian and bicycle paths and transit stops) to travel around the campus, VMT would be reduced by reducing the amount of driving on-campus.

Since the proposed project would not generate traffic on its own, the project's impact can be presumed to be less than significant.

Map-Based Screening

OPR's Technical Advisory recommends projects located in areas with low VMT per capita can be presumed to have less than significant impact to VMT. The City of Irvine does not use a map-based resource. Therefore, this screening threshold has not been used for the proposed project.

Proximity to High Quality Transit

OPR's Technical Advisory suggests that a project can be presumed to have a less than significant impact on VMT if the project is within a half-mile of an "existing major transit stop or an existing stop along a high-quality transit corridor." A major transit stop is defined as "the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods." A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. Based on the definition of a high-quality transit corridor, the project is located within a half mile of a high-quality transit corridor and can be presumed to have a less than significant impact on VMT.

Anteater Express is UCI's transit system that provides transportation to various areas on and off the UCI Campus. Anteater Express is an attractive mode of transportation because of the short distance stops and fare. UCI also provides enhanced services that increases the ease of using the shuttle service such as the on-line Live Bus Tracking system that gives real time data of the buses in service. An application is also available for download that allow users to view the shuttle's location.

UCI runs Anteater Express services in the vicinity of the project. An Anteater Express stop is located less than a half mile from the project on West Peltason Drive just west of Bison Avenue, providing access to the Anteater Express M Line. The shuttle stop is located at a bus turnout on the north side of the roadway (westbound on West Peltason Drive). Headways for the M Line are 7 minutes during the morning, 10 minutes during the afternoon to 7:00pm, and 25 minutes after 7:00pm. Therefore, the Anteater Express M line would be considered a high-quality transit corridor since service intervals are no longer than 15 minutes during peak on-campus commute hours.

Parking behavior for a University, such as UCI, differs from parking structures for a typical residential development or office building development in that most users of the parking structure park once and use alternative modes of transportation to get in and around the campus, provided that alternative modes of transportation are accessible. When students, faculty and staff visit the campus, it is typical that the visitor parks in a parking lot or structure for an extended period. A person may walk, bike, or use the shuttle to get to their destination on-campus rather than returning to their vehicle to drive to their next on-campus destination. This type of trip-making pattern reduces VMT in comparison to using a personal vehicle to get to each destination. The accessibility of having a shuttle stop with headways of 7 to 10 minutes throughout the day encourages transit usage and reduces single occupancy vehicle trips.

In addition, four supplementary criteria would need to be met under this screening category:

- When considering floor area ratio for a development, parking structures are typically excluded¹.
- The amount of spaces proposed for the project does not include more parking than required by the UCI campus.
- The project is consistent with the RTP/SCS.
- Lastly, the project does not replace affordable residential units.

Since the project is located within a half mile of a stop along a high-quality transit corridor, the project's impact can be presumed to be less than significant.

Affordable Housing

OPR's Technical Advisory and the City of Irvine's Guidelines state that affordable housing projects located in infill locations can be assumed to have a less than significant impact. The proposed project does not apply to this screening threshold.

Multimodal Transportation Networks Analysis

A qualitative analysis has been conducted to evaluate the project's compliance with the VMT statutory goals.

A goal of utilizing the VMT metric is to facilitate the "development of multimodal transportation networks." A multimodal transportation network provides opportunities for people to safely get to their destinations by means other than a single occupancy vehicle. Multimodal networks are a component of a "Complete Street" that address the needs of pedestrians, bicyclists, transit riders and motorists. OPR's Technical Advisory notes that the increase in transit ridership "should not

¹ Chapter 2.7: Modernization of Transportation Analysis for Transit-Oriented Infill Project, 2019 CEQA Statute & Guidelines, Association of Environmental Professionals, 2019.

be considered an adverse impact,” noting that while the increase in ridership may slow transit service, it adds accessibility, destinations and proximity. When choices in transportation are available, single occupancy vehicle VMT is reduced. Projects that block access, remove, or interfere with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

The project is accessible by Class II bicycle lanes on California Avenue. There are also bicycle lanes on the nearby roadways such as Bison Avenue and Academy Way. The bicycle lanes connect to the wider bicycle network in and around the UCI campus. The accessibility of bicycle facilities would encourage visitors to park their vehicle in the parking structure and bike to get to multiple destinations around the campus. Within the campus are bike accessible roadways, dedicated bike paths, and pedestrian/bike shared paths. There are also numerous bike rack locations throughout the campus.

The bike accessible roadways include facilities that are part of the City of Irvine’s bicycle network. The City of Irvine’s 2015 Active Transportation Plan shows that the existing bicycle facilities around the UCI campus, except for Campus Drive, are low stress facilities, meaning the level of stress a bicyclist feels while using the facilities are low. The low level of stress creates a more pleasurable and appealing ride that would encourage students to ride their bike to get around campus.

UCI has a robust bicycle program that promotes bicycle transportation. In addition to bicycle infrastructure, UCI has BikeUCI Ambassadors, a Bicycle Advisory Group, and Bicycle Education and Enforcement (B.E.E.P). In addition, UCI is a gold level “Bicycle Friendly University” and offers bicycle facilities, education and amenities such as bike registration, parking racks, bike festival, low cost bike sales, self-service bike repair stands and air pumping stations, and bike shops.

As previously discussed, there are transit stops within a half mile of the project site that provides an alternative mode of travel to get around the campus.

The development of the project would not remove any existing pedestrian or bicycle facilities, or shuttle/bus stops. Rather, the project would enhance such facilities through the site development design process. Pedestrian walkways and a bike path will be provided which will link California Avenue to the Health Sciences Quad. Since the project is enhancing the multimodal transportation network, the project would have less than significant impact on VMT based on the multimodal transportation threshold.

Diversity of Land uses

The project has also been evaluated with consideration to diversity of land uses. OPR’s Technical Advisory notes that new land use projects alone will not reduce VMT; however, “interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT”.

The 2007 LRDP identified general land use developments to support future campus growth, including parking growth. Development of the LRDP and the resulting mix of land use contained in the 2007 LRDP follow planning principles that reflect the desired character for the campus. The principles are as follows:

- Accommodate the physical resources needed to support strategic academic goals
- Provide access while maintaining environmental quality
- Build a cohesive academic community
- Build and maintain quality residential neighborhoods
- Establish centers of activity to promote campus life
- Maintain human scale
- Maintain planning discipline to optimize valuable land resources
- Manage transportation needs proactively
- Unify the campus with linkages
- Preserve and enhance open space corridors to balance campus development
- Develop high-quality edges with neighboring communities
- Promote sustainable development practices

Application of such principles has created a campus with a diversity of land uses and a complimentary transportation network that has VMT reducing outcomes. This is reflected in the 2017 student survey that indicated 79 percent of students are using sustainable transportation methods such as walking, biking, transit, carpooling, or vanpooling. If a future project is contained within the LRDP or is consistent with the land use patterns of the LRDP, then the project would have less than significant impact on VMT.

The project is consistent with the 2007 LRDP, meaning this project was strategically planned to balance the uses of the campus. Therefore, since the project is consistent with the LRDP, and the LRDP was developed with sustainable development practices that balance land use, the environment and transportation, the project would have less than significant impact on VMT based on the diversity of land use screening threshold.

Regional Transportation Plan and Sustainable Community Strategies Consistency

The project has also been evaluated with consideration to consistency with RTP/SCS. Generally, a project's cumulative effects are determined through consistency with the RTP/SCS. Projects that are consistent with the RTP/SCS would have less than significant cumulative impact on

VMT.

The UCI campus is located within the SCAG MPO region. An update to the RTP/SCS was undertaken in 2019/2020 for the 2020-2045 RTP/SCS, also known as Connect SoCal. In May 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only, and the full adoption occurred on September 3, 2020.

For the Connect SoCal effort, SCAG utilized a "Bottom-Up Local Input and Envisioning Process" where feedback is solicited from local jurisdictions on localized information such as base land use and anticipated socio-economic growth (populations, employment, household). This information is typically a component of the City's General Plan.

The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive update in 2000. Since then, the City has been growing and is now in the process of Phase 2 of their comprehensive General Plan Update. The City of Irvine and UCI have a long-standing history of cooperation regarding campus planning, and future growth and coordination has been made between UCI's LRDP and the City's General Plan. Therefore, growth assumed in UCI's LRDP is reflected in the City's General Plan and this information is supplied to SCAG during their Bottom-Up Local Input and Envisioning process. The project is fully accounted for in the growth allocated by the 2007 LRDP.

Therefore, since the project falls within the 2007 LRDP, the project would be consistent with the latest RTP/SCS, Connect SoCal, and would have a less than significant cumulative impact on transportation based on this consistency criteria.

TDM Strategies for the Reduction of Greenhouse Gas Emissions Analysis

A goal of utilizing the VMT metric for evaluation of transportation impacts is to reduce GHG levels. TDM measures are important and effective tools to reduce GHG, increasing vehicle efficiency and reducing the amount of VMT. UCI proactively utilizes TDM measures through UCI's Sustainable Transportation Program, which complies with the UC's Sustainable Transportation Policy Goals, and the project has been developed with these policy goals.

UCI Sustainable Transportation Program

UCI proactively utilizes TDM measures. UCI's Sustainable Transportation Program utilizes various TDM measures and was created with the goal to "reduce the total number of vehicle trips made to the campus by faculty, staff and students and reduce commute emissions". Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.11 (based on 2019 SCAQMD survey), the highest of any employer greater than 3,000 in the Orange, Los Angeles, and Riverside County SCAQMD. UCI's annual investment in TDM measures is approximately \$5 million. TDM measures result in a significant reduction of VMT. UCI's Transportation and Distribution Services offers a number of sustainable commuting options as listed below:

- Carpool matching through WAZEpool (an on-demand carpool matching service)

- Carpool incentive program for employees and graduate students (free parking for carpools)
- Ride-share through Zimride (a private ride-sharing network for UCI)
- OC Vanpools (also known as “super carpools” subsidized in part by OCTA and operated through a third-party provider)
- Guaranteed Ride Home Program
- “University Pass” transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes
- 20% rebate on commuter Metrolink and Amtrak train passes
- Convenient cost-effective options to reduce monthly transportation expenses for University students and employees
- UCI – OC University Bus Program (provides unlimited access to the OCTA bus system)
- Zipcar car sharing program with 16 cars and over 6,000 on campus members (the University’s carshare)
- UCI Zotwheels bike ridesharing service (currently offline due to expansion)
- Anteater Express (UCI’s campus shuttle service with live bus tracking), in 2019 UCI shuttle system ridership was 2.2 million passengers at a cost of \$2.8 million
- UCI Medical Campus shuttle route (provides rides to UCI Medical Hospital located outside of the campus)
- Bicycle program highlights include BikeUCI Ambassadors, the most comprehensive peer-to-peer outreach program for biking in the country; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.

The TDM strategies listed above are consistent with CAPCOA’s comprehensive list of TDM mitigation measures that reduce GHG emissions. The Sustainability Tracking, Assessment & Rating System (STARS) website summarizes the results of a survey of UCI students and employees conducted in 2017. The purpose of the survey was to evaluate student and employee commute habits. The survey concludes that 33 percent of employee survey respondents commute with only the driver in the vehicle (single occupancy vehicle), 18 percent vanpool or carpool, 4 percent take the campus shuttle or public transportation, less than one percent use a motorcycle or scooter, 5 percent telecommute, and 40 percent walk, bicycle, or use other non-motorized means. Overall, this shows that approximately 67 percent of employees use more

sustainable commuting options. This can be attributed to the several TDM measures listed above.

The project would not eliminate any existing TDM measures, but rather, the availability of the campus shuttle service, bikeshare, and car share offered through UCI's Sustainable Transportation Program reduces auto dependency for students, faculty, and staff, thereby reducing on-campus VMT. Therefore, the project would have less than significant impact on VMT since the project is not anticipated to eliminate or reduce any existing TDM measures offered by UCI's Transportation and Distribution Service (discussed above).

UC Sustainable Transportation Policy

UCI's Sustainable Transportation Program is used to achieve the UC's Sustainable Transportation Policy Goals. Specific to commute trips, the UC Sustainable Transportation Policy is as follows:

By 2025, each location shall strive to reduce its percentage of employees and students commuting by single-occupancy vehicles (SOV) by 10 percent relative to its 2015 SOV commute rates. By 2050, each location shall strive to have no more than 40 percent of its employees and not more than 30 percent of all employees and students commuting to the location by SOV.

By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles by zero-emission vehicles (ZEV). By 2050, each location shall strive to have at least 30 percent of commuter vehicles by ZEV.

The progress of each UC campus towards the goals stated above is continuously monitored. The policy goals above are a part of UCI's LRDP EIR mitigation measures and have been implemented through the UCI Sustainable Transportation Program and are continuously monitored for progress to achieve the goals by 2025 and 2050. The current TDM programs that are in place have reduced SOV commute and the project would not eliminate or reduce any existing TDM programs.

Therefore, the proposed project would not conflict with CEQA Guidelines section 15064.3, subdivision (b), and no impact would occur. No mitigation is required.

c) *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). Additionally, roadway improvements within the City of Irvine's jurisdiction would be reviewed and approved by the City Traffic Engineer. Therefore, impacts due to potential hazards of a design feature would be less than significant. No mitigation is required.

d) Inadequate Emergency Access: Less than Significant Impact

Construction staging is proposed to occur on the project site. 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.

As described in Section 2.0, Project Description, operational vehicle access to the project site would occur via the driveway currently under construction at California Avenue and College of Health Sciences entryway to the south of the project and the proposed driveway on California Avenue and Theory Drive to be improved as part of the project. On-site access, such as the pedestrian and bicycle paths, would be constructed to increase accessibility from the project site to the Health Sciences Quad, transit options, and the rest of the campus. Fire access would be also included in the project design to allow emergency vehicle access to the project site in compliance with the UCI Fire Marshal review. Therefore, impacts due to inadequate emergency access during project operation would be less than significant. 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
<i>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:</i>					
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, archaeological, paleontological, and tribal resources.

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

Recorded archaeological resources located within the UCI campus are summarized in Table 4.4-1 of the 2007 LRDP EIR. To date, no archaeological sites have been discovered and recorded on the project site. There is some possibility, however, that unknown archaeological remains could occur beneath the ground surface (LRDP EIR, page 4.4-4). Earth moving activities could possibly uncover previously undetected archaeological remains associated with prehistoric cultures, and a loss of a significant archaeological resource could result if such materials are not properly identified. 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, impacts would be less than significant. No additional mitigation is required.

b) *Resources Significance to a California Native American Tribe: Less than Significant Impact with Project-level Mitigation Incorporated*

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 March 29, 2021. UCI did not receive notification from either entity to initiate consultation regarding the project or the site. However, as is the practice for all major capital projects, UCI will continue to work with the tribes at their request. Additionally, UCI would implement mitigation measures Cul-1C, Cul-4A, and TCR-1, which would require an archaeological monitor during earthwork and procedures to be taken if cultural resources or tribal cultural resources are discovered. With the implementation of LRDP EIR mitigation measure Cul-1C and Cul-4A and project-specific TCR-1, impacts to tribal cultural resources would be reduced to a less than significant level.

Mitigation Measures

TCR-1: If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction all work shall halt within a 50-foot radius of the discovery, the Construction Manager shall immediately notify UCI Physical and Environmental Planning and Facilities Management. The Construction Manager shall also immediately coordinate with the tribal monitor and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology and subject to approval by UCI to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to UCI in writing for UCI's review and approval. If recommended by the qualified professional and consulting tribes, and approved by UCI, this may include modification of the no-work radius.

The professional archaeologist must make a determination, based on professional judgement and supported by substantial evidence, within one business day of being notified, as to whether or not the find represents a cultural resource or has the potential to be a tribal cultural resource. The subsequent actions will be determined by the type of discovery, as described below. These include:

1) a work pause that, upon further investigation, is not actually a discovery and the work pause was simply needed in order to allow for closer examination of soil (a “false alarm”); 2) a work pause and subsequent action for discoveries that are clearly not related to tribal cultural resources, such as can and bottle dumps, artifacts of European origin, and remnants of built environment features; and 3) a work pause and subsequent action for discoveries that are likely related to tribal cultural resources, such as midden soil, bedrock mortars, groundstone, or other similar expressions.

Whenever there is question as to whether or not the discovery represents a tribal resource, culturally affiliated tribes shall be consulted in making the determination. The following processes shall apply, depending on the nature of the find, subject to the review and approval of UCI:

Response to False Alarms: If the professional archaeologist in consultation with the tribal representative determines that the find is negative for any cultural indicators, then work may resume immediately upon notice to proceed from UCI’s representative. No further notifications or tribal consultation is necessary, because the discovery is not a cultural resource of any kind. The professional archaeologist shall provide written documentation of this finding to UCI.

Response to Non-Tribal Discoveries: If at the time of discovery a professional archaeologist and tribal representative determines that the find represents a non-tribal cultural resource from any time period or cultural affiliation, UCI shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures.

Response to Tribal Discoveries: If the find represents a tribal or potentially tribal cultural resource that does not include human remains, the tribe and UCI shall be notified. UCI will consult with the tribe on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within a 50-foot radius until UCI, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction.

Response to Human Remains: If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641) and shall notify UCI and the Orange County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the Public Resources Code). The designated MLD

will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Public Resources Code § 5097.94 provides structure for mediation through the NAHC if necessary. If no agreement is reached, UCI shall rebury the remains in a respectful manner where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the Orange County Clerk's Office (AB 2641). Work shall not resume within the no-work radius until UCI, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

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
<i>Would the project:</i>					
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 foreseeable 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 10-inch line located in the College of Health Sciences entryway, recycled water through an existing 8-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 to the south 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. Furthermore, 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
<i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>					
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 roadways 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. Road closures within California Avenue would be coordinated with the City of Irvine. Therefore, the proposed project would not substantially impair an adopted emergency response plan and impacts would be less than significant. 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 is relatively flat and surrounded on three sides with urban development, including vehicle access from California Avenue and a fire water line located in the College of Health Sciences entryway. The area north of the project site is currently undeveloped and as discussed in Section 4.3, Biological Resources, contains disturbed and nonnative grassland. However, as discussed in 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 proposed project is an unenclosed parking structure and 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). 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 mapping by CalFire, the campus is not located in a LRA Very High Fire Hazard Severity Zone

¹ h <https://em.uci.edu/pdf/emergency-operations-plan.pdf>. Accessed April 5, 2021.

(VHFHSZ).² The project would not construct 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 roads and utilities that would be connected within developed areas to the south and west of the project site. 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.

² <http://egis.fire.ca.gov/FHSZ/>. Accessed April 5, 2021.

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 project site is undeveloped and has the potential for wildlife to occur 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 surveying prior to the start of construction, monitoring wildlife during construction, and conducting pre-construction nesting bird surveys. 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 project-specific mitigation measure TCR-1, which requires an archaeologist/paleontologist on-site during earthwork and procedures in the event a find is discovered 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
UCI Health Sciences Parking Structure Project
at the University of California, Irvine



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APPENDICES

Appendix A: Air Quality Data

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
CY	Cubic yards
DPM	Diesel particulate matter
EHS	Environmental Health and Safety
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
H ₂ S	Hydrogen sulfide
IGP	Irvine General Plan
Pb	Lead
LST	Local significance threshold
LRDP	Long Range Development Plan
µg/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 ₂ H ₃ Cl	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) Health Sciences Parking Structure Project (“Project” or “proposed Project”). 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 based in Orange County (County), in the City of Irvine (City) within the UCI campus; refer to **Exhibit 1: Regional Vicinity**. The 6.1-acre Project site is located in UCI’s West Campus to the east of California Avenue; refer to **Exhibit 2: Site Vicinity**. Main access to the Project would be made via the existing Theory and California Avenue intersection where the Project would construct a fourth leg and install a traffic signal. A secondary access would be available via vehicular roadways from within the UCI Health Sciences Quad.

1.2 Project Description

The proposed Project would construct an approximately six-story parking structure, approximately 650,000 square feet, including 1,900 parking spaces on the site within the Health Sciences Quad on the UCI West Campus. The structure would provide vehicular access to the Health Sciences Quad for faculty, staff, students, and off-campus visitors and patients. Additional proposed improvements include pedestrian and bicycle paths, landscaping, vehicular arrival court and drop-off loop, and a pedestrian bridge connecting to the College of Health Sciences; refer to **Exhibit 3: Conceptual Site Plan**.

1.3 Project Construction and Phasing

Project construction is anticipated to occur beginning in August 2021 and last approximately 16 months, ending in November 2022. The Project site is vacant and demolition would not be required. Grading for the proposed improvements would require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

A map of Southern California highlighting the project site location. The map shows major cities including Palmdale, Los Angeles, San Bernardino, Riverside, Irvine, San Clemente, Temecula, and Escondido. Major highways are marked with their respective shields (Interstates 5, 10, 15, 210, 215, 405, 605, 710, 78, 805, 94, 95, 96, 97, 98, 99, 101, 103, 105, 107, 108, 109, 110, 118, 125, 138, 140, 148, 152, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940,

Exhibit 2: Site Vicinity

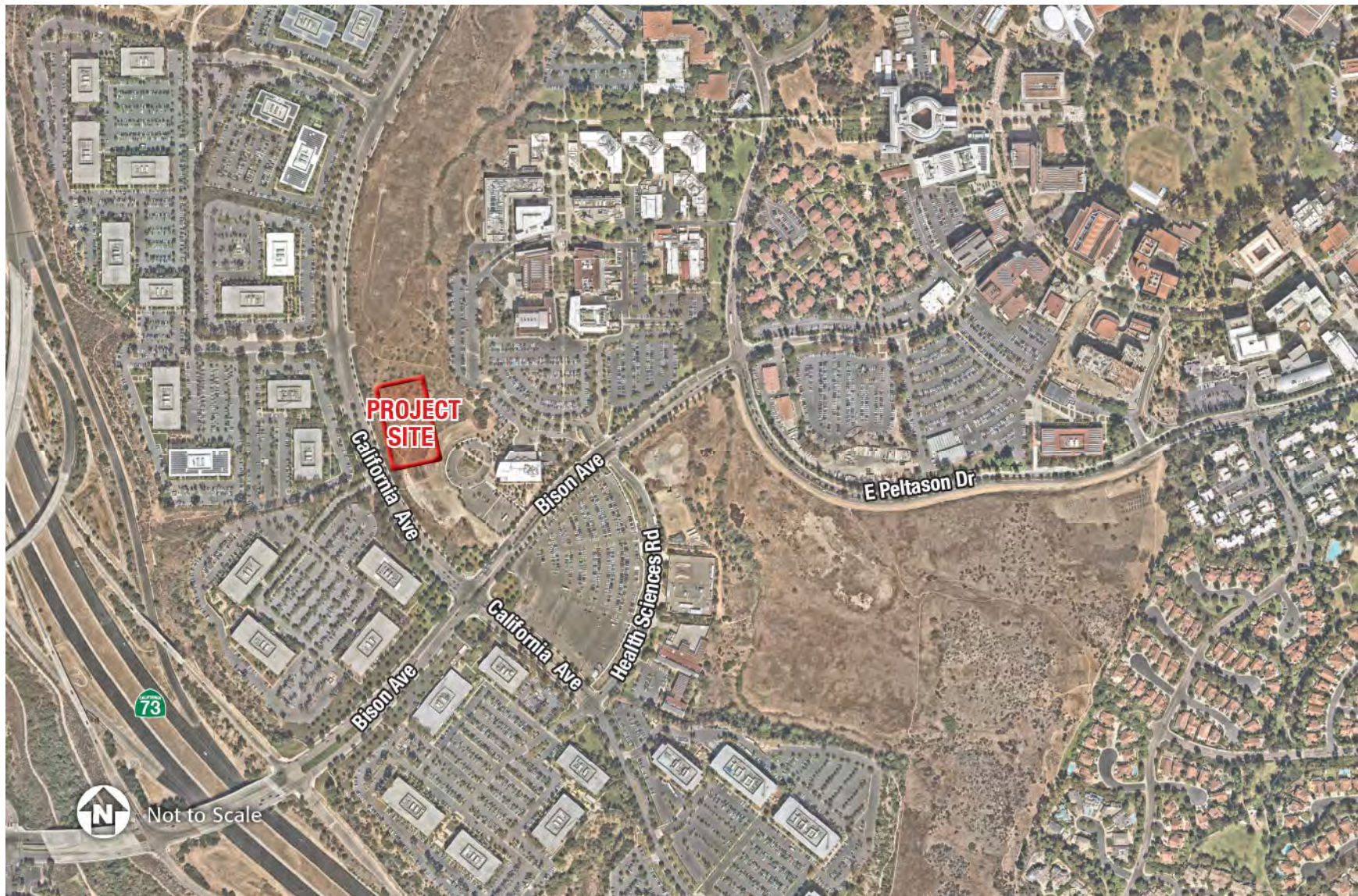
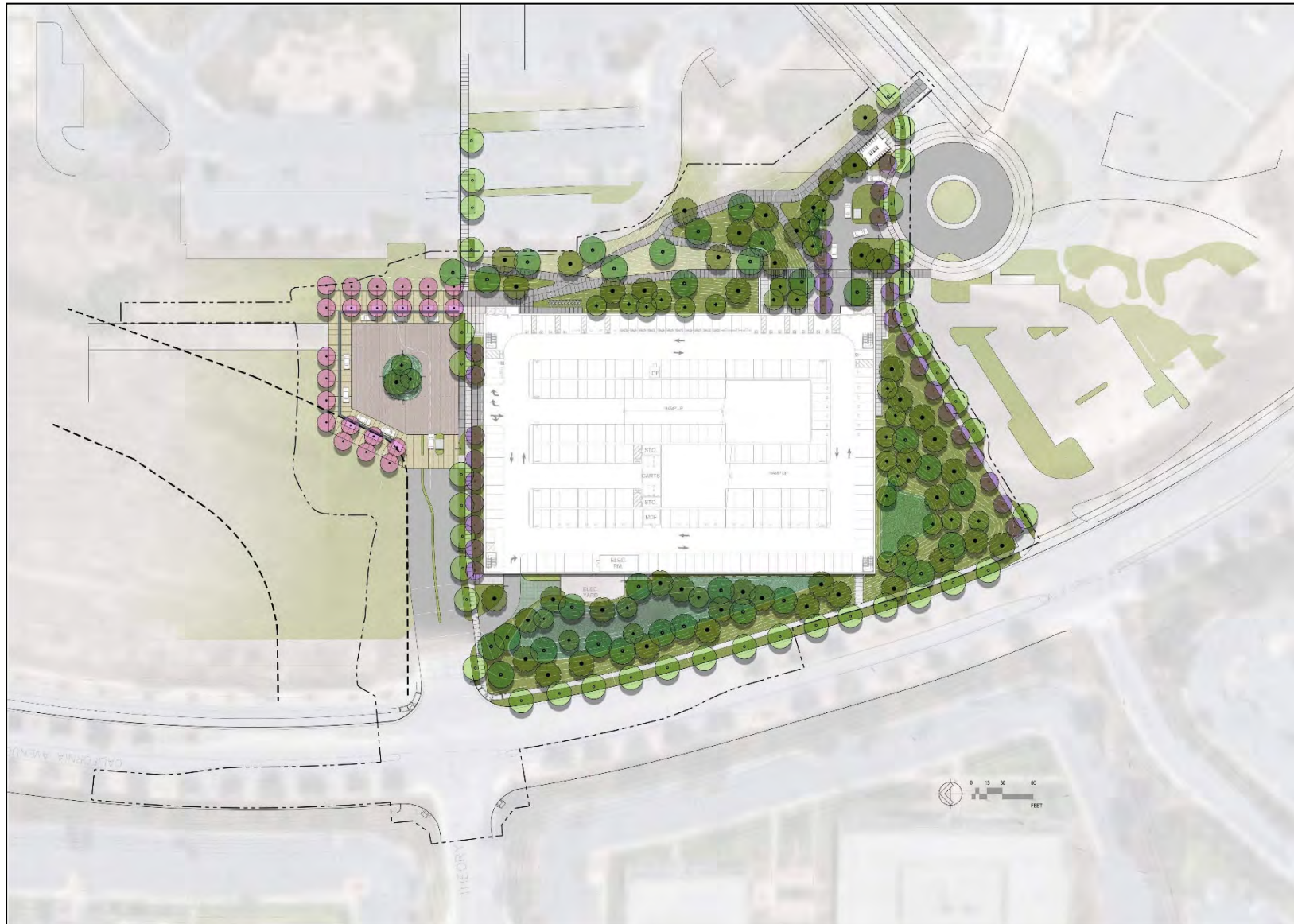


Exhibit 3: Conceptual Site Plan



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 perimeter¹. 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 (SO₂), coarse particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead are primary air pollutants. Of these, CO, NO_x, SO₂, PM₁₀, 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 (O₃) is formed by a chemical reaction between ROG and NO_x in the presence of sunlight. O₃ and nitrogen dioxide (NO₂) 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.
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 (CAPCOA), Health Effects, http://www.capcoa.org/health-effects/ , Accessed October 8, 2020.		

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 (O₃), Nitrogen Dioxide (NO₂), and particulate matter (PM₁₀ 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 O₃ and NO₂ is the Costa Mesa – Mesa Verde Drive Monitoring Station (located approximately 4.7 miles northwest of the Project). The closest monitoring station that measures PM₁₀ 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 2016 to 2018 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	2016	2017	2018
Ozone (O₃)¹			
1-hour Maximum Concentration (ppm)	0.090	0.088	0.121 ²
8-hour Maximum Concentration (ppm)	0.069	0.080	0.088 ²
<i>Number of Days Standard Exceeded</i>			
CAAQS 1-hour (>0.09 ppm)	0	0	10 ²
NAAQS 8-hour (>0.070 ppm)	0	4	9 ²
Carbon Monoxide (CO)¹			
1-hour Maximum Concentration (ppm)	2.06	1.72	1.20 ²
<i>Number of Days Standard Exceeded</i>			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0
Nitrogen Dioxide (NO₂)¹			
1-hour Maximum Concentration (ppm)	0.0598	0.0453	0.0617
<i>Number of Days Standard Exceeded</i>			
NAAQS 1-hour (>0.100 ppm)	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
Particulate Matter Less Than 10 Microns (PM₁₀)²			
National 24-hour Maximum Concentration	59.0	58.2	55.6
State 24-hour Maximum Concentration	59.3	58.2	55.6
State Annual Average Concentration (20 µg/m ³)	–	18.8	19.1
<i>Number of Days Standard Exceeded</i>			
NAAQS 24-hour (>150 µg/m ³)	0	0	0
CAAQS 24-hour (>50 µg/m ³)	1	1	1
Particulate Matter Less Than 2.5 Microns (PM_{2.5})²			
National 24-hour Maximum Concentration	24.7	19.5	38.9
State 24-hour Maximum Concentration	24.7	19.5	38.9
<i>Number of Days Standard Exceeded</i>			
NAAQS 24-hour (>35 µg/m ³)	0	0	1
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 reported from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam), CO Measurements were retrieved from the CARB Air Quality and Meteorological Information System (https://www.arb.ca.gov/qaweb/siteinfo.php). accessed October 12, 2020.			

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 educational institutions, Medical plaza, residential communities, 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 Health Gavin Herbert Eye Institute	265 feet to the southeast
UCI Campus Village Housing	1,500 feet to the east
UCI Health Gottschalk Medical Plaza	1,700 feet to the northeast
UCI Ayala Science Library	2,200 feet to the east
Aldrich Park	2,900 feet to the east

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, NO₂, CO, SO₂, PM₁₀, 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 ₂ S)	1 Hour	0.03 ppm (42 µg/m ³)	NA
Vinyl Chloride (C ₂ H ₃ Cl) ¹⁰	24 Hour	0.01 ppm (26 µg/m ³)	NA

Notes:

ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = 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 - PM₁₀, 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 PM₁₀ 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 PM₁₀ standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m³. The 24-hour PM_{2.5} standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³.

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 PM₁₀ 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 PM₁₀.

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 SO₂ 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 SO₂ NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO₂ NAAQS.

⁹ In December 2012, EPA strengthened the annual PM_{2.5} NAAQS from 15.0 to 12.0 µg/m³. 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 the NAAQS and CAAQS 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 ₂ S) (1 Hour Standard)	--	Unclassified
Source: South Coast Air Quality Management District, <i>Air Quality Management Plan</i> , 2016; U.S. EPA, <i>Nonattainment Areas for Criteria Pollutants (Green Book)</i> , 2020.		

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 PM₁₀ emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM₁₀ 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 431.2 (Sulfur Content of Liquid Fuels)** – This rule limits the sulfur content in diesel and other liquid fuels for the purpose of both reducing the formation of sulfur oxides and particulates during combustion and to enable the use of add-on control devices for diesel fueled internal combustion engines.
 - **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	Operational-Related
	Average Daily Emissions (pounds/day)	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, <i>South Coast AQMD Air Quality Significance Thresholds</i> , April 2019.		

Localized Carbon Monoxide

In addition to the daily thresholds listed above, the proposed Project would be subject to the NAAQS and CAAQS. These are addressed through an analysis of localized CO impacts. The significance of localized impacts depends on whether ambient CO levels near the Project site are above the NAAQS and CAAQS (the more stringent California standards are 20 ppm for 1-hour and 9 ppm for 8-hour). The SCAB has been designated as attainment under the 1-hour and 8-hour NAAQS and CAAQS for CO.

Localized Significance Thresholds

In addition to the CO hotspot analysis, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO₂, CO, PM₁₀, 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 NAAQS or CAAQS. 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 80 meters of the Project site. The LSTs in **Table 7** conservatively show the thresholds at the 25-meter distance. LSTs associated with all acreage categories are provided in **Table 7** for informational purposes. **Table 7** shows that the LSTs increase as acreages increase. It should be noted that LSTs are screening thresholds and are therefore conservative. The construction LST acreage is determined based daily acreage disturbed. The operational LST acreage is based on the total area 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 (PM₁₀) – lbs/day	Fine Particulates (PM_{2.5}) – lbs/day
1 Acre	102/102	949.2/949.2	21.4/5.8	7.4/2.6
2 Acres	134.6/134.6	1,339.2/1,339.2	29.4/7.8	10/2.6
5 Acres	197.2/197.2	2,218.6/2,218.6	51.8/12.8	15.2/4.2
Source: South Coast Air Quality Management District, <i>Localized Significance Threshold Methodology</i> , July 2008.				

4.2 Methodology

This air quality impact analysis considers construction and operational impacts associated with the proposed Project. 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. Air quality impacts were assessed according to CARB and SCAQMD recommended methodologies.

Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with proposed Project construction would generate emissions of criteria air pollutants and precursors. Daily regional construction emissions are estimated by assuming construction occurs at the earliest feasible date (i.e., a conservative estimate of construction activities) and applying off-road, fugitive dust, and on-road emissions factors in CalEEMod.

Project operations typically result in emissions of area sources (consumer products such as detergents, cleaning compounds, polishes, floor finishes, disinfectants, sanitizers, aerosol paints, etc.), energy sources (natural gas usage), and mobile sources (motor vehicles from Project generated vehicle trips). The Project would construct a parking structure that would serve the adjacent existing buildings and would not generate additional mobile source emissions. Other operational emissions from area, energy, and stationary sources were quantified in CalEEMod based on land use activity data.

As discussed above, the SCAQMD provides significance thresholds for emissions associated with proposed Project construction and operations. The proposed Project's construction and operational emissions are

compared to the daily criteria pollutant emissions significance thresholds in order to determine the significance of a Project's impact on regional air quality.

The localized effects from the Project's on-site emissions were evaluated in accordance with the SCAQMD's LST methodology, which uses on-site mass emissions rate look-up tables and Project-specific modeling. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable NAAQS and CAAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

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 NAAQS and CAAQS. 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 the NAAQS and CAAQS. 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 2020 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.

According to the SCAQMD's *CEQA Air Quality Handbook*, the purpose of the consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with CAAQS and NAAQS.

The violations to which Consistency Criterion No. 1 refers are CAAQS and NAAQS. As shown in **Table 8** and **Table 10** 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 or a City of Irvine *General Plan* (IGP) amendment. The Project is consistent with the 2007 LRDP land use designations of Transportation, Income-Producing Inclusion Area, and Open Space – General. A majority of the Project, including the parking structure and vehicular circulation elements, falls within the Transportation and Income-Producing Inclusion Area land use designations, both of which allow for parking. Some landscaping and a pedestrian path are proposed to be located within the area designated as Open Space – General, which allows for both uses. 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. As the Project is providing parking for an already entitled use, it would not exceed the population or job growth projections used by the SCAQMD to develop the AQMP. Thus, the Project is consistent with the second criterion. Impacts would be less than significant.

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 PM₁₀ 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 16 months. The Project is anticipated to require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. 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.

² University of California, Irvine, *Long Range Development Plan*, 2007.

³ University of California, Irvine, *Strategic Plan*, 2016.

Table 8: Construction-Related Emissions						
Construction Year	Pounds per Day					
	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})
2021	4.03	83.43	33.00	0.20	20.31	11.87
2022	5.52	27.21	29.62	0.09	5.28	2.05
<i>SCAQMD Threshold</i>	<i>75</i>	<i>100</i>	<i>550</i>	<i>150</i>	<i>55</i>	<i>150</i>
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

Operational emissions are typically associated with vehicle trips (motor vehicles), energy sources (natural gas use), and area sources (consumer products, architectural coatings, and landscape maintenance equipment). The Project would construct an approximately six-level parking structure within the Health Sciences Quad on the UCI West Campus which serves the adjacent existing medical offices and educational institutions; hence, this Project would not generate additional vehicle trips and no stationary sources are proposed. Therefore, operational emissions are less than significant.

Cumulative Construction Emissions

The SCAB is designated nonattainment for O₃, PM₁₀, and PM_{2.5} for the CAAQS and nonattainment for O₃ and PM_{2.5} for the NAAQS. 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 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 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 NAAQS and CAAQS. 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 and, inversely, emission volumes below the SCAQMD operational thresholds are not cumulatively considerable.

The Project would not generate new vehicle trips and as a result, the Project's operational emissions would not result in a 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 a cumulatively considerable net increase of any nonattainment criteria pollutant.

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 receptor to the Project site is an eye institution located approximately 265 feet (80 meters) southeast of the Project site. 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 9: Equipment-Specific Maximum Daily Soil Disturbance Rates**, is used to determine the maximum daily disturbed acreage for comparison to LSTs.

Construction Phase	Equipment Type	Equipment Quantity	Acres Disturbed per 8-Hour Day	Operating Hours per Day	Acres Disturbed per Day
Site Preparation	Tractors	4	0.5	8	2
	Graders	0	0.5	8	0
	Dozers	3	0.5	8	1.5
	Scrapers	0	1.0	8	0
Total Acres Graded per Day					3.5

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

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, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD produced look-up tables (i.e., screening thresholds) for projects that disturb areas less than or equal to 5 acres in size. Project construction is anticipated to disturb a maximum of 3.5 acres in a single day during the site preparation phase. As the LST guidance provides thresholds for projects disturbing 1-, 2-, and 5-acres in size and the thresholds increase with size of the site, the LSTs for a 3.5-acre threshold was interpolated and utilized for this analysis.

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 receptor to the Project site is an eye institution located approximately 265 feet (80 meters) southeast of the Project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, LSTs screening thresholds for receptors located at 80 meters were interpolated and utilized for this analysis. **Table 10: Localized Significance of Construction Emissions**, presents the results of localized emissions during Project construction. **Table 10** 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.

Table 10: Localized Significance of Construction Emissions				
Construction Activity	Pounds per Day			
	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM₁₀)	Fine Particulate Matter (PM_{2.5})
Site Preparation (2021)	40.50	21.15	9.77	6.13
Grading (2021)	24.74	15.86	4.05	2.52
Building Construction (2021)	17.43	16.58	0.96	0.90
Building Construction (2022)	15.62	16.36	0.81	0.76
Paving (2022)	11.12	14.58	0.57	0.52
Architectural Coating (2022)	1.41	1.81	0.08	0.08
<i>SCAQMD Localized Screening Threshold (adjusted for 3.5 acres at 80 meters)</i>	<i>165.9</i>	<i>1,778.9</i>	<i>40.6</i>	<i>12.60</i>
Exceed SCAQMD Threshold?	No	No	No	No
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

Localized Operational Significance Analysis

The operational LST analysis only includes on-site sources. The Project would construct an approximately six-level parking structure within the Health Sciences Quad on the UCI West Campus. As noted above, the Project would serve the existing adjacent medical offices and educational institutions and would not generate new vehicle trips or stationary sources. Therefore, impacts would be less than significant in this regard.

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). The Friant Ranch project was a 942-acre Specific Plan that involved a commercial master planned community of approximately 2,500 dwelling units and extensive commercial supporting development. The anticipated air quality impacts resulting from this development included significant and unavoidable emissions of multiple criteria pollutants (including significant emissions of both primary O₃ precursors [NO_x and ROGs]) at levels that exceeded the daily thresholds of significance. As noted above, the Project's operational emissions would not exceed the SCAQMD's significance thresholds.

The SCAQMD has set its CEQA significance thresholds based on the FCAA, which defines a major stationary source (in extreme O₃ nonattainment areas such as the SCAB) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program⁴ was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based NAAQS. The NAAQS establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's LSTs and mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

NO_x and ROG are precursor emissions that form O₃ in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so O₃ may be formed at a distance downwind from the sources. Breathing ground-level O₃ can result in health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily O₃ concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that O₃ can make asthma symptoms worse and can increase sensitivity to asthma triggers.

According to the SCAQMD's 2016 AQMP, O₃, NO_x, and ROG have been decreasing in the SCAB since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled in the SCAB continue to increase, NO_x and ROG levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions from electric utilities have also decreased due to the use of cleaner fuels and renewable energy. The 2016 AQMP demonstrates how the SCAQMD's control strategy to meet the 8-hour O₃ standard in 2023 would lead to sufficient NO_x emission reductions to attain the 1-hour O₃ standard by 2022. In addition, since NO_x emissions also lead to the formation of PM_{2.5}, the NO_x reductions needed to meet the O₃ standards will likewise lead to improvement of PM_{2.5} levels and attainment of PM_{2.5} standards.

The SCAQMD's air quality modeling demonstrates that NO_x reductions prove to be much more effective in reducing O₃ levels and will also lead to significant improvement in PM_{2.5} concentrations. NO_x-emitting stationary sources regulated by the SCAQMD include Regional Clean Air Incentives Market (RECLAIM) facilities (e.g. refineries, power plants, etc.), natural gas combustion equipment (e.g. boilers, heaters,

⁴ Code of Federal Regulation (CFR) [i.e. PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)]

engines, burners, flares) and other combustion sources that burn wood or propane. The 2016 AQMP identifies robust NO_x reductions from new regulations on RECLAIM facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_x emissions levels achievable but there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The AQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies.

The 2016 AQMP also emphasizes that beginning in 2012, continued implementation of previously adopted regulations will lead to NO_x emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_x from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_x reductions from stationary sources achieved in the decades prior to 2008.

As previously discussed, Project emissions would not exceed SCAQMD's regional thresholds for criteria pollutants (refer to above tables). In addition, localized effects of on-site Project emissions on nearby receptors would not exceed the SCAQMD's LST thresholds. 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 state or federal ambient air quality standard. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each SRA and distance to the nearest sensitive receptor. The NAAQS and CAAQS 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 NAAQS and CAAQS or cause an increase in the frequency or severity of existing violations of the NAAQS and CAAQS. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based NAAQS and CAAQS.

Carbon Monoxide Hotspots

Intersection 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 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 and Veteran Avenue intersection, one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day,

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.

It should be noted that this Project would not generate new vehicle trips as it would serve the existing adjacent medical offices and educational institutions. As the Project would not generate additional vehicle trips, it would not generate a CO hot spot.

Parking Structure Hotspots. CO concentrations are a function of vehicle idling time, meteorological conditions, and traffic flow. Parking structures may cause concern regarding CO hotspots, as they may be enclosed and have frequent vehicle operations in cold start mode. Open parking structures above ground would be naturally ventilated, preventing CO hotspots. The proposed parking structure would be open on sides and naturally ventilated which would allow for sufficient ventilation and CO hotspots would not occur. If the proposed parking structure were to be enclosed, it would be required to comply with ventilation requirements of the California Mechanical Code and the International Mechanical Code (Section 404 [Enclosed Parking Garages]), which requires mechanical ventilation systems for enclosed parking garages to operate automatically by means of CO and NO₂ detectors. Section 404.2 requires a minimum air flow rate of 0.05 cubic feet per second per square foot (cfs/sf) and the system shall be capable of producing a ventilation airflow rate of 0.75 cfs/sf of floor area⁵. Impacts regarding parking structure CO hotspots would be less than significant.

Construction-Related Diesel Particulate Matter

Construction would result in the generation of 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 dissipates 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 are located approximately 265 feet from the Project site. Project construction involves phased activities in several areas across the site and the Project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs.

Construction is subject to and would comply with California regulations (e.g., California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Sections 2485 and 2449), which reduce diesel PM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles and limit the idling of heavy-duty construction equipment to no more than five minutes. These regulations would further reduce nearby sensitive receptors' exposure to temporary and variable diesel PM emissions. Given the temporary

^{r5} International Code Council, *International Mechanical Code, Chapter 4 Ventilation*, 2015.

<https://codes.iccsafe.org/public/document/IMC2015/chapter-4-ventilation>, accessed August 15, 2018.

and intermittent nature of construction activities likely to occur within specific locations in the Project site (i.e., construction is not likely to occur in any one location for an extended time), the dose of diesel PM of any one receptor is exposed to would be limited. Therefore, considering the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area and the highly dispersive properties of diesel PM, sensitive receptors would not be exposed to substantial concentrations of construction-related TAC emissions. Impacts would be less than significant.

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?

Construction

Odors that could be generated by construction activities are required to follow SCAQMD Rule 402 to prevent odor nuisances on sensitive land uses. SCAQMD Rule 402, Nuisance, states:

A person shall not 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.

During construction, emissions from construction equipment, such as diesel exhaust, and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be temporary, are not expected to affect a substantial number of people and would disperse rapidly.

Operational

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 Project proposes the construction of a parking structure which would not involve the types of uses that would emit objectionable odors affecting substantial numbers of people. The proposed Project would not include any of the land uses that have been identified by the SCAQMD as significant odor sources.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 CUMULATIVE IMPACTS

Cumulative Setting

The cumulative setting for air quality includes the City of Irvine and the SCAB. The SCAB is designated as a nonattainment area for state standards of ozone, PM₁₀, and PM_{2.5}. For the NAAQS, the SCAB is designated as a partial nonattainment area for lead and nonattainment for ozone and PM_{2.5}, attainment and serious maintenance for federal PM₁₀ standards, and unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the NAAQS and CAAQS. However, as a result of plans and regulations, air quality in the SCAB has improved over time despite population growth and increased in vehicle usage.

Cumulative Impacts

The SCAQMD's approach to assessing cumulative impacts is based on the AQMP forecasts of attainment of the NAAQS and CAAQS in accordance with requirements of the FCAA and CCAA. As discussed above, the proposed Project would be consistent with the AQMP, which is intended to bring SCAB into attainment for all criteria pollutants. Since the Project's estimated construction and operational emissions would not exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining both NAAQS and CAAQS, cumulative impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. California Air Pollution Control Officers Association, *Health Effects*, 2018.
2. California Air Pollution Control Officers Association, *Health Risk Assessments for Proposed Land Use Projects*, 2009.
3. California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from 2016 to 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.
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7. City of Irvine, *General Plan*, 2015.
8. Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, 2015.
9. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
10. South Coast Air Quality Management District, *Air Quality Management Plan*, 2016.
11. South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
12. South Coast Air Quality Management District, *Localized Significance Threshold Methodology*, 2009.
13. University of California, Irvine, *Strategic Plan*, 2016.
14. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
15. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, 2018.
16. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.

Appendix A

Air Quality Data

UCI Health Sciences Parking Structure - Orange County, Summer

UCI Health Sciences Parking Structure

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	1,800.00	Space	6.10	650,000.00	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	Sierra Pacific Resources				
CO2 Intensity (lb/MW hr)	531.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

UCI Health Sciences Parking Structure - Orange County, Summer

Project Characteristics - Adjusted per the SCE 2019 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as $534-25 \times 0.029-298 \times 0.00617=531.4363$ to avoid double counting.

Land Use - Project acreage and square feet

Construction Phase - Anticipated Construction schedule

Off-road Equipment - No demolition phase

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Demolition -

Energy Use - Adjusted per 2019 title 24

Construction Off-road Equipment Mitigation - Adjusted per AQMD rule 403

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	230.00	234.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/22/2022	9/30/2022

UCI Health Sciences Parking Structure - Orange County, Summer

tblConstructionPhase	PhaseEndDate	6/27/2022	8/1/2022
tblConstructionPhase	PhaseEndDate	6/28/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	8/9/2021	9/7/2021
tblConstructionPhase	PhaseEndDate	7/25/2022	8/22/2022
tblConstructionPhase	PhaseEndDate	7/12/2021	6/7/2021
tblConstructionPhase	PhaseStartDate	7/26/2022	6/1/2022
tblConstructionPhase	PhaseStartDate	8/10/2021	9/8/2021
tblConstructionPhase	PhaseStartDate	7/13/2021	6/8/2021
tblConstructionPhase	PhaseStartDate	6/28/2022	8/2/2022
tblConstructionPhase	PhaseStartDate	6/29/2021	6/1/2021
tblEnergyUse	LightingElect	1.75	1.23
tblGrading	MaterialExported	0.00	120,400.00
tblLandUse	LandUseSquareFeet	720,000.00	650,000.00
tblLandUse	LotAcreage	16.20	6.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1328.16	531.44
tblTripsAndVMT	WorkerTripNumber	0.00	15.00

2.0 Emissions Summary

UCI Health Sciences Parking Structure - Orange County, Summer

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					
2021	3.9868	82.7381	32.2380	0.2032	18.2675	2.0458	20.3132	9.9840	1.8821	11.8661	0.0000	22,243.9975	22,243.9975	2.9243	0.0000	22,317.1055
2022	5.3522	27.1699	30.1037	0.0893	4.3499	0.9321	5.2820	1.1690	0.8816	2.0507	0.0000	9,006.9146	9,006.9146	0.9159	0.0000	9,029.8109
Maximum	5.3522	82.7381	32.2380	0.2032	18.2675	2.0458	20.3132	9.9840	1.8821	11.8661	0.0000	22,243.9975	22,243.9975	2.9243	0.0000	22,317.1055

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					
2021	3.9868	82.7381	32.2380	0.2032	7.9140	2.0458	9.9598	4.2962	1.8821	6.1783	0.0000	22,243.9975	22,243.9975	2.9243	0.0000	22,317.1055
2022	5.3522	27.1699	30.1037	0.0893	4.1294	0.9321	5.0615	1.1149	0.8816	1.9966	0.0000	9,006.9146	9,006.9146	0.9159	0.0000	9,029.8109
Maximum	5.3522	82.7381	32.2380	0.2032	7.9140	2.0458	9.9598	4.2962	1.8821	6.1783	0.0000	22,243.9975	22,243.9975	2.9243	0.0000	22,317.1055

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	46.75	0.00	41.31	51.48	0.00	41.26	0.00	0.00	0.00	0.00	0.00	0.00

UCI Health Sciences Parking Structure - Orange County, Summer

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	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2969	1.6800e-003	0.1841	1.0000e-005	0.0000	6.6000e-004	6.6000e-004	0.0000	6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003	0.0000	0.4199

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	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2969	1.6800e-003	0.1841	1.0000e-005	0.0000	6.6000e-004	6.6000e-004	0.0000	6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003	0.0000	0.4199

UCI Health Sciences Parking Structure - Orange County, Summer

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	5/31/2021	5	0	
2	Site Preparation	Site Preparation	6/1/2021	6/7/2021	5	5	
3	Grading	Grading	6/8/2021	9/7/2021	5	66	
4	Building Construction	Building Construction	9/8/2021	8/1/2022	5	234	
5	Paving	Paving	8/2/2022	8/22/2022	5	15	
6	Architectural Coating	Architectural Coating	6/1/2022	9/30/2022	5	88	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 33****Acres of Paving: 6.1****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 39,000 (Architectural Coating – sqft)****OffRoad Equipment**

UCI Health Sciences Parking Structure - Orange County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	0	8.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

UCI Health Sciences Parking Structure - Orange County, Summer

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	0	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	6	15.00	0.00	15,050.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	273.00	107.00	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	55.00	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 - 2021

Unmitigated Construction On-Site

[illegible]

UCI Health Sciences Parking Structure - Orange County, Summer

3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

UCI Health Sciences Parking Structure - Orange County, Summer

3.2 Demolition - 2021**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	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.3 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

UCI Health Sciences Parking Structure - Orange County, Summer

3.3 Site Preparation - 2021**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	0.0650	0.0393	0.5467	1.9000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		189.3950	189.3950	4.0600e-003		189.4963
Total	0.0650	0.0393	0.5467	1.9000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		189.3950	189.3950	4.0600e-003		189.4963

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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	7.7233	2.0445	9.7678	4.2454	1.8809	6.1263	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573

UCI Health Sciences Parking Structure - Orange County, Summer

3.3 Site Preparation - 2021**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	0.0650	0.0393	0.5467	1.9000e-003	0.1907	1.3000e-003	0.1920	0.0508	1.2000e-003	0.0520		189.3950	189.3950	4.0600e-003		189.4963
Total	0.0650	0.0393	0.5467	1.9000e-003	0.1907	1.3000e-003	0.1920	0.0508	1.2000e-003	0.0520		189.3950	189.3950	4.0600e-003		189.4963

3.4 Grading - 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					
Fugitive Dust					6.7586	0.0000	6.7586	3.3987	0.0000	3.3987			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895,1495
Total	2.2903	24.7367	15.8575	0.0296	6.7586	1.1599	7.9186	3.3987	1.0671	4.4658		2,871.9285	2,871.9285	0.9288		2,895,1495

UCI Health Sciences Parking Structure - Orange County, Summer

3.4 Grading - 2021**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	1.6423	57.9687	15.9249	0.1720	3.9701	0.1821	4.1522	1.0868	0.1742	1.2610		19,214.2399	19,214.2399	1.9921		19,264.0424
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	0.0541	0.0328	0.4556	1.5800e-003	0.1677	1.0900e-003	0.1688	0.0445	1.0000e-003	0.0455		157.8291	157.8291	3.3800e-003		157.9136
Total	1.6964	58.0015	16.3805	0.1736	4.1378	0.1832	4.3210	1.1313	0.1752	1.3065		19,372.0690	19,372.0690	1.9955		19,421.9560

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					2.8893	0.0000	2.8893	1.4530	0.0000	1.4530			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495
Total	2.2903	24.7367	15.8575	0.0296	2.8893	1.1599	4.0492	1.4530	1.0671	2.5201	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495

UCI Health Sciences Parking Structure - Orange County, Summer

3.4 Grading - 2021**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	1.6423	57.9687	15.9249	0.1720	3.7892	0.1821	3.9713	1.0424	0.1742	1.2166		19,214.2399	19,214.2399	1.9921		19,264.0424
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	0.0541	0.0328	0.4556	1.5800e-003	0.1589	1.0900e-003	0.1600	0.0423	1.0000e-003	0.0433		157.8291	157.8291	3.3800e-003		157.9136
Total	1.6964	58.0015	16.3805	0.1736	3.9481	0.1832	4.1313	1.0847	0.1752	1.2600		19,372.0690	19,372.0690	1.9955		19,421.9560

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

UCI Health Sciences Parking Structure - Orange County, Summer

3.5 Building Construction - 2021**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	0.2855	10.0381	2.7224	0.0264	0.6836	0.0209	0.7045	0.1967	0.0199	0.2167		2,876.0798	2,876.0798	0.2255		2,881.7179
Worker	0.9854	0.5962	8.2918	0.0288	3.0515	0.0198	3.0713	0.8093	0.0182	0.8275		2,872.4900	2,872.4900	0.0615		2,874.0279
Total	1.2709	10.6343	11.0142	0.0552	3.7351	0.0406	3.7757	1.0060	0.0381	1.0441		5,748.5698	5,748.5698	0.2870		5,755.7457

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

UCI Health Sciences Parking Structure - Orange County, Summer

3.5 Building Construction - 2021**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	0.2855	10.0381	2.7224	0.0264	0.6544	0.0209	0.6752	0.1895	0.0199	0.2095		2,876.0798	2,876.0798	0.2255		2,881.7179
Worker	0.9854	0.5962	8.2918	0.0288	2.8923	0.0198	2.9121	0.7702	0.0182	0.7884		2,872.4900	2,872.4900	0.0615		2,874.0279
Total	1.2709	10.6343	11.0142	0.0552	3.5467	0.0406	3.5873	0.9597	0.0381	0.9979		5,748.5698	5,748.5698	0.2870		5,755.7457

3.5 Building Construction - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

UCI Health Sciences Parking Structure - Orange County, Summer

3.5 Building Construction - 2022**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	0.2684	9.4968	2.6287	0.0261	0.6836	0.0181	0.7018	0.1967	0.0174	0.2141		2,847.8329	2,847.8329	0.2185		2,853.2945
Worker	0.9312	0.5402	7.7389	0.0277	3.0515	0.0194	3.0709	0.8093	0.0178	0.8271		2,766.0394	2,766.0394	0.0559		2,767.4360
Total	1.1997	10.0369	10.3676	0.0538	3.7351	0.0375	3.7726	1.0060	0.0352	1.0412		5,613.8723	5,613.8723	0.2743		5,620.7305

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

UCI Health Sciences Parking Structure - Orange County, Summer

3.5 Building Construction - 2022**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	0.2684	9.4968	2.6287	0.0261	0.6543	0.0181	0.6725	0.1895	0.0174	0.2069		2,847.8329	2,847.8329	0.2185		2,853.2945
Worker	0.9312	0.5402	7.7389	0.0277	2.8923	0.0194	2.9117	0.7702	0.0178	0.7880		2,766.0394	2,766.0394	0.0559		2,767.4360
Total	1.1997	10.0369	10.3676	0.0538	3.5467	0.0375	3.5842	0.9597	0.0352	0.9949		5,613.8723	5,613.8723	0.2743		5,620.7305

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	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

UCI Health Sciences Parking Structure - Orange County, Summer

3.6 Paving - 2022**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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	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

UCI Health Sciences Parking Structure - Orange County, Summer

3.6 Paving - 2022**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 - 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	2.0542					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	2.2587	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

UCI Health Sciences Parking Structure - Orange County, Summer

3.7 Architectural Coating - 2022**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	0.1876	0.1088	1.5591	5.5900e-003	0.6148	3.9000e-003	0.6187	0.1630	3.5900e-003	0.1666		557.2607	557.2607	0.0113		557.5421
Total	0.1876	0.1088	1.5591	5.5900e-003	0.6148	3.9000e-003	0.6187	0.1630	3.5900e-003	0.1666		557.2607	557.2607	0.0113		557.5421

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	2.0542					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	2.2587	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

UCI Health Sciences Parking Structure - Orange County, Summer

3.7 Architectural Coating - 2022**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	0.1876	0.1088	1.5591	5.5900e-003	0.5827	3.9000e-003	0.5866	0.1552	3.5900e-003	0.1588		557.2607	557.2607	0.0113		557.5421
Total	0.1876	0.1088	1.5591	5.5900e-003	0.5827	3.9000e-003	0.5866	0.1552	3.5900e-003	0.1588		557.2607	557.2607	0.0113		557.5421

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

UCI Health Sciences Parking Structure - Orange County, Summer

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking with Elevator	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

UCI Health Sciences Parking Structure - Orange County, Summer

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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					
Unenclosed Parking with Elevator	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
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

UCI Health Sciences Parking Structure - Orange County, Summer

5.2 Energy by Land Use - NaturalGas**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					
Unenclosed Parking with Elevator	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
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Unmitigated	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

UCI Health Sciences Parking Structure - Orange County, Summer

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	0.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0171	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Total	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

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	0.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0171	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Total	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

7.0 Water Detail

UCI Health Sciences Parking Structure - Orange County, Summer

7.1 Mitigation Measures Water

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
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation

UCI Health Sciences Parking Structure - Orange County, Winter

UCI Health Sciences Parking Structure

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	1,800.00	Space	6.10	650,000.00	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	Sierra Pacific Resources				
CO2 Intensity (lb/MW hr)	531.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

UCI Health Sciences Parking Structure - Orange County, Winter

Project Characteristics - Adjusted per the SCE 2019 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as $534-25 \times 0.029-298 \times 0.00617=531.4363$ to avoid double counting.

Land Use - Project acreage and square feet

Construction Phase - Anticipated Construction schedule

Off-road Equipment - No demolition phase

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Demolition -

Energy Use - Adjusted per 2019 title 24

Construction Off-road Equipment Mitigation - Adjusted per AQMD rule 403

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	230.00	234.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/22/2022	9/30/2022

UCI Health Sciences Parking Structure - Orange County, Winter

tblConstructionPhase	PhaseEndDate	6/27/2022	8/1/2022
tblConstructionPhase	PhaseEndDate	6/28/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	8/9/2021	9/7/2021
tblConstructionPhase	PhaseEndDate	7/25/2022	8/22/2022
tblConstructionPhase	PhaseEndDate	7/12/2021	6/7/2021
tblConstructionPhase	PhaseStartDate	7/26/2022	6/1/2022
tblConstructionPhase	PhaseStartDate	8/10/2021	9/8/2021
tblConstructionPhase	PhaseStartDate	7/13/2021	6/8/2021
tblConstructionPhase	PhaseStartDate	6/28/2022	8/2/2022
tblConstructionPhase	PhaseStartDate	6/29/2021	6/1/2021
tblEnergyUse	LightingElect	1.75	1.23
tblGrading	MaterialExported	0.00	120,400.00
tblLandUse	LandUseSquareFeet	720,000.00	650,000.00
tblLandUse	LotAcreage	16.20	6.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1328.16	531.44
tblTripsAndVMT	WorkerTripNumber	0.00	15.00

2.0 Emissions Summary

UCI Health Sciences Parking Structure - Orange County, Winter

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					
2021	4.0343	83.4259	32.9957	0.2005	18.2675	2.0458	20.3132	9.9840	1.8821	11.8661	0.0000	21,944.40 56	21,944.40 56	2.9687	0.0000	22,018.62 34
2022	5.5168	27.2050	29.6234	0.0869	4.3499	0.9328	5.2827	1.1690	0.8823	2.0514	0.0000	8,758.837 4	8,758.837 4	0.9224	0.0000	8,781.898 6
Maximum	5.5168	83.4259	32.9957	0.2005	18.2675	2.0458	20.3132	9.9840	1.8821	11.8661	0.0000	21,944.40 56	21,944.40 56	2.9687	0.0000	22,018.62 34

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					
2021	4.0343	83.4259	32.9957	0.2005	7.9140	2.0458	9.9598	4.2962	1.8821	6.1783	0.0000	21,944.40 56	21,944.40 56	2.9687	0.0000	22,018.62 34
2022	5.5168	27.2050	29.6234	0.0869	4.1294	0.9328	5.0622	1.1149	0.8823	1.9972	0.0000	8,758.837 4	8,758.837 4	0.9224	0.0000	8,781.898 6
Maximum	5.5168	83.4259	32.9957	0.2005	7.9140	2.0458	9.9598	4.2962	1.8821	6.1783	0.0000	21,944.40 56	21,944.40 56	2.9687	0.0000	22,018.62 34

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	46.75	0.00	41.31	51.48	0.00	41.26	0.00	0.00	0.00	0.00	0.00	0.00

UCI Health Sciences Parking Structure - Orange County, Winter

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	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2969	1.6800e-003	0.1841	1.0000e-005	0.0000	6.6000e-004	6.6000e-004	0.0000	6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003	0.0000	0.4199

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	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2969	1.6800e-003	0.1841	1.0000e-005	0.0000	6.6000e-004	6.6000e-004	0.0000	6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003	0.0000	0.4199

UCI Health Sciences Parking Structure - Orange County, Winter

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	5/31/2021	5	0	
2	Site Preparation	Site Preparation	6/1/2021	6/7/2021	5	5	
3	Grading	Grading	6/8/2021	9/7/2021	5	66	
4	Building Construction	Building Construction	9/8/2021	8/1/2022	5	234	
5	Paving	Paving	8/2/2022	8/22/2022	5	15	
6	Architectural Coating	Architectural Coating	6/1/2022	9/30/2022	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 33

Acres of Paving: 6.1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 39,000 (Architectural Coating – sqft)

OffRoad Equipment

UCI Health Sciences Parking Structure - Orange County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	0	8.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

UCI Health Sciences Parking Structure - Orange County, Winter

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	0	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	6	15.00	0.00	15,050.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	273.00	107.00	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	55.00	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 - 2021

Unmitigated Construction On-Site

[illegible]

UCI Health Sciences Parking Structure - Orange County, Winter

3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

UCI Health Sciences Parking Structure - Orange County, Winter

3.2 Demolition - 2021**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	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.3 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.656 9	3,685.656 9	1.1920		3,715.457 3

UCI Health Sciences Parking Structure - Orange County, Winter

3.3 Site Preparation - 2021**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	0.0736	0.0432	0.5045	1.8000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		179.2498	179.2498	3.8400e-003		179.3458
Total	0.0736	0.0432	0.5045	1.8000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		179.2498	179.2498	3.8400e-003		179.3458

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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	7.7233	2.0445	9.7678	4.2454	1.8809	6.1263	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573

UCI Health Sciences Parking Structure - Orange County, Winter

3.3 Site Preparation - 2021**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	0.0736	0.0432	0.5045	1.8000e-003	0.1907	1.3000e-003	0.1920	0.0508	1.2000e-003	0.0520		179.2498	179.2498	3.8400e-003		179.3458
Total	0.0736	0.0432	0.5045	1.8000e-003	0.1907	1.3000e-003	0.1920	0.0508	1.2000e-003	0.0520		179.2498	179.2498	3.8400e-003		179.3458

3.4 Grading - 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					
Fugitive Dust					6.7586	0.0000	6.7586	3.3987	0.0000	3.3987			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895,1495
Total	2.2903	24.7367	15.8575	0.0296	6.7586	1.1599	7.9186	3.3987	1.0671	4.4658		2,871.9285	2,871.9285	0.9288		2,895,1495

UCI Health Sciences Parking Structure - Orange County, Winter

3.4 Grading - 2021**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	1.6827	58.6532	16.7178	0.1694	3.9701	0.1854	4.1555	1.0868	0.1774	1.2642		18,923.10 22	18,923.10 22	2.0367		18,974.01 91
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	0.0613	0.0360	0.4204	1.5000e-003	0.1677	1.0900e-003	0.1688	0.0445	1.0000e-003	0.0455		149.3748	149.3748	3.2000e-003		149.4548
Total	1.7440	58.6892	17.1382	0.1709	4.1378	0.1865	4.3243	1.1313	0.1784	1.3097		19,072.47 71	19,072.47 71	2.0399		19,123.47 39

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					2.8893	0.0000	2.8893	1.4530	0.0000	1.4530			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895,149 5
Total	2.2903	24.7367	15.8575	0.0296	2.8893	1.1599	4.0492	1.4530	1.0671	2.5201	0.0000	2,871.928 5	2,871.928 5	0.9288		2,895,149 5

UCI Health Sciences Parking Structure - Orange County, Winter

3.4 Grading - 2021**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	1.6827	58.6532	16.7178	0.1694	3.7892	0.1854	3.9747	1.0424	0.1774	1.2198		18,923.10 22	18,923.10 22	2.0367		18,974.01 91
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	0.0613	0.0360	0.4204	1.5000e-003	0.1589	1.0900e-003	0.1600	0.0423	1.0000e-003	0.0433		149.3748	149.3748	3.2000e-003		149.4548
Total	1.7440	58.6892	17.1382	0.1709	3.9481	0.1865	4.1347	1.0847	0.1784	1.2631		19,072.47 71	19,072.47 71	2.0399		19,123.47 39

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		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3

UCI Health Sciences Parking Structure - Orange County, Winter

3.5 Building Construction - 2021**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	0.2997	10.0145	2.9866	0.0258	0.6836	0.0216	0.7053	0.1967	0.0207	0.2174		2,805.422 3	2,805.422 3	0.2366		2,811.336 1
Worker	1.1156	0.6551	7.6513	0.0273	3.0515	0.0198	3.0713	0.8093	0.0182	0.8275		2,718.621 9	2,718.621 9	0.0582		2,720.077 3
Total	1.4153	10.6696	10.6380	0.0530	3.7351	0.0414	3.7765	1.0060	0.0389	1.0449		5,524.044 2	5,524.044 2	0.2948		5,531.413 3

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	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3

UCI Health Sciences Parking Structure - Orange County, Winter

3.5 Building Construction - 2021**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	0.2997	10.0145	2.9866	0.0258	0.6544	0.0216	0.6760	0.1895	0.0207	0.2102		2,805.422 3	2,805.422 3	0.2366		2,811.336 1
Worker	1.1156	0.6551	7.6513	0.0273	2.8923	0.0198	2.9121	0.7702	0.0182	0.7884		2,718.621 9	2,718.621 9	0.0582		2,720.077 3
Total	1.4153	10.6696	10.6380	0.0530	3.5467	0.0414	3.5881	0.9597	0.0389	0.9986		5,524.044 2	5,524.044 2	0.2948		5,531.413 3

3.5 Building Construction - 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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2

UCI Health Sciences Parking Structure - Orange County, Winter

3.5 Building Construction - 2022**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	0.2818	9.4679	2.8797	0.0255	0.6836	0.0188	0.7025	0.1967	0.0180	0.2147		2,777.6054	2,777.6054	0.2287		2,783.3230
Worker	1.0571	0.5935	7.1302	0.0262	3.0515	0.0194	3.0709	0.8093	0.0178	0.8271		2,618.0121	2,618.0121	0.0528		2,619.3328
Total	1.3389	10.0613	10.0099	0.0517	3.7351	0.0382	3.7733	1.0060	0.0358	1.0418		5,395.6174	5,395.6174	0.2815		5,402.6558

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

UCI Health Sciences Parking Structure - Orange County, Winter

3.5 Building Construction - 2022**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	0.2818	9.4679	2.8797	0.0255	0.6543	0.0188	0.6732	0.1895	0.0180	0.2076		2,777.6054	2,777.6054	0.2287		2,783.3230
Worker	1.0571	0.5935	7.1302	0.0262	2.8923	0.0194	2.9117	0.7702	0.0178	0.7880		2,618.0121	2,618.0121	0.0528		2,619.3328
Total	1.3389	10.0613	10.0099	0.0517	3.5467	0.0382	3.5849	0.9597	0.0358	0.9956		5,395.6174	5,395.6174	0.2815		5,402.6558

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	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

UCI Health Sciences Parking Structure - Orange County, Winter

3.6 Paving - 2022**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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	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

UCI Health Sciences Parking Structure - Orange County, Winter

3.6 Paving - 2022**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 - 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	2.0542					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	2.2587	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

UCI Health Sciences Parking Structure - Orange County, Winter

3.7 Architectural Coating - 2022**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	0.2130	0.1196	1.4365	5.2900e-003	0.6148	3.9000e-003	0.6187	0.1630	3.5900e-003	0.1666		527.4383	527.4383	0.0106		527.7044
Total	0.2130	0.1196	1.4365	5.2900e-003	0.6148	3.9000e-003	0.6187	0.1630	3.5900e-003	0.1666		527.4383	527.4383	0.0106		527.7044

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	2.0542					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	2.2587	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

UCI Health Sciences Parking Structure - Orange County, Winter

3.7 Architectural Coating - 2022**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	0.2130	0.1196	1.4365	5.2900e-003	0.5827	3.9000e-003	0.5866	0.1552	3.5900e-003	0.1588		527.4383	527.4383	0.0106		527.7044
Total	0.2130	0.1196	1.4365	5.2900e-003	0.5827	3.9000e-003	0.5866	0.1552	3.5900e-003	0.1588		527.4383	527.4383	0.0106		527.7044

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

UCI Health Sciences Parking Structure - Orange County, Winter

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking with Elevator	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

UCI Health Sciences Parking Structure - Orange County, Winter

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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					
Unenclosed Parking with Elevator	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
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

UCI Health Sciences Parking Structure - Orange County, Winter

5.2 Energy by Land Use - NaturalGas**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					
Unenclosed Parking with Elevator	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
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Unmitigated	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

UCI Health Sciences Parking Structure - Orange County, Winter

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	0.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0171	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Total	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

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	0.0495					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0171	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199
Total	0.2969	1.6800e-003	0.1841	1.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004		0.3939	0.3939	1.0400e-003		0.4199

7.0 Water Detail

UCI Health Sciences Parking Structure - Orange County, Winter

7.1 Mitigation Measures Water

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 PARKING STRUCTURE PROJECT

**University of California, Irvine
Orange County, California**

BIOLOGICAL RESOURCES REPORT

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January 2019
Revised April 2021
JN 183562

HEALTH SCIENCES PARKING STRUCTURE PROJECT

**UNIVERSITY OF CALIFORNIA, IRVINE
ORANGE COUNTY, CALIFORNIA**

Biological Resources Report

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



Ryan Winkleman
Project Manager/Senior Biologist
Natural Resources/Regulatory Permitting

January 2019
Revised April 2021

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 6.1-acre Health Sciences Parking Structure Project (project) located at the UCI campus, in the City of Irvine, County of Orange, California. The proposed project consists of the construction of a new parking structure within the Health Sciences Quad of the UCI West Campus.

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 two separate general biological resources surveys, which included 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 the presence or absence of jurisdictional aquatic or other hydrological features.

The survey area consists of an undeveloped area composed mainly of non-native vegetation communities, surrounded by developed areas associated with surrounding transportation corridors and the UCI campus. One (1) natural vegetation community was observed and mapped within the survey area: wild oats and annual brome grasslands. Construction of the proposed project would result in a permanent loss of approximately 0.36 acre of wild oats and annual brome grasslands and three (3) human-modified areas mapped on-site as disturbed habitat, ornamental, and developed, which are not considered biological resources due to a lack of native soils and vegetation.

Based on a 5-mile radius search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) 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-six (46) special-status plant species and thirty-nine (39) special-status wildlife species known to occur within the vicinity of the survey area, nearly all 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 because the project is outside of the species' known distribution range.

Additionally, the survey area is located within and is subject to the requirements and provisions set forth in the Coastal Subregion 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 Implementing Agreement. 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 and Michael Baker determined that all special-status plant species have a low potential or are not expected to occur within the survey area. Three (3) special-status wildlife species were observed during the surveys: northern harrier (*Circus hudsonius*; California Species of Special Concern [SSC]), white-tailed kite (*Elanus leucurus*; California Fully Protected species), and coastal California gnatcatcher (*Polioptila californica californica*; Federally threatened/SSC). Northern harrier and coastal California gnatcatcher are both 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 California horned lark (*Eremophila alpestris actia*; California Watch List species) to occur within the survey area. Neither white-tailed kite nor California horned lark are covered under the Orange County NCCP/HCP.

A total of seven (7) special-status vegetation communities were identified within the 5-mile radius CNDDDB search, none of which were present within the survey area. 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). There are no jurisdictional aquatic features within the survey area.

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 between October 31 and August 31 will require pre-construction nesting bird surveys, and the appropriate avoidance setbacks if active nests are found.

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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
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FP	California Fully Protected species
FT	Federally-listed as Threatened
HA	Hydrologic Area
HSA	Hydrologic Subarea
HU	Hydrologic Unit
IA	Implementing Agreement
IPaC	Information for Planning and Conservation
Michael Baker	Michael Baker International
MBTA	Migratory Bird Treaty Act
MM	minimization measure
NRCS	Natural Resources Conservation Service
NWI	USFWS National Wetlands Inventory
Orange County NCCP/HCP	County of Orange Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan
project	Health Sciences Parking Structure Project
SSC	California Species of Special Concern
UCI	University of California, Irvine
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	California Watch List species

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 Parking Structure 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 special-status¹ 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 bounded by California Avenue to the west; undeveloped areas to the north; parking lots and the UCI Health Sciences Center and School of Medicine to the east; and an active construction site to the south.

1.2 PROJECT DESCRIPTION

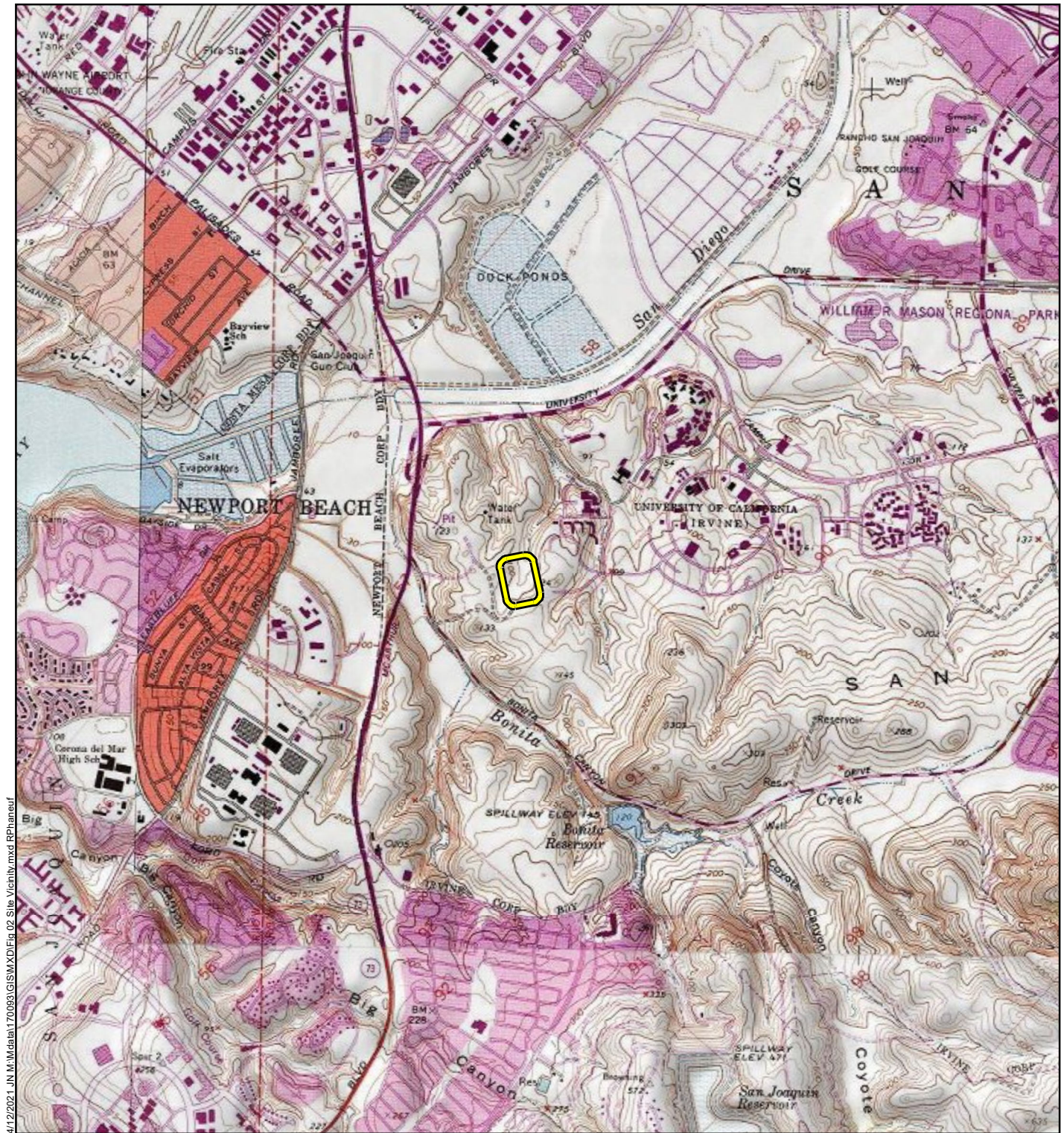
The Health Sciences Parking Structure Project would construct an up to 1,900-space parking structure within the Health Sciences Quad of the UCI West Campus. The structure would replace previously demolished surface parking and provide additional parking spaces for the Health Sciences program. Additional improvements include pedestrian and bicycle paths, landscaping, and vehicular arrival court and drop-off loop. The California Avenue and Theory Drive intersection would be improved, including signalization, to provide access to the project.

¹ As used in this report, “special-status” refers to plant and wildlife species that are Federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank species by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; and State/locally rare vegetation communities.




4/12/2021 J:\M:\data\170993\GIS\MXD\Fig 0.1 Regional Vicinity.mxd RP





4/12/2021 J:\M:\data\170093\GIS\MXD\Fig 02 Site Vicinity.mxd BPhaneuf

Legend

 Survey Area (150-foot Buffer)

Michael Baker
INTERNATIONAL



0 0.25 0.5
Miles

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

HEALTH SCIENCES PARKING STRUCTURE PROJECT
BIOLOGICAL RESOURCES REPORT

Site Vicinity

Figure 2



Legend



Project Site



Photograph Point and Direction



Survey Area (150-foot Buffer)



Reference Point



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 the 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 (CFGF), 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 (*Poliophtila 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” (R.J. Meade 1996). 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, including regional and local geography, land use, climate, and watershed. Further, Michael Baker conducted a 5-mile radius search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) RareFind 5 (CDFW 2021a) and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2021), 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 2021a). The 5-mile radius search included the *Tustin*, *Newport Beach*, and *Laguna Beach, California* USGS 7.5-minute quadrangles. 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 2021b) and the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021c) were reviewed for the current status designations of special-status plant and wildlife species. Other resources reviewed include the CNPS California Rare Plant Rank (CRPR) System; recent aerial photography (Google, Inc. 2021); the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Custom Soil Resource Report for Orange County and Part of Riverside County, California* (USDA, NRCS 2021); the National Hydric Soils List (USDA, NRCS 2015); and the USFWS National Wetlands Inventory (NWI; USFWS 2021b).

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. Following a reduction in the project footprint, a second general biological resources survey was conducted of the revised survey area by Michael Baker biologist Ryan Winkleman on April 6, 2021. The survey was conducted between the hours of 0730 and 0915, with weather conditions consisting of temperatures ranging from approximately 59 to 60°F, winds approximately 0 to 1 mile per hour, and cloud cover ranging from 60 percent to completely overcast. The 2021 survey was conducted to investigate and record updated field conditions following the gap in time of nearly 2.5 years between surveys. Representative photographs from the 2021 survey of the final 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 of terrestrial vegetation classification systems described in *A Manual of California Vegetation* (Sawyer et al. 2009) and cross referenced with the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) to verify that no on-site vegetation communities are considered special-status under the CNDDDB. 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 during both 2018 and 2021 surveys, refer to Appendix B, *Plant and Wildlife Species Observed List*.

2.2.2 General Wildlife Observations

To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union's *Checklist of North American Birds* (Chesser et al. 2019), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature for mammals follows the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014). 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/or without extensive survey efforts during the appropriate season. In addition, several species are transients and may only occupy the site fleetingly, and for birds in particular depending on seasonality the on-site fauna may differ substantially. For a complete list of wildlife species observed or otherwise detected on-site during both 2018 and 2021 surveys, refer to Appendix B.

2.3 SURVEY LIMITATIONS

This Biological Resources Report and associated surveys have 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. 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 CNDDDB RareFind 5 and CNPS Online Inventory, and professional expertise. Standard data sources relied upon during the completion of this report, such as the CNDDDB, may vary with regard to accuracy and completeness. In particular, the CNDDDB 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 both 2018 and 2021 surveys 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 grassland, disturbed areas, and ornamental vegetation. 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.

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. Any surface waters running off of 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 (FEMA 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.

On-site and adjoining soils were reviewed prior to the field visit using the USDA, NRCS Web Soil Survey (USDA, NRCS 2021). Mapped soils within the survey area include the following (refer to Figure 4, *USDA Soils*):

- Myford sandy loam, 2 to 9 percent slopes, eroded (Map Unit Symbol: 174)
- Myford sandy loam, 9 to 30 percent slopes, eroded (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 *Custom Soil Resource Report for Orange County and Part of Riverside County, California* (USDA, NRCS 2021), with the soil textures consisting of sandy loam.

3.3 VEGETATION COMMUNITIES AND OTHER LAND USES

One (1) natural plant community and three (3) other land uses were identified on-site during the field survey. Vegetation classification was based on Sawyer et al. (2009), with Holland (1986) cross-referenced for CNDDDB sensitivity. A complete list of plant species observed during both 2018 and 2021 surveys 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, with each discussed in detail below.



Legend



Project Site



Survey Area (150-foot Buffer)



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

HEALTH SCIENCES PARKING STRUCTURE PROJECT
BIOLOGICAL RESOURCES REPORT

USDA Soils

Figure 4





4/12/2021 J:\M:\Data\170093\GIS\MXD\Eig 05 Vegetation Communities, Land Uses and Special-Status Species.mxd RP

Legend		Vegetation Communities		Special-Status Species	
	Project Site		Wild Oats and Annual Brome Grasslands (1.34 acres)		Coastal California Gnatcatcher (2 individuals)
	Survey Area (150-foot Buffer)		Ornamental (1.41 acres)		Northern Harrier (1 individual)
	Reference Point		Disturbed (3.40 acre)		White-tailed Kite (1 individual)
			Developed (5.04 acres)		

HEALTH SCIENCES PARKING STRUCTURE PROJECT
BIOLOGICAL RESOURCES REPORT
Vegetation Communities, Land Uses,
and Special-Status Species

Figure 5

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

Vegetation Community/Land Use	Project Site (Acres)	Survey Area (Acres)	Total (Acres)*
Wild Oats and Annual Brome Grasslands	0.36	0.98	1.34
Disturbed Habitat	2.41	0.99	3.40
Ornamental	0.05	1.36	1.41
Developed	0.92	4.12	5.04
TOTAL*	3.74	7.45	11.19

* Totals may not equal to sum due to rounding.

Wild Oats and Annual Brome Grasslands

The northwest corner of the study area is primarily dominated by wild oats and annual brome grasslands. Dominant species within the vegetation community on-site primarily include brome grasses (*Bromus* spp.), wild oat (*Avena 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. This community composes most of the unpaved portion of the survey area. Dominant species within this non-native vegetation community on-site primarily include Russian thistle (*Salsola tragus*), red brome (*Bromus rubens*), redstem filaree, bank catclaw (*Acacia redolens*), tocalote (*Centaurea melitensis*), yellow sweetclover (*Melilotus indicus*), and black mustard (*Brassica nigra*). Although there are scattered native shrubs in this community including California sagebrush (*Artemisia californica*), goldenbush (*Isocoma menziesii*), deerweed (*Acmispon glaber*), and California buckwheat (*Eriogonum fasciculatum*), these represent a small portion of the on-site vegetation, which is dominated by non-native and introduced species.

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, bank catclaw, 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, as well as the southern-most portion of the survey area that has been fenced off and now consists of a paved parking lot and construction materials storage.

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. Some of the most common species observed during the survey include mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorrhous mexicanus*), lesser goldfinch (*Spinus psaltria*), white-crowned sparrow (*Zonotrichia leucophrys*), and song sparrow (*Melospiza melodia*). A complete list of wildlife species observed during both 2018 and 2021 surveys 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 CNDDDB 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*.

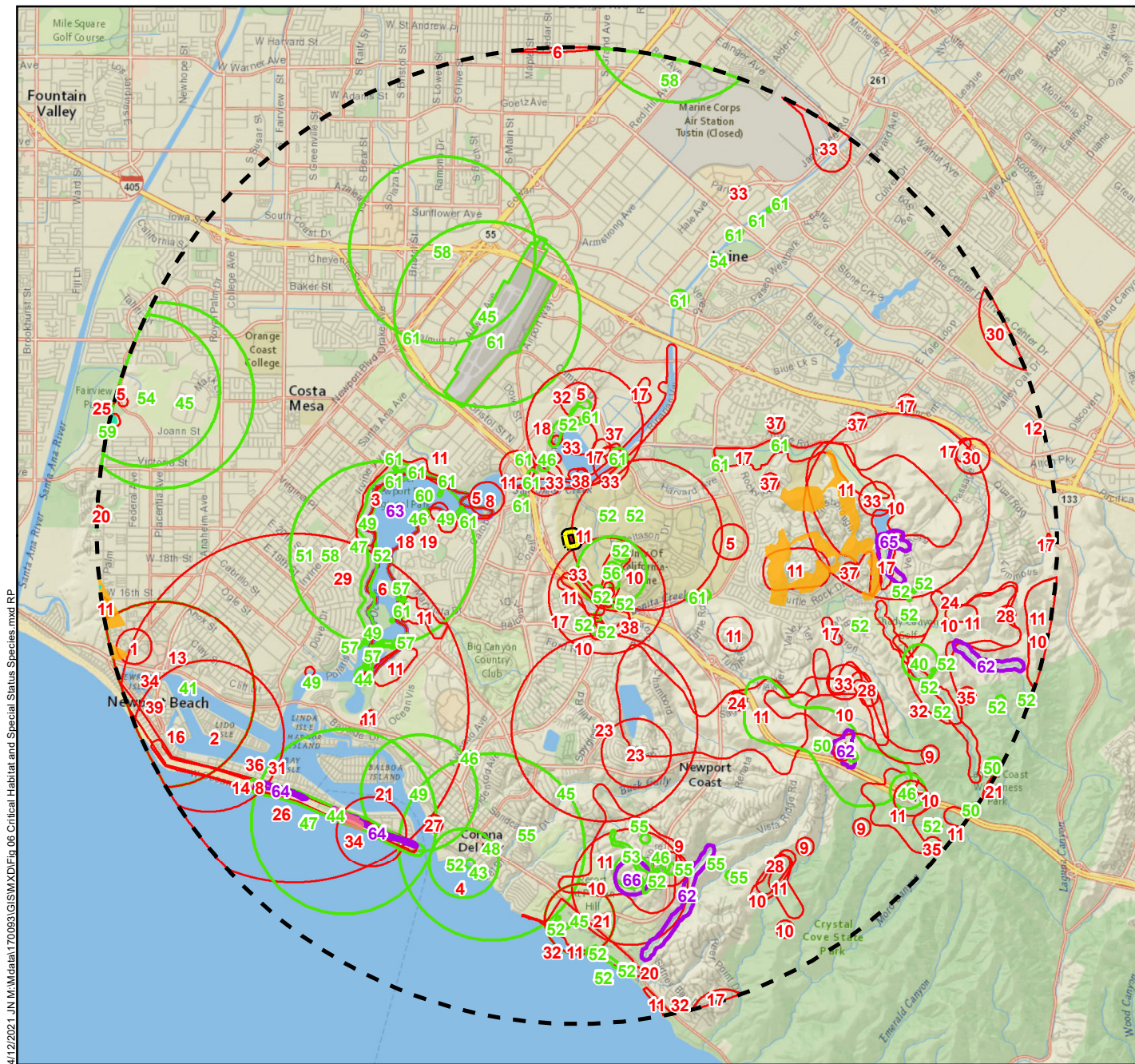
4.1 SPECIAL-STATUS SPECIES

The results of the database record searches (5-mile radius search of the CNDDDB RareFind 5 and CNPS Online Inventory; and query of the USFWS IPaC online system) revealed documented occurrences for a total of forty-six (46) special-status plant species and a total of thirty-nine (39) special-status wildlife species. Nearly all the special-status species with documented occurrences from the records search 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 further discussion.

No special-status plant species were observed during the December 2018 or April 2021 survey. Three (3) special-status wildlife species were observed during the two surveys: northern harrier (*Circus hudsonius*; SSC), white-tailed kite (*Elanus leucurus*; California Fully Protected [FP]) 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) other special-status wildlife species, California horned lark (*Eremophila alpestris actia*; California Watch List species [WL]).

4.1.1 Special-Status Plant Species

No special-status plant species were observed during the surveys. Of the forty-six (46) special-status plant species documented within the 5-mile search, all 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 being outside of the species' known distribution range.



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Legend

- Survey Area
(150-foot Buffer)
- 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 pentstemon	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 massiff 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	36	western spadefoot	49	estuary seabite	60	south coast saltscale		
11	coastal California gnatcatcher	24	red-diamond rattlesnake	37	western tidal-flat tiger beetle	50	intermediate mariposa-illy	61	southern tarplant		
12	Cooper's hawk	25	San Diego fairy shrimp	38	white-tailed kite						
13	Crotch bumble bee	26	sandy beach tiger beetle	39	yellow-breasted chat						

HEALTH SCIENCES PARKING STRUCTURE PROJECT BIOLOGICAL RESOURCES REPORT Special-Status Species/Habitat Documented within a 5-mile Radius

Figure 6



4.1.2 Special-Status Wildlife Species

Three (3) special-status wildlife species were observed during the survey: northern harrier (SSC), white-tailed kite (FP), and coastal California gnatcatcher (FT/SSC). Of the thirty-nine (39) special-status wildlife species documented within the 5-mile search, California horned lark (*Eremophila alpestris actia*; WL) was determined to 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.

Northern harrier: This bird species is known to nest in dense grasslands, wetlands, and marshes, where it nests directly on the ground in protected areas surrounded by dense vegetative ground cover. One northern harrier was observed foraging on-site during the 2018 survey. There are no recorded nesting records in the CNDDDB within 5 miles of the survey area, and this species has been declining on the coastal slope for decades as a breeding bird. Although there is an influx of wintering species each year, the local population of nesting birds is far smaller, and there is no nesting habitat on-site. Therefore, although this species may forage on-site it would not nest on-site.

Coastal California gnatcatcher: This bird species is known to nest and forage in coastal sage scrub vegetation, where it is obligate. It is rarely found outside of this vegetation except most often when adjacent vegetation provides post-fledging dispersal routes between habitat patches. Two California gnatcatchers were observed on-site in the northeastern edge of the survey area during the 2018 survey area, where there is a small patch of coastal sage scrub vegetation outside of the survey area limits. No gnatcatchers were incidentally detected during the 2021 survey, which did not constitute a focused or protocol survey for this species. Although this species was observed on-site in 2018, vegetation within the current survey area is marginal for this species and there is a low likelihood of it nesting 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 and white-tailed kite was observed foraging on-site during the 2021 survey. The nearest recorded nest occurrence for white-tailed kite is approximately 0.6 mile to the southeast. On-site trees were checked for any indication of possible kite nesting in the immediate survey area but none was found. Therefore, this species should be expected to forage on-site but is unlikely to nest.

California horned lark: This bird species is known to occur in low herbaceous vegetation with widely scattered low shrubs, such as the conditions 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 and to nest on-site.

4.2 SPECIAL-STATUS VEGETATION COMMUNITIES

The CNDDDB 5-mile radius records search revealed a total of seven (7) special-status vegetation community occurrences including Southern Coast Live Oak Riparian Forest, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Dune Scrub, Southern Foredunes, Southern Sycamore Alder Riparian Woodland, and Valley Needlegrass Grassland. None of these seven special-status vegetation communities were observed within the survey area.

4.3 JURISDICTIONAL HYDROLOGICAL FEATURES

There are no jurisdictional features present within the survey area. Although the NWI Mapper identifies a freshwater resource within the current survey area (USFWS 2021b), the jurisdictional delineation conducted on-site in 2018 of the original, larger survey area determined that there were no wetland or jurisdictional resources within the current survey area.

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 threats 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 County NCCP/HCP focuses on protection of coastal sage scrub habitat and three designated “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 Implementing Agreement (IA) satisfies the State and Federal mitigation

requirements for designated development and adequately provides for the conservation and protection of the 39 species and their habitats identified in the Orange County NCCP/HCP.

Specifically, the survey area is located within the Coastal Subregion 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 that have the potential to) occur within the survey area and surrounding vicinity, and that are covered by the Orange County NCCP/HCP.

The survey area is not located within the NCCP Reserve and is not a designated Special Linkage or Existing Use Area. All impacts would occur to non-native/disturbed habitat. Two California gnatcatchers were found inside the survey area in 2018, although none were detected during the 2021 survey. 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 does not require any additional mitigation for impacts to “identified” species and their habitat. Other than implementation of Best Management Practices (BMPs) and general compliance with standard environmental regulations such as those pertaining to protection of nesting birds, no additional mitigation is expected under 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. However, the University of California is an autonomous state agency and is not subject to the City of Irvine’s regulations on tree removal.

Section 5 Conclusions and Recommendations

The following section summarizes 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, which will result in loss of on-site vegetation within the project footprint and could result in injury or mortality of on-site wildlife if unable to escape. 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. Three (3) special-status wildlife species were observed during the survey. Michael Baker determined that the survey area contains suitable habitat for one (1) other special-status wildlife species. Therefore, a total of four (4) special-status species are 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
Birds		
coastal California gnatcatcher	FT / SSC	Observed present, foraging. Low potential to nest on-site.
northern harrier	SSC	Observed present, foraging. Not expected to nest on-site.
white-tailed kite	FP	Observed present, foraging. Not expected to 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 with the exception of Laguna Beach dudleya (*Dudleya stolonifera*; FT/State-listed as threatened), which is not expected on-site. Proposed impacts to other Federally- and/or State-listed plant species would be subject to “take” only under the provisions of FESA and/or CESA, respectively. However, no Federally- and/or State-listed plants are expected to occur. Refer to Appendix C, *Special-Status Species Table*, for more details on the potential for special-status plants to occur within the survey area.

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 are not considered significant under CEQA and warrant no legal protection but may simply require CEQA disclosure. Based on the quality and types of habitat that are present within the survey area, all special-status plant species that are known to occur in the general vicinity have either a low potential to occur or are presumed absent on-site. 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. A northern harrier (SSC) was observed foraging and two coastal California gnatcatcher (FT/SSC) were observed foraging, all near the northeastern corner of the survey area. 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 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 two (2) additional special-status wildlife species that are not covered under the NCCP/HCP (white-tailed kite and California horned lark). 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 of either of these species on-site. If these or any other special-status wildlife species are detected within proposed impact areas that could result in take, avoidance and/or minimization measures are recommended. With the implementation of Minimization Measure (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 special-status wildlife species are found that are already covered by the Orange County NCCP/HCP, they shall be allowed to move out of harm's way on their own. If they do not move, the biologist shall capture them unharmed and release them in appropriate habitat an adequate

distance from the project site under the conditions of the take permits that were issued by CDFW and USFWS for the Orange County NCCP/HCP. If special-status species not already covered by the NCCP/HCP are found within the project site at the time of construction that cannot move on their own, a qualified biologist shall coordinate with CDFW and/or USFWS, as applicable and as necessary, to determine measures to avoid and minimize impacts and, if impacts cannot be avoided and mitigation is required, it will be provided to ensure CEQA compliance. However, based on the analysis conducted for this project, unavoidable impacts to special-status species that are not covered by the Orange County NCCP/HCP are not expected to occur within the areas proposed for construction.

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, the site shall be checked, 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

5.3 JURISDICTIONAL HYDROLOGICAL FEATURES

There are no jurisdictional features located within the survey area. Therefore, construction of the project 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-3, impacts to nesting birds would be less than significant.

Minimization Measures

MM BIO-3: Proposed construction activities shall avoid the bird breeding season (January 1 to August 31), if feasible. If avoidance of the period from January 1 to August 31 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 no more than 3 days prior to project commencement.

In the event that active nests are discovered, a suitable buffer (distance to be determined by the biologist based on the specific species found to be nesting, but typical nest buffers are from 500 feet to 300 feet but can be smaller depending on the bird species) shall be established around such active nests, and no construction within the buffer shall be 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) or that it is safe to resume certain construction activities. Avoidance buffers may be reduced in size if a qualified biological monitor is present to observe the birds. The biological monitor must use best professional judgment to ensure that construction activities do not cause “take” (e.g., adults flushing off of a nest, fledglings changing behavior that could put them in harm, or any other form of disturbance).

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 to designated Critical Habitat.

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 (R.J. Meade 1996). 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 0.15 mile west of the survey area on the vegetated slopes of State Route 73 and is separated from the survey area by existing development. Implementation of the proposed project will not affect any covered Orange County NCCP/HCP habitats.

5.6.2 City of Irvine Tree Removal Ordinance

Because the University of California is an autonomous state agency, any trees on land owned by UCI are not subject to local regulations.

5.7 CUMULATIVE IMPACTS

Past, present and reasonably foreseeable future projects are required to implement measures, as set forth in their respective CEQA documents, consistent with federal, State, and local regulations, to avoid adverse effects to existing biological resources or to mitigate for significant impacts to these resources. The types of measures required for projects impacting protected habitat, species, and regulated resources can include avoidance, project design features, regulatory approvals, best management practices, and mitigation measures. With implementation of mitigation measures BIO-1, BIO-2, and BIO-3, potential impacts on sensitive plant and wildlife species are less than significant.

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Appendix A: Site Photographs



Photograph 1 – Facing east from the northwest corner of the project site at wild oats and annual brome grasslands.



Photograph 2 – Facing south from the northwest corner of the project site. A portion of the site at its southern end has already been developed or is being used for active materials staging for nearby construction.



Photograph 3 – Facing northwest from disturbed habitat near the north end of the project site.



Photograph 4 – Facing northeast from disturbed habitat at the western edge of the project site.



Photograph 5 – Facing west from the western edge of the project site at ornamental vegetation along California Avenue.



Photograph 6 – Facing south, where the southern portion of the project site has been fenced off and is either already developed or is being used as construction staging.



Photograph 7 – Facing north from the construction fence at disturbed habitat across the site.



Photograph 8 – Facing northwest from the southeast corner of the survey area, opposite the fence. This area has already been converted to a paved parking lot, and the staging yard from Photos 2 and 6 is visible to the left.

Appendix B: Plant and Wildlife Species Observed List

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
Plants		
<i>Acacia redolens</i> *	bank catclaw	
<i>Acmispon glaber</i>	deerweed	
<i>Agave americana</i> *	blue agave	
<i>Amsinckia menziesii</i>	common fiddleneck	
<i>Artemisia californica</i>	California sagebrush	
<i>Atriplex lentiformis</i>	big saltbush	
<i>Atriplex rosea</i> *	tumbling saltweed	
<i>Atriplex semibaccata</i> *	Australian saltbush	Moderate
<i>Avena fatua</i> *	wild oat	Moderate
<i>Baccharis salicifolia</i>	mule fat	
<i>Baccharis pilularis</i>	coyote brush	
<i>Baccharis sarothroides</i>	broom baccharis	
<i>Brassica nigra</i> *	black mustard	Moderate
<i>Bromus diandrus</i> *	common ripgut grass	Moderate
<i>Bromus hordeaceus</i> *	soft chess	Limited
<i>Bromus rubens</i> *	red brome	High
<i>Bromus tectorum</i> *	cheatgrass	High
<i>Calystegia macrostegia</i>	island morning glory	
<i>Carpobrotus edulis</i> *	iceplant	High
<i>Centaurea melitensis</i> *	toocalote	Moderate
<i>Chenopodium murale</i> *	nettle leaf goosefoot	
<i>Cucurbita foetidissima</i>	calabazilla	
<i>Cynara cardunculus</i> *	artichoke thistle	Moderate
<i>Distichlis spicata</i>	saltgrass	
<i>Encelia californica</i>	California sunflower	
<i>Encelia farinosa</i>	brittlebush	
<i>Erigeron bonariensis</i>	flax-leaved horseweed	
<i>Eriogonum fasciculatum</i>	California buckwheat	
<i>Erodium botrys</i> *	longbeak filaree	
<i>Erodium cicutarium</i> *	redstem filaree	Limited
<i>Erodium moschatum</i> *	whitestem filaree	
<i>Eucalyptus citriodora</i> *	lemon scented gum	
<i>Euphorbia maculata</i> *	spotted spurge	
<i>Grindelia camporum</i>	common gumplant	
<i>Heterotheca grandiflora</i>	telegraph weed	
<i>Hirschfeldia incana</i> *	short-pod mustard	Moderate
<i>Hordeum murinum</i> *	barley	Moderate
<i>Isocoma menziesii</i>	goldenbush	

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
<i>Lactuca serriola</i> *	prickly lettuce	
<i>Lamarckia aurea</i> *	goldentop grass	
<i>Lepidium</i> sp.	pepperweed	
<i>Lupinus succulentus</i>	arroyo lupine	
<i>Lysimachia arvensis</i> *	scarlet pimpernel	
<i>Malosma laurina</i>	laurel sumac	
<i>Malva parviflora</i> *	cheeseweed	
<i>Medicago polymorpha</i> *	bur clover	Limited
<i>Melilotus albus</i> *	white sweetclover	
<i>Melilotus indicus</i> *	yellow sweetclover	
<i>Mesembryanthemum nodiflorum</i> *	small-flowered iceplant	Limited
<i>Muhlenbergia rigens</i>	deergrass	
<i>Myoporum parvifolium</i> *	slender myoporum	
<i>Oenothera elata</i> ssp. <i>hookeri</i>	evening primrose	
<i>Opuntia ficus-indica</i> *	mission cactus	
<i>Opuntia littoralis</i>	prickly pear cactus	
<i>Oxalis pes-caprae</i> *	Bermuda buttercup	Moderate
<i>Platanus racemosa</i>	western sycamore (ornamental)	
<i>Populus fremontii</i>	Fremont cottonwood	
<i>Punica granatum</i> *	pomegranate	
<i>Quercus agrifolia</i>	coast live oak	
<i>Quercus ilex</i> *	holly oak	
<i>Salix lasiolepis</i>	arroyo willow	
<i>Salsola tragus</i> *	Russian thistle	Limited
<i>Solanum americanum</i>	common nightshade	
<i>Sonchus asper</i> *	prickly sowthistle	
<i>Sonchus oleraceus</i> *	common sowthistle	
<i>Stephanomeria virgata</i>	twiggy wreath plant	
<i>Stipa pulchra</i>	purple needle grass	
<i>Ulmus parvifolia</i> *	Chinese elm	
<i>Vulpia myuros</i> *	rat's-tail fescue	
<i>Yucca schidigera</i>	Mohave yucca	
Reptiles		
<i>Sceloporus occidentalis longipes</i>	Great Basin fence lizard	
Birds		
<i>Aeronautes saxatalis</i>	white-throated swift	
<i>Buteo lineatus</i>	red-shouldered hawk	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Cathartes aura</i>	turkey vulture	

Scientific Name *	Common Name	Cal-IPC Rating** Special-Status***
<i>Circus hudsonius</i>	northern harrier	SSC
<i>Corvus brachyrhynchos</i>	American crow	
<i>Elanus leucurus</i>	white-tailed kite	FP
<i>Falco sparverius</i>	American kestrel	
<i>Geothlypis trichas</i>	common yellowthroat	
<i>Haemorhous mexicanus</i>	house finch	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Larus occidentalis</i>	western gull	
<i>Melospiza melodia</i>	song sparrow	
<i>Melospiza crissalis</i>	California towhee	
<i>Patagioenas fasciata</i>	band-tailed pigeon	
<i>Petrochelidon pyrrhonota</i>	cliff swallow	
<i>Pipilo maculatus</i>	spotted towhee	
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	FT/SSC
<i>Psaltiriparus minimus</i>	bushtit	
<i>Regulus calendula</i>	ruby-crowned kinglet	
<i>Sayornis nigricans</i>	black phoebe	
<i>Selasphorus rufus/sasin</i>	rufous/Allen's hummingbird	
<i>Setophaga coronata</i>	yellow-rumped warbler	
<i>Sialia mexicana</i>	western bluebird	
<i>Spinus lawrencei</i>	Lawrence's goldfinch	
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	
<i>Troglodytes aedon</i>	house wren	
<i>Tyrannus vociferans</i>	Cassin's kingbird	
<i>Zenaidura macroura</i>	mourning dove	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	
Mammals		
<i>Canis latrans</i>	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 – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- FP California Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.
- SSC California Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:
- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
 - is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
 - is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
 - has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

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			
<i>Abronia maritima</i> 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.
<i>Abronia villosa</i> var. <i>aurita</i> 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.
<i>Aphanisma blitoides</i> 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.
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	-- / -- 1B.1	Annual herb. Blooms from May to October. Found on lake margins, alkaline soils within meadows and seeps and playas. Known elevations range from 197 to 2,789 feet amsl.	Not Expected. Suitable habitat (moist areas) is not present within the survey area. The only known occurrence within 5 miles is extirpated.
<i>Atriplex coulteri</i> 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.
<i>Atriplex pacifica</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Atriplex parishii</i> Parish's brittle-scale	-- / --- 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.
<i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's salt-scale	-- / -- 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.
<i>Calochortus catalinae</i> 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.
<i>Calochortus weedii</i> var. <i>intermedius</i> 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.
<i>Camissoniopsis lewisii</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Centromadia parryi</i> <i>ssp. australis</i> 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 (<i>Distichlis spicata</i>). 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.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i> 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.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> 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.
<i>Cistanthe maritima</i> 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.
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> 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.
<i>Convolvulus simulans</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Deinandra paniculata</i> paniculate tarplant	-- / -- 4.2	Annual herb. Blooms March through November. Found on vernal 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.
<i>Dichondra occidentalis</i> 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.
<i>Dudleya multicaulis</i> 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.
<i>Dudleya stolonifera</i> 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.
<i>Eryngium aristulatum</i> var. <i>parishii</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Euphorbia misera</i> 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.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> 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.
<i>Hordeum intercedens</i> 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.
<i>Horkelia cuneata</i> var. <i>puberula</i> 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.
<i>Isocoma menziesii</i> var. <i>decumbens</i> 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.
<i>Juncus acutus</i> ssp. <i>leopoldii</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Lasthenia glabrata</i> <i>ssp. coulteri</i> 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.
<i>Lepidium virginicum</i> <i>var. robinsonii</i> 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.	Low. Suitable habitat (dry soils in coastal sage scrub) is not present within the survey area, which is highly disturbed. A small patch of coastal sage scrub is present outside of the survey area. The nearest occurrence is less than 0.5 mile to the southeast.
<i>Lycium californicum</i> 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.
<i>Malacothrix saxatilis</i> <i>var. saxatilis</i> 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.
<i>Nama stenocarpa</i> 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.
<i>Nasturtium gambelii</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Navarretia prostrata</i> 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.
<i>Nemacaulis denudata</i> var. <i>denudata</i> 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.
<i>Orcuttia californica</i> 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.
<i>Pentachaeta aurea</i> ssp. <i>allenii</i> 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.
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Quercus dumosa</i> 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.
<i>Sagittaria sanfordii</i> 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.
<i>Senecio aphanactis</i> 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.
<i>Sidalcea neomexicana</i> 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.
<i>Suaeda esteroa</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Symphyotrichum defoliatum</i> San Bernardino aster	-- / -- 1B.2	Perennial herb (rhizomatous). Blooms July through November. Grows in vernal 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 (vernal 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.
<i>Verbesina dissita</i> 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			
<i>Bombus crotchii</i> Crotch bumble bee	-- / SCE G3G4 / S1S2	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Low. A host plant in the <i>Eriogonum</i> genus is present in very small numbers within the survey area. However, the nearest occurrence is over 4 miles to the southwest.
<i>Branchinecta sandiegonensis</i> 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.
<i>Danaus plexippus</i> pop. 1 monarch - California overwintering population	FC / -- 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Streptocephalus woottoni</i> Riverside fairy shrimp	FE / -- G1G2 / S1S2	Restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds and other human modified depressions. Basins that support Riverside fairy shrimp are typically dry a portion of the year, but usually are filled by late fall, winter, or spring rains, and may persist through May. Endemic to western Riverside, Orange, and San Diego Counties in tectonic swales/earth slump basins in grassland and coastal sage scrub. In Riverside County, the species has been found in pools formed over the following soils: Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils. All known habitat lies within annual grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	Not Expected. Suitable habitat (depressions, vernal pools) is not present within the survey area. The only known occurrence in the vicinity is just over 5 miles to the west at Fairview Park in Costa Mesa.
Fish			
<i>Eucyclogobius newberryi</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Oncorhynchus mykiss irideus</i> 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			
<i>Spea hammondi</i> 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			
<i>Aspidoscelis hyperythra</i> 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.	Not Expected. There is no suitable habitat present within the survey area. The nearest occurrence is over 3 miles to the east.
<i>Crotalus ruber</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Emys marmorata</i> 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.
<i>Phrynosoma blainvillii</i> 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.	Not Expected. There is no suitable habitat present within the survey area. The nearest occurrence is over 3 miles to the south.
Birds			
<i>Accipiter cooperii</i> (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 present in areas adjacent to the survey area. This species may forage on-site but not nesting habitat is present within the survey area.
<i>Agelaius tricolor</i> (Nesting colony) tricolored blackbird	-- / ST, 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Aimophila ruficeps canescens</i> 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.
<i>Ammodramus savannarum</i> (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.	Not Expected. Suitable nesting habitat (native grasses, scattered shrubs) is not present within the survey area.
<i>Athene cunicularia</i> (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 (<i>Otospermophilus beecheyi</i>).	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.
<i>Campylorhynchus brunneicapillus sandiegensis</i> (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 (<i>Opuntia littoralis</i>) or cholla (<i>Cylindropuntia</i> 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.
<i>Charadrius alexandrinus nivosus</i> (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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Circus hudsonius</i> (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.
<i>Coccyzus americanus occidentalis</i> (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 (<i>Salix</i> spp.), often mixed with cottonwoods (<i>Populus</i> spp.), with the lower story dominated by blackberry (<i>Rubus</i> spp.), nettles (<i>Urtica</i> spp.), and/or wild grape (<i>Vitis</i> 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.
<i>Coturnicops noveboracensis</i> 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. This species does not occur in California except in the far northeast corner.
<i>Elanus leucurus</i> (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.	Present (foraging). This species was observed foraging on-site. Marginal nesting habitat is present, although no potential nests were found during an examination of those trees on-site and along the edge of the site. There is a 2003 nest record approximately 0.6 mile southeast of the survey area.
<i>Empidonax traillii extimus</i> (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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Eremophila alpestris actia</i> 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.
<i>Icteria virens</i> (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.	Not Expected. Suitable nesting habitat (dense riparian thickets) is not present within the survey area. The nearest occurrence is approximately 0.5 mile to the north.
<i>Laterallus jamaicensis coturniculus</i> 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. This species does not occur in coastal southern California.
<i>Pandion haliaetus</i> 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.
<i>Passerculus sandwichensis beldingi</i> Belding's savannah sparrow	-- / SE G5T3 / S3	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in pickleweed (<i>Salicornia</i> 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.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Polioptila californica californica</i> 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 2018 survey. However, the area they were located in is a small patch of coastal sage scrub vegetation at the northern edge of the current survey area, with scattered sage scrub species located within the current on-site disturbed habitat. No gnatcatchers were detected during the 2021 survey.
<i>Rallus obsoletus levipes</i> light-footed Ridgway's rail	FE / SE, FP G5T1T2 / S1	Found in salt marshes traversed by tidal sloughs, where dense growths of cordgrass (<i>Spartina foliosa</i>) 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.
<i>Riparia riparia</i> 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.
<i>Setophaga petechia</i> 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 (<i>Platanus racemosa</i>), ash (<i>Fraxinus</i> spp.), and alder (<i>Alnus</i> spp.).	Not Expected. Suitable habitat (riparian areas near water or tall trees for foraging) is not present within the survey area, although suitable trees for foraging are present in areas immediately outside of the site. There is no suitable habitat within the survey area.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Sternula antillarum browni</i> (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.
<i>Vireo bellii pusillus</i> (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.	Not Expected. Suitable nesting habitat (riverine riparian habitats with herbaceous wetland understory) is not present within the survey area. The nearest CNDDB occurrence is approximately 0.5 mile to the south.
Mammals			
<i>Choeronycteris mexicana</i> 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.	Not Expected. Suitable roosting habitat (buildings) is present in areas surrounding the survey area; however, foraging habitat (night-blooming succulents) is not. Further, the nearest occurrence is approximately 7 miles to the north.
<i>Eumops perotis californicus</i> 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 present in areas surrounding the survey area, as is suitable foraging habitat. The nearest occurrence is approximately 1 mile to the north.

Scientific Name Common Name	Status* Federal / State CRPR or G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
<i>Perognathus longimembris pacificus</i> 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.
<i>Sorex ornatus salicornicus</i> 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.
<i>Taxidea taxus</i> 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 CNDDDB RareFind 5, ranging from critically imperiled (G1/S1) to demonstrably secure (G5/S5)

Intraspecific Taxon Conservation Status Ranks

Intraspecific taxa refer to subspecies, varieties, and other designations below the level of the species. Intraspecific taxon status (T-ranks) apply to plants and animals only; these T-ranks do not apply to ecological communities. The status of intraspecific 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
UCI Health Sciences Parking Structure Project
at the University of California, Irvine



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APPENDIX

Appendix A: Greenhouse Gas Emissions Data

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 ₂ e	Carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CAP	Climate Action Plan
CY	Cubic yard
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	Greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH ₄	Methane
MMTCO ₂ e	Million metric tons of carbon dioxide equivalent
MTCO ₂ e	Metric tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF ₃	Nitrogen trifluoride
N ₂ O	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
U.S. EPA	United States Environmental Protection Agency

1 INTRODUCTION

This report documents the results of an Air Quality Assessment completed for the University of California Irvine (UCI) Health Sciences Parking Structure Project (“Project” or “proposed Project”). 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 based in Orange County (County), in the City of Irvine (City) within the UCI campus; refer to **Exhibit 1: Regional Vicinity**. The 6.1-acre Project site is located in UCI’s West Campus to the east of California Avenue; refer to **Exhibit 2: Site Vicinity**. Main access to the Project would be made via the existing Theory and California Avenue intersection where the Project would construct a fourth leg and install a traffic signal. A secondary access would be available via vehicular roadways from within the UCI Health Sciences Quad.

1.2 Project Description

The proposed Project would construct an approximately six-story parking structure, approximately 650,000 square feet, including 1,900 parking spaces on the site within the Health Sciences Quad on the UCI West Campus. The structure would provide vehicular access to the Health Sciences Quad for faculty, staff, students, and off-campus visitors and patients. Additional proposed improvements include pedestrian and bicycle paths, landscaping, vehicular arrival court and drop-off loop, and a pedestrian bridge connecting to the College of Health Sciences; refer to **Exhibit 3: Conceptual Site Plan**.

1.3 Project Construction and Phasing

Project construction is anticipated to occur beginning in August 2021 and last approximately 16 months, ending in November 2022. The Project site is vacant and demolition would not be required. Grading for the proposed improvements would require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. 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

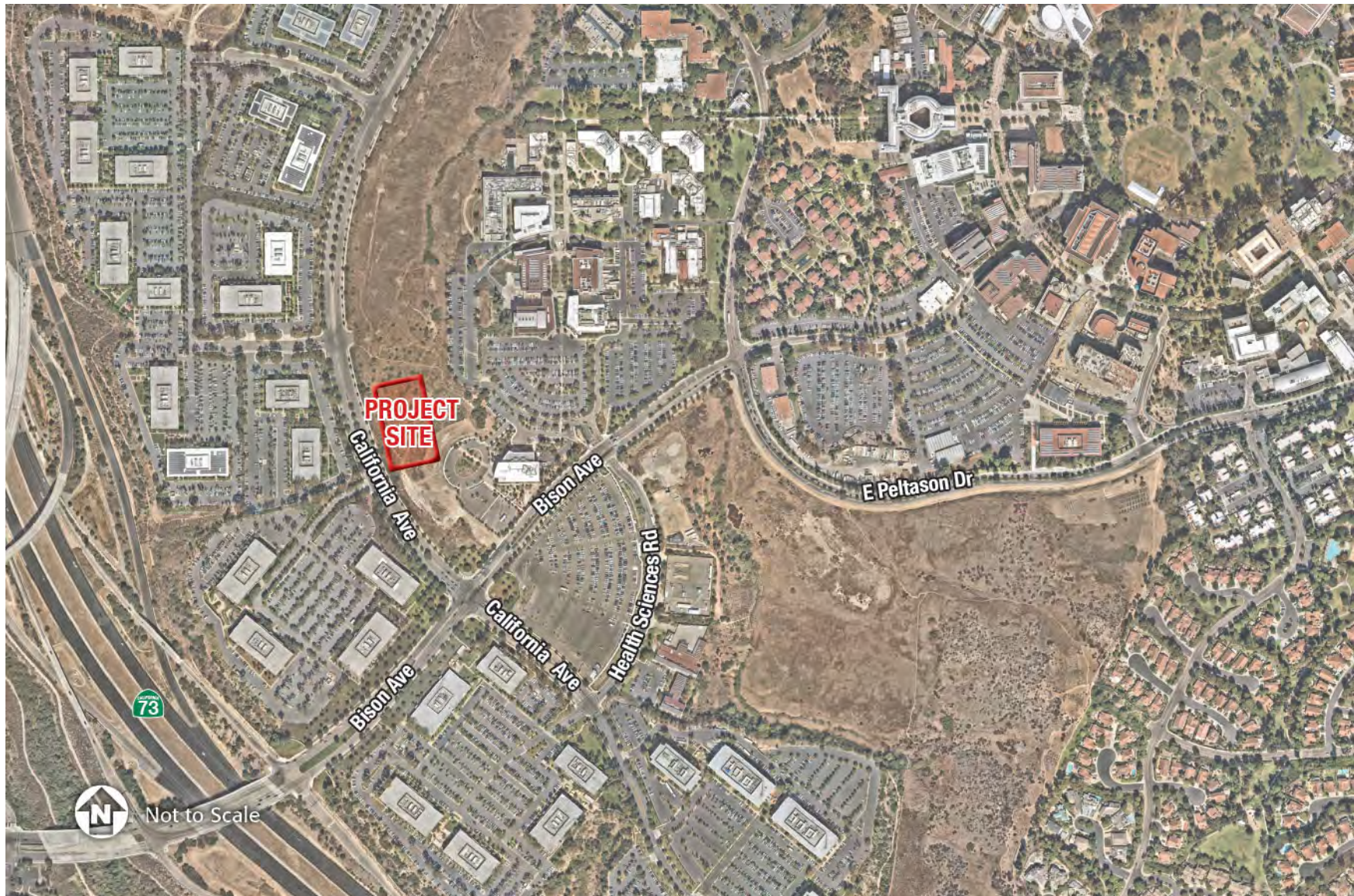
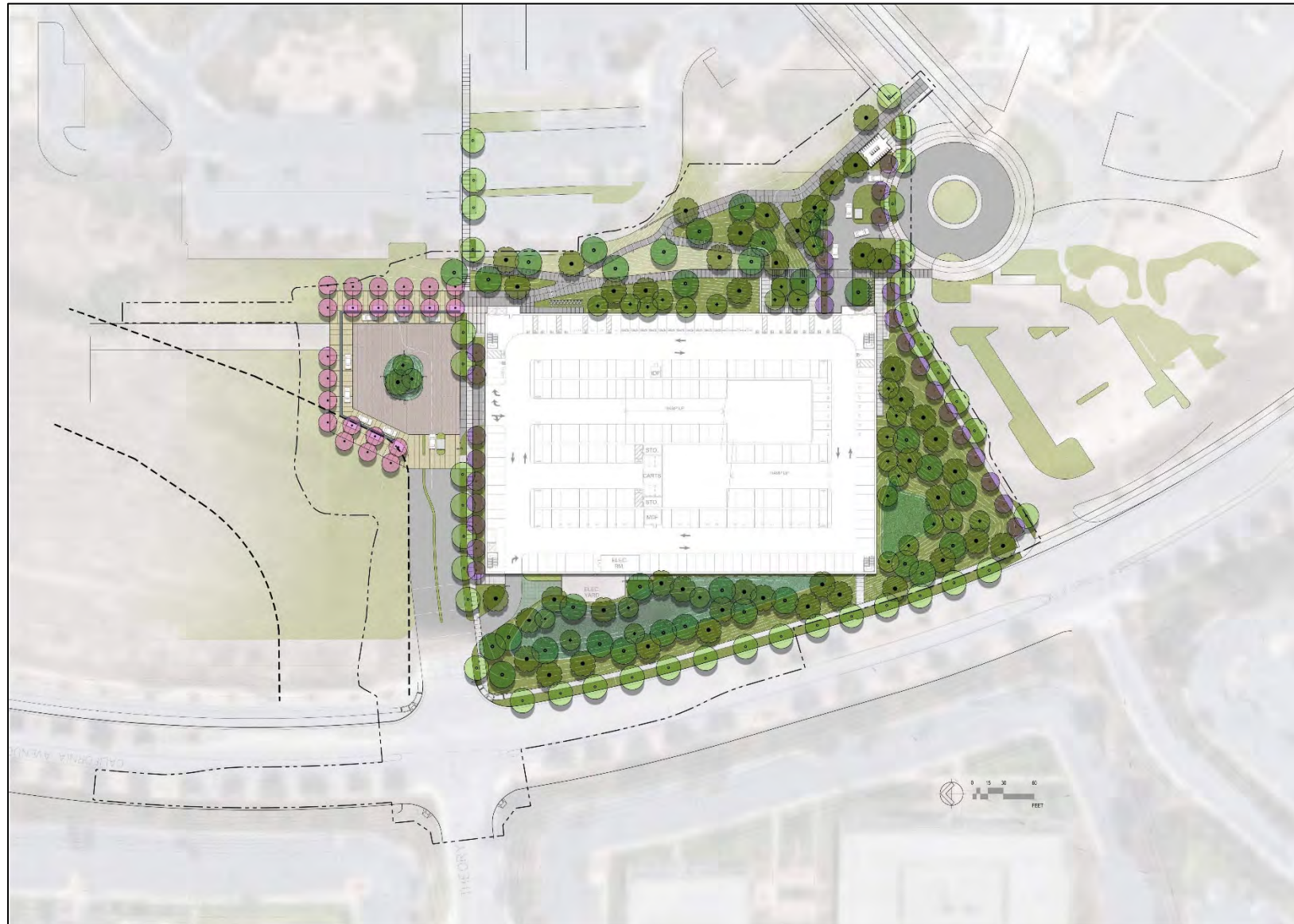


Exhibit 3: Conceptual Site Plan



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 (CO₂), methane (CH₄), and nitrous oxide (N₂O). 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 (SF₆), and nitrogen trifluoride (NF₃); 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 (about 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 CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO₂ 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 CO₂ 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. <https://www.ipcc.ch/report/ar5/wg1/>.

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 ₂ O)	N ₂ O is largely attributable to agricultural practices and soil management. Primary human-related sources of N ₂ O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N ₂ O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. The Global Warming Potential of N ₂ O 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: 1990-2017*, 2019; 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 (U.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 U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the U.S. EPA's assessment of the scientific evidence that form the basis for the U.S. 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 U.S. 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 U.S. 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, U.S. 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 U.S. 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 CO₂ 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 U.S. 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 U.S. EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ 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 U.S. 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 U.S. 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 CO₂ 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 U.S. EPA 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. On September 27, 2019, the U.S. EPA and the NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program.” (84 Fed. Reg. 51,310 (Sept. 27, 2019).) The Part One Rule revokes California’s authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the U.S. EPA and NHTSA finalized rulemaking for SAFE Part Two sets CO₂ emissions standards and corporate average fuel economy (CAFE) standards for passenger vehicles and light duty trucks, covering model years 2021-2026.

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 CO₂, N₂O, and CH₄.

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 CO₂ equivalents (CO₂e) in the world and produced 459 million gross metric tons of CO₂e 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 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.

California Air Resource Board Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall 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 the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

² CARB defines business-as-usual (BAU) 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 BAU, 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.

- 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.
- 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 the State 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 in light of 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 CO₂e (MMTCO₂e) to 545 MMTCO₂e. 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.

In 2016, the Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. 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, November 2017.

Senate Bill 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.

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 U.S. EPA's denial of an implementation waiver. The U.S. EPA subsequently granted the requested waiver in 2009, which was upheld 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 CO₂e 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 CO₂ per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards)

SB 1078 requires California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which 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. SBX1-2, which 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 25 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 tone for the State 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 shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive 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, 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 million metric tons of CO₂e (MMTCO₂e). 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 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 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 the CALGreen Code, 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 the CALGreen Code went into effect January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards 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, the Project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. The SCAQMD has adopted a threshold of 10,000 metric tons of CO₂e (MTCO₂e) per year for industrial projects and a 3,000 MTCO₂e threshold was proposed for non-industrial projects but has not been adopted. 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 MTCO₂e per service population per year and a post-2020 threshold of 3.0 MTCO₂e per service population per year. 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.

Southern California Association of Governments

On September 3, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy [2020 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 University of California

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).

CAP implementation actions prioritize low carbon growth, deep energy efficiency and green building to minimize energy use, deployment of on-site renewable energy systems, and procuring off-site clean and renewable energy to replace fossil-fuel energy sources. Additional CAP actions include UC-catalyzed or UC-supported off-site actions that result in verified, mission-consistent carbon offsets to fill the gap between existing emission levels and annual targets. However, the CAP is not considered a qualified GHG reduction plan under CEQA Guidelines Section 15183.5 as a formal CEQA document was not prepared.

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.

University of California Carbon Neutrality Initiative

In November 2013, UC announced the Carbon Neutrality Initiative, which commits the UC to achieving climate neutrality from Scope 1 and 2 sources by 2025 and progressing toward climate neutrality from specific Scope 3 sources by 2050 or sooner. Scope 1 emission sources include direct emissions from sources owned or controlled by the UC, such as emissions from stationary combustion, process emissions, and fugitive emissions; while Scope 2 sources include indirect emissions from purchased electricity and purchased cogeneration for heating or cooling. Scope 3 sources include emissions from all other sources that occur as a result of university operations but occur from sources not owned or controlled. UC is improving its energy efficiency, developing new sources of renewable energy and enacting a range of related strategies to cut carbon emissions. To help in the implementation of this initiative, UC formed the Global Climate Leadership Council (GCLC) in 2014 to advise UC leadership and to “connect carbon neutrality to UC’s teaching, research, and public service mission”.

Second Nature Carbon Commitment

UC is a signatory of Second Nature’s Carbon Commitment, formerly known as the American College and University President’s Climate Commitment (ACUPCC). This commitment focuses on reduction of GHG emissions with the goal of reaching carbon neutrality as soon as possible.

Energy Services Unit

The UC Energy Services Unit (ESU) has established projects and programs to provide utility-scale supply of renewable electricity and biomethane to support UC's sustainability goals. These efforts include investment in the development of 80 megawatts (MW) of solar energy supply by 2020 to provide long term sources of renewable power and development of 17 million therms of biomethane to provide renewable fuel to partially replace natural gas combustion on campuses. As a result, the ESU is greening the power supply to UC campuses with a goal of 100 percent GHG-free power supply to UC campuses that are served by the ESU under direct access.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Thresholds and Significance 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 MTCO₂e 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 proposed Project consists of a parking structure development. The SCAQMD's proposed 3,000 MTCO₂eq per year threshold has been selected as the significance threshold, as it is most applicable to the proposed Project. The 3,000 MTCO₂eq per year threshold is used in addition to the qualitative thresholds of significance set forth below from Section VII of Appendix G to the CEQA Guidelines.

4.2 Methodology

Global climate change is, by definition, a cumulative impact of GHG emissions. Therefore, there is no project-level analysis. The baseline against which to compare potential impacts of the project includes the natural and anthropogenic drivers of global climate change, including world-wide GHG emissions from human activities which almost doubled between 1970 and 2010 from approximately 27 gigatonnes (Gt) of CO₂/year to nearly 49 GtCO₂/year.⁵ As such, the geographic extent of climate change and GHG emissions cumulative impact discussion is worldwide.

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 emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2014 Mitigation of Climate Change Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014.

construction worker trips. GHG emissions during construction 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. During operations, the Project would not generate new vehicle trips. Operational area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste were quantified with CalEEMod.

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 16 months. The Project site is vacant and there would be no demolition phase. Grading for the proposed improvements would require 135,700 cubic yards (CY) cut and 153,000 cubic yards (CY) fill which result in 120,400 cubic yards (CY) of soil export. 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	MTCO₂e
Construction Year 1 (2021)	981
Construction Year 2 (2022)	600
Total Construction Emissions	1,581
30-Year Amortized Construction	53
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

As shown in **Table 2**, the Project would result in the generation of approximately 1,581 MTCO₂e over the course of construction. Construction GHG emissions are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.⁶ The amortized Project construction emissions would be 53 MTCO₂e per year. Once construction is complete, the generation of these GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the Project. GHG emissions 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 also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to, and wastewater from a project, the emissions associated with solid waste generated from a project, and any fugitive refrigerants from air conditioning or refrigerators.

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).

The proposed Project would construct an approximately six-level parking structure to serve the adjacent existing medical offices and educational institutions and would not generate additional vehicle trips and no stationary sources are proposed. The energy related GHG emissions associated with the Project would be 223 MTCO₂e per year. When combined with the amortized GHG emissions, the total annual Project emissions would be 276 MTCO₂e per year, which is below the SCAQMD's 3,000 MTCO₂e annual threshold. Thus, total Project GHG emissions would be less than significant.

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?

Regional Transportation Plan/Sustainable Communities Strategy Consistency

On September 3, 2020, SCAG's Regional Council adopted the 2020 RTP/SCS. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG's RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 as well as an overall GHG target for the Project region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of Executive Orders 5-03-05 and B-30-15.

The RTP/SCS contains over 4,000 transportation projects, ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs and replacement bridges. These future investments were included in county plans developed by the six county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices for everyone. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding.

The plan accounts for operations and maintenance costs to ensure reliability, longevity, and cost effectiveness. The RTP/SCS is also supported by a combination of transportation and land use strategies that help the region achieve state GHG emissions reduction goals and Federal Clean Air Act (FCAA) requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and utilize resources more efficiently. GHG emissions resulting from development-related mobile sources are the most potent source of emissions, and therefore Project comparison to the RTP/SCS is an appropriate indicator of whether the Project would inhibit the post-2020 GHG reduction goals promulgated by the state. The Project's consistency with the RTP/SCS goals is analyzed in detail in **Table 3: Regional Transportation Plan/Sustainable Communities Strategy Consistency**. The goals stated in the RTP/SCS were used to determine consistency with the planning efforts previously stated. As shown in **Table 3**, the proposed Project would be consistent with the stated goals of the RTP/SCS. Therefore, the proposed Project would not interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets.

Table 3: Regional Transportation Plan/Sustainable Communities Strategy Consistency	
<i>SCAG Goals</i>	<i>Compliance with Goal</i>
GOAL 1: Encourage regional economic prosperity and global competitiveness.	Not Applicable. This is not a project-specific policy and is therefore not applicable.
GOAL 2: Improve mobility, accessibility, reliability, and travel safety for people and goods.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 3: Enhance the preservation, security, and resilience of the regional transportation system.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 4: Increase person and goods movement and travel choices within the transportation system.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 5: Reduce greenhouse gas emissions and improve air quality.	Consistent. As discussed above, This Project proposed a six-level parking structure which would serve the adjacent existing medical offices and educational buildings and would not generate additional vehicle trips and no stationary sources are proposed.
GOAL 6: Support healthy and equitable communities.	Consistent. As noted above, the Project involves the development of parking structure that would serve the existing surrounding University uses.
GOAL 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	Not Applicable. This is not a transportation improvement project and is therefore not applicable.
GOAL 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	Not Applicable. The Project involves a parking structure that would serve the surrounding campus buildings and is not a housing development.
GOAL 10: Promote conservation of natural and agricultural lands and restoration of habitats.	Not Applicable. The Project is not located on agricultural lands. The Project site is located within the UCI campus is not within the Reserve System or identified special linkage areas.
Source: Southern California Association of Governments, <i>Connect SoCal 2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy</i> , 2020.	

California Air Resource Board Scoping Plan Consistency

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, CARB adopted the *Climate Change Scoping Plan* (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program. The 2017 Scoping Plan Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the first update to the Scoping Plan in 2013. Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets.

As shown in **Table 4: Project Consistency with Applicable CARB Scoping Plan Measures**, the Project is consistent with most of the strategies, while others are not applicable to the Project.

Table 4: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	Consistent. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	Consistent. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the Project would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	Consistent. The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the Project site would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	Consistent. This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the Project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related GHG Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	Consistent. The Project would provide development in the region that is consistent with the growth projections in the RTP/SCS.
	Goods Movement	Goods Movement Action Plan January 2007	Not applicable. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	Consistent. This measure applies to medium and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the Project would be required to comply with the requirements of this regulation.

Table 4: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	High Speed Rail	Funded under SB 862	Not applicable. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	Consistent. The Project would not conflict with implementation of this measure. The Project would comply with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	Consistent. The Project would obtain electricity from the UC Energy Services Unit (which is 100 percent carbon free power) via the UCI Combined Heat and Power Plant.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax Incentive Program	Consistent. This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would comply with the UCI and UC water efficiency policies which require a reduction in indoor and outdoor water use.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would implement required green building strategies consistent with the various 2019 CalGreen requirements.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	Not applicable. The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 MTCO ₂ e of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. As shown above, total Project GHG emissions would not exceed 10,000 MTCO ₂ e. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen code. The City has consistently achieved its state recycling mandates.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap and Trade Offset Projects	Not applicable. The Project is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	Not applicable. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The Project would not

Table 4: Project Consistency with Applicable CARB Scoping Plan Measures			
Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	Not applicable. The Project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the Project.
Source: California Air Resources Board, <i>California's 2017 Climate Change Scoping Plan</i> , November 2017 and CARB, <i>Climate Change Scoping Plan</i> , December 2008.			

UCI Climate Action Plan (CAP)

The UCI Climate Action Plan (CAP) was developed as a framework to enable the university to meet their GHG emissions target. As discussed above, the proposed parking structure would serve the adjacent existing medical offices and educational institutions and would not generate additional vehicle trips and no stationary sources are proposed. As discussed above, total Project GHG emissions would be 276 MTCO₂e per year, which is considered less than significant. As the project would serve existing uses and would not result in new vehicle trips or other growth, it would not conflict with UCI's GHG reduction goals addressed in the CAP.

Conclusion

As discussed above, the proposed Project would not interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets. Additionally, Project emissions would be indirectly reduced through the implementation of various Scoping Plan measures, such as the low carbon fuel standard, vehicle emissions standards, building energy efficiency standards, market-based mechanisms (such as the cap-and-trade program) and the Renewable Portfolio Standard. Therefore, the Project would not conflict with the Scoping Plan's recommended measures and, as such, would not impede implementation of the Scoping Plan. As such, impacts related to consistency with the Scoping Plan would be less than significant.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the proposed Project would benefit from the implementation of current and potential future regulations (e.g., improvements in vehicle emissions, SB 100/renewable electricity portfolio improvements, etc.) enacted to meet an 80 percent reduction below 1990 levels by 2050.

The Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for reducing the emissions of GHGs because the Project would generate low levels of GHGs, and would not impede implementation of the Scoping Plan, or conflict with the policies of the Scoping Plan or any other GHG reduction plan. Therefore, the impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 CUMULATIVE IMPACTS

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have much longer atmospheric lifetimes of 1 year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts

It is generally the case that an individual project of this 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 GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in above tables, the Project would not conflict with the RTP/SCS, CARB Scoping Plan, and/or UCI CAP. 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

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2. Google Earth Pro. Version 7.1.7.2602
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9. University of California, Irvine, *Climate Action Plan*, 2016.
10. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017*, 2019.
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 Health Sciences Parking Structure - Orange County, Annual

UCI Health Sciences Parking Structure

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	1,800.00	Space	6.10	650,000.00	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	Sierra Pacific Resources				
CO2 Intensity (lb/MW hr)	531.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

UCI Health Sciences Parking Structure - Orange County, Annual

Project Characteristics - Adjusted per the SCE 2019 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO₂e, the CO₂ intensity factor is calculated as $534-25 \times 0.029-298 \times 0.00617=531.4363$ to avoid double counting.

Land Use - Project acreage and square feet

Construction Phase - Anticipated Construction schedule

Off-road Equipment - No demolition phase

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Demolition -

Energy Use - Adjusted per 2019 title 24

Construction Off-road Equipment Mitigation - Adjusted per AQMD rule 403

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	230.00	234.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	8/22/2022	9/30/2022

UCI Health Sciences Parking Structure - Orange County, Annual

tblConstructionPhase	PhaseEndDate	6/27/2022	8/1/2022
tblConstructionPhase	PhaseEndDate	6/28/2021	5/31/2021
tblConstructionPhase	PhaseEndDate	8/9/2021	9/7/2021
tblConstructionPhase	PhaseEndDate	7/25/2022	8/22/2022
tblConstructionPhase	PhaseEndDate	7/12/2021	6/7/2021
tblConstructionPhase	PhaseStartDate	7/26/2022	6/1/2022
tblConstructionPhase	PhaseStartDate	8/10/2021	9/8/2021
tblConstructionPhase	PhaseStartDate	7/13/2021	6/8/2021
tblConstructionPhase	PhaseStartDate	6/28/2022	8/2/2022
tblConstructionPhase	PhaseStartDate	6/29/2021	6/1/2021
tblEnergyUse	LightingElect	1.75	1.23
tblGrading	MaterialExported	0.00	120,400.00
tblLandUse	LandUseSquareFeet	720,000.00	650,000.00
tblLandUse	LotAcreage	16.20	6.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1328.16	531.44
tblTripsAndVMT	WorkerTripNumber	0.00	15.00

2.0 Emissions Summary

UCI Health Sciences Parking Structure - Orange County, Annual

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					
2021	0.2746	4.0659	2.2607	0.0101	0.5554	0.0910	0.6464	0.2150	0.0848	0.2998	0.0000	978.0512	978.0512	0.1249	0.0000	981.1743
2022	0.3374	2.1034	2.2526	6.5400e-003	0.3049	0.0720	0.3769	0.0821	0.0678	0.1500	0.0000	598.6579	598.6579	0.0669	0.0000	600.3305
Maximum	0.3374	4.0659	2.2607	0.0101	0.5554	0.0910	0.6464	0.2150	0.0848	0.2998	0.0000	978.0512	978.0512	0.1249	0.0000	981.1743

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					
2021	0.2746	4.0659	2.2607	0.0101	0.3881	0.0910	0.4790	0.1332	0.0848	0.2179	0.0000	978.0510	978.0510	0.1249	0.0000	981.1741
2022	0.3374	2.1034	2.2525	6.5400e-003	0.2896	0.0720	0.3615	0.0784	0.0678	0.1462	0.0000	598.6577	598.6577	0.0669	0.0000	600.3303
Maximum	0.3374	4.0659	2.2607	0.0101	0.3881	0.0910	0.4790	0.1332	0.0848	0.2179	0.0000	978.0510	978.0510	0.1249	0.0000	981.1741

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	21.24	0.00	17.86	28.80	0.00	19.03	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2021	8-31-2021	2.7439	2.7439
2	9-1-2021	11-30-2021	1.1579	1.1579
3	12-1-2021	2-28-2022	0.9531	0.9531
4	3-1-2022	5-31-2022	0.9402	0.9402
5	6-1-2022	8-31-2022	0.8549	0.8549
6	9-1-2022	9-30-2022	0.0425	0.0425
		Highest	2.7439	2.7439

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	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	221.7123	221.7123	0.0121	2.5000e-003	222.7607
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0532	2.1000e-004	0.0230	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	8.0000e-005	8.0000e-005	0.0000	221.7570	221.7570	0.0122	2.5000e-003	222.8083

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2.2 Overall Operational**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	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	221.7123	221.7123	0.0121	2.5000e-003	222.7607
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0532	2.1000e-004	0.0230	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	8.0000e-005	8.0000e-005	0.0000	221.7570	221.7570	0.0122	2.5000e-003	222.8083

	ROG	NOx	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2021	5/31/2021	5	0	
2	Site Preparation	Site Preparation	6/1/2021	6/7/2021	5	5	
3	Grading	Grading	6/8/2021	9/7/2021	5	66	
4	Building Construction	Building Construction	9/8/2021	8/1/2022	5	234	
5	Paving	Paving	8/2/2022	8/22/2022	5	15	
6	Architectural Coating	Architectural Coating	6/1/2022	9/30/2022	5	88	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 33

Acres of Paving: 6.1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 39,000 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	0	8.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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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	0	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	6	15.00	0.00	15,050.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	273.00	107.00	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	55.00	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 - 2021

Unmitigated Construction On-Site

[illegible]

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3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

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3.2 Demolition - 2021**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.3 Site Preparation - 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					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	9.7200e-003	0.1012	0.0529	1.0000e-004	0.0452	5.1100e-003	0.0503	0.0248	4.7000e-003	0.0295	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265

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3.3 Site Preparation - 2021**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	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130

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					0.0193	0.0000	0.0193	0.0106	0.0000	0.0106	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	9.7200e-003	0.1012	0.0529	1.0000e-004	0.0193	5.1100e-003	0.0244	0.0106	4.7000e-003	0.0153	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265

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3.3 Site Preparation - 2021**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	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130

3.4 Grading - 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					
Fugitive Dust					0.2230	0.0000	0.2230	0.1122	0.0000	0.1122	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0756	0.8163	0.5233	9.8000e-004		0.0383	0.0383		0.0352	0.0352	0.0000	85.9772	85.9772	0.0278	0.0000	86.6724
Total	0.0756	0.8163	0.5233	9.8000e-004	0.2230	0.0383	0.2613	0.1122	0.0352	0.1474	0.0000	85.9772	85.9772	0.0278	0.0000	86.6724

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3.4 Grading - 2021**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	0.0548	1.9726	0.5370	5.6400e-003	0.1290	6.0600e-003	0.1350	0.0354	5.7900e-003	0.0412	0.0000	571.5579	571.5579	0.0602	0.0000	573.0633
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	1.8100e-003	1.2200e-003	0.0142	5.0000e-005	5.4300e-003	4.0000e-005	5.4700e-003	1.4400e-003	3.0000e-005	1.4800e-003	0.0000	4.5401	4.5401	1.0000e-004	0.0000	4.5425
Total	0.0566	1.9738	0.5513	5.6900e-003	0.1344	6.1000e-003	0.1405	0.0368	5.8200e-003	0.0426	0.0000	576.0980	576.0980	0.0603	0.0000	577.6058

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					0.0954	0.0000	0.0954	0.0480	0.0000	0.0480	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0756	0.8163	0.5233	9.8000e-004		0.0383	0.0383		0.0352	0.0352	0.0000	85.9771	85.9771	0.0278	0.0000	86.6723
Total	0.0756	0.8163	0.5233	9.8000e-004	0.0954	0.0383	0.1336	0.0480	0.0352	0.0832	0.0000	85.9771	85.9771	0.0278	0.0000	86.6723

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3.4 Grading - 2021**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	0.0548	1.9726	0.5370	5.6400e-003	0.1231	6.0600e-003	0.1292	0.0339	5.7900e-003	0.0397	0.0000	571.5579	571.5579	0.0602	0.0000	573.0633
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	1.8100e-003	1.2200e-003	0.0142	5.0000e-005	5.1500e-003	4.0000e-005	5.1900e-003	1.3700e-003	3.0000e-005	1.4100e-003	0.0000	4.5401	4.5401	1.0000e-004	0.0000	4.5425
Total	0.0566	1.9738	0.5513	5.6900e-003	0.1283	6.1000e-003	0.1344	0.0353	5.8200e-003	0.0411	0.0000	576.0980	576.0980	0.0603	0.0000	577.6058

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	0.0789	0.7234	0.6879	1.1200e-003		0.0398	0.0398		0.0374	0.0374	0.0000	96.1295	96.1295	0.0232	0.0000	96.7093
Total	0.0789	0.7234	0.6879	1.1200e-003		0.0398	0.0398		0.0374	0.0374	0.0000	96.1295	96.1295	0.0232	0.0000	96.7093

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3.5 Building Construction - 2021**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	0.0121	0.4231	0.1186	1.0800e-003	0.0280	8.8000e-004	0.0288	8.0600e-003	8.4000e-004	8.9000e-003	0.0000	107.1619	107.1619	8.6700e-003	0.0000	107.3788
Worker	0.0415	0.0279	0.3255	1.1500e-003	0.1244	8.2000e-004	0.1252	0.0330	7.5000e-004	0.0338	0.0000	103.9130	103.9130	2.2300e-003	0.0000	103.9686
Total	0.0536	0.4510	0.4441	2.2300e-003	0.1523	1.7000e-003	0.1540	0.0411	1.5900e-003	0.0427	0.0000	211.0749	211.0749	0.0109	0.0000	211.3474

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	0.0789	0.7234	0.6879	1.1200e-003		0.0398	0.0398		0.0374	0.0374	0.0000	96.1294	96.1294	0.0232	0.0000	96.7092
Total	0.0789	0.7234	0.6879	1.1200e-003		0.0398	0.0398		0.0374	0.0374	0.0000	96.1294	96.1294	0.0232	0.0000	96.7092

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3.5 Building Construction - 2021**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	0.0121	0.4231	0.1186	1.0800e-003	0.0268	8.8000e-004	0.0276	7.7700e-003	8.4000e-004	8.6100e-003	0.0000	107.1619	107.1619	8.6700e-003	0.0000	107.3788
Worker	0.0415	0.0279	0.3255	1.1500e-003	0.1179	8.2000e-004	0.1187	0.0314	7.5000e-004	0.0322	0.0000	103.9130	103.9130	2.2300e-003	0.0000	103.9686
Total	0.0536	0.4510	0.4441	2.2300e-003	0.1447	1.7000e-003	0.1464	0.0392	1.5900e-003	0.0408	0.0000	211.0749	211.0749	0.0109	0.0000	211.3474

3.5 Building Construction - 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	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9526	174.9526	0.0419	0.0000	176.0004
Total	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9526	174.9526	0.0419	0.0000	176.0004

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3.5 Building Construction - 2022**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	0.0207	0.7274	0.2082	1.9500e-003	0.0509	1.3900e-003	0.0523	0.0147	1.3300e-003	0.0160	0.0000	193.0349	193.0349	0.0153	0.0000	193.4167
Worker	0.0715	0.0460	0.5520	2.0100e-003	0.2263	1.4600e-003	0.2277	0.0601	1.3500e-003	0.0614	0.0000	182.0476	182.0476	3.6700e-003	0.0000	182.1395
Total	0.0922	0.7734	0.7601	3.9600e-003	0.2771	2.8500e-003	0.2800	0.0748	2.6800e-003	0.0774	0.0000	375.0825	375.0825	0.0189	0.0000	375.5562

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	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9524	174.9524	0.0419	0.0000	176.0002
Total	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9524	174.9524	0.0419	0.0000	176.0002

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3.5 Building Construction - 2022**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	0.0207	0.7274	0.2082	1.9500e-003	0.0487	1.3900e-003	0.0501	0.0141	1.3300e-003	0.0155	0.0000	193.0349	193.0349	0.0153	0.0000	193.4167
Worker	0.0715	0.0460	0.5520	2.0100e-003	0.2145	1.4600e-003	0.2160	0.0572	1.3500e-003	0.0586	0.0000	182.0476	182.0476	3.6700e-003	0.0000	182.1395
Total	0.0922	0.7734	0.7601	3.9600e-003	0.2632	2.8500e-003	0.2660	0.0713	2.6800e-003	0.0740	0.0000	375.0825	375.0825	0.0189	0.0000	375.5562

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	8.2700e-003	0.0834	0.1094	1.7000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	15.0207	15.0207	4.8600e-003	0.0000	15.1421
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.2700e-003	0.0834	0.1094	1.7000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	15.0207	15.0207	4.8600e-003	0.0000	15.1421

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3.6 Paving - 2022**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	3.9000e-004	2.5000e-004	3.0100e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	0.9936	0.9936	2.0000e-005	0.0000	0.9941
Total	3.9000e-004	2.5000e-004	3.0100e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	0.9936	0.9936	2.0000e-005	0.0000	0.9941

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	8.2700e-003	0.0834	0.1094	1.7000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	15.0207	15.0207	4.8600e-003	0.0000	15.1421
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.2700e-003	0.0834	0.1094	1.7000e-004		4.2600e-003	4.2600e-003		3.9200e-003	3.9200e-003	0.0000	15.0207	15.0207	4.8600e-003	0.0000	15.1421

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3.6 Paving - 2022**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	3.9000e-004	2.5000e-004	3.0100e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9936	0.9936	2.0000e-005	0.0000	0.9941
Total	3.9000e-004	2.5000e-004	3.0100e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9936	0.9936	2.0000e-005	0.0000	0.9941

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	0.0904					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-003	0.0620	0.0798	1.3000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	11.2343	11.2343	7.3000e-004	0.0000	11.2526
Total	0.0994	0.0620	0.0798	1.3000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	11.2343	11.2343	7.3000e-004	0.0000	11.2526

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3.7 Architectural Coating - 2022**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	8.3900e-003	5.4000e-003	0.0648	2.4000e-004	0.0266	1.7000e-004	0.0267	7.0600e-003	1.6000e-004	7.2100e-003	0.0000	21.3743	21.3743	4.3000e-004	0.0000	21.3850
Total	8.3900e-003	5.4000e-003	0.0648	2.4000e-004	0.0266	1.7000e-004	0.0267	7.0600e-003	1.6000e-004	7.2100e-003	0.0000	21.3743	21.3743	4.3000e-004	0.0000	21.3850

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	0.0904					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-003	0.0620	0.0798	1.3000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	11.2343	11.2343	7.3000e-004	0.0000	11.2526
Total	0.0994	0.0620	0.0798	1.3000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	11.2343	11.2343	7.3000e-004	0.0000	11.2526

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3.7 Architectural Coating - 2022**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	8.3900e-003	5.4000e-003	0.0648	2.4000e-004	0.0252	1.7000e-004	0.0254	6.7200e-003	1.6000e-004	6.8700e-003	0.0000	21.3743	21.3743	4.3000e-004	0.0000	21.3850
Total	8.3900e-003	5.4000e-003	0.0648	2.4000e-004	0.0252	1.7000e-004	0.0254	6.7200e-003	1.6000e-004	6.8700e-003	0.0000	21.3743	21.3743	4.3000e-004	0.0000	21.3850

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking with Elevator	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

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Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

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5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Mitigated

[illegible]

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unenclosed Parking with Elevator	919750	221.7123	0.0121	2.5000e-003	222.7607
Total		221.7123	0.0121	2.5000e-003	222.7607

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unenclosed Parking with Elevator	919750	221.7123	0.0121	2.5000e-003	222.7607
Total		221.7123	0.0121	2.5000e-003	222.7607

6.0 Area Detail**6.1 Mitigation Measures Area**

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	ROG	NOx	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	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476
Unmitigated	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476

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	9.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1400e-003	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476
Total	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476

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6.2 Area by SubCategory**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	9.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1400e-003	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476
Total	0.0532	2.1000e-004	0.0230	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0447	0.0447	1.2000e-004	0.0000	0.0476

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation

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APPENDIX D
Traffic Study



**UCI Health Sciences Parking
Structure Transportation Impact
Analysis**

University of California, Irvine

April 6, 2021

Prepared for:

UC Irvine Physical and Environmental
Planning


Prepared by:

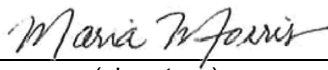
Stantec Consulting Service Inc.



UCI HEALTH SCIENCES PARKING STRUCTURE TRANSPORTATION IMPACT ANALYSIS

This document entitled UCI Health Sciences Parking Structure Transportation Impact Analysis was prepared by Stantec ("Stantec") for the account of UC Irvine Physical and Environmental Planning (the "Client"). The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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UCI HEALTH SCIENCES PARKING STRUCTURE TRANSPORTATION IMPACT ANALYSIS

Introduction
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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a transportation impact analysis for the proposed University of California Irvine (UCI) Health Science Parking Structure (Project). The purpose of this study is to determine significant impacts on the surrounding transportation system with the implementation of the Project. This analysis was prepared in support of the Project's environmental documentation, in accordance with the California Environmental Quality Act (CEQA) and focuses on vehicle miles traveled (VMT) as the primary metric for identifying significant impacts.

1.1 PROJECT DESCRIPTION

The proposed Project would construct an approximately six-story parking structure, approximately 650,000 square feet, including 1,900 parking spaces on the site within the Health Sciences Quad on the UCI West Campus. The structure would provide vehicular access to the Health Sciences Quad for faculty, staff, students, and off-campus visitors and patients. Additional proposed improvements include pedestrian and bicycle paths, landscaping, vehicular arrival court and drop-off loop, and a pedestrian bridge connecting to the College of Health Sciences.

Main access to the Project would be made via the existing Theory and California Avenue intersection where the Project would construct a fourth leg and install a traffic signal. A secondary access would be available via vehicular roadways from within the UCI Health Sciences Quad.

The Project site is shown in **Figure 1-1**. The proposed Project Site plan is illustrated in **Figure 1-2**.

1.1.1 UCI Long Range Development Plan (LRDP)

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 as 'Academic & Support' and 'Income-Producing Inclusion Area'. The project is consistent with the 2007 LRDP land use designations of Transportation, Income-Producing Inclusion Area, and Open Space – General. A majority of the project, including the parking structure and vehicular circulation elements, falls within the Transportation and Income-Producing Inclusion Area land use designations, both of which allow for parking. Some landscaping and a pedestrian path are proposed to be located within the area designated as Open Space – General, which allows for both uses.

The Project site is located in the UCI Main Campus Traffic Model (MCTM) in traffic analysis zones (TAZ) 17/41/74 which includes Student, UCI Staff, General Parking, UCI Research and Development, and Medical Clinic uses. The Project does not result in an increase to enrollment levels and would not surpass the capacities analyzed in the LRDP Environmental Impact Report (EIR).



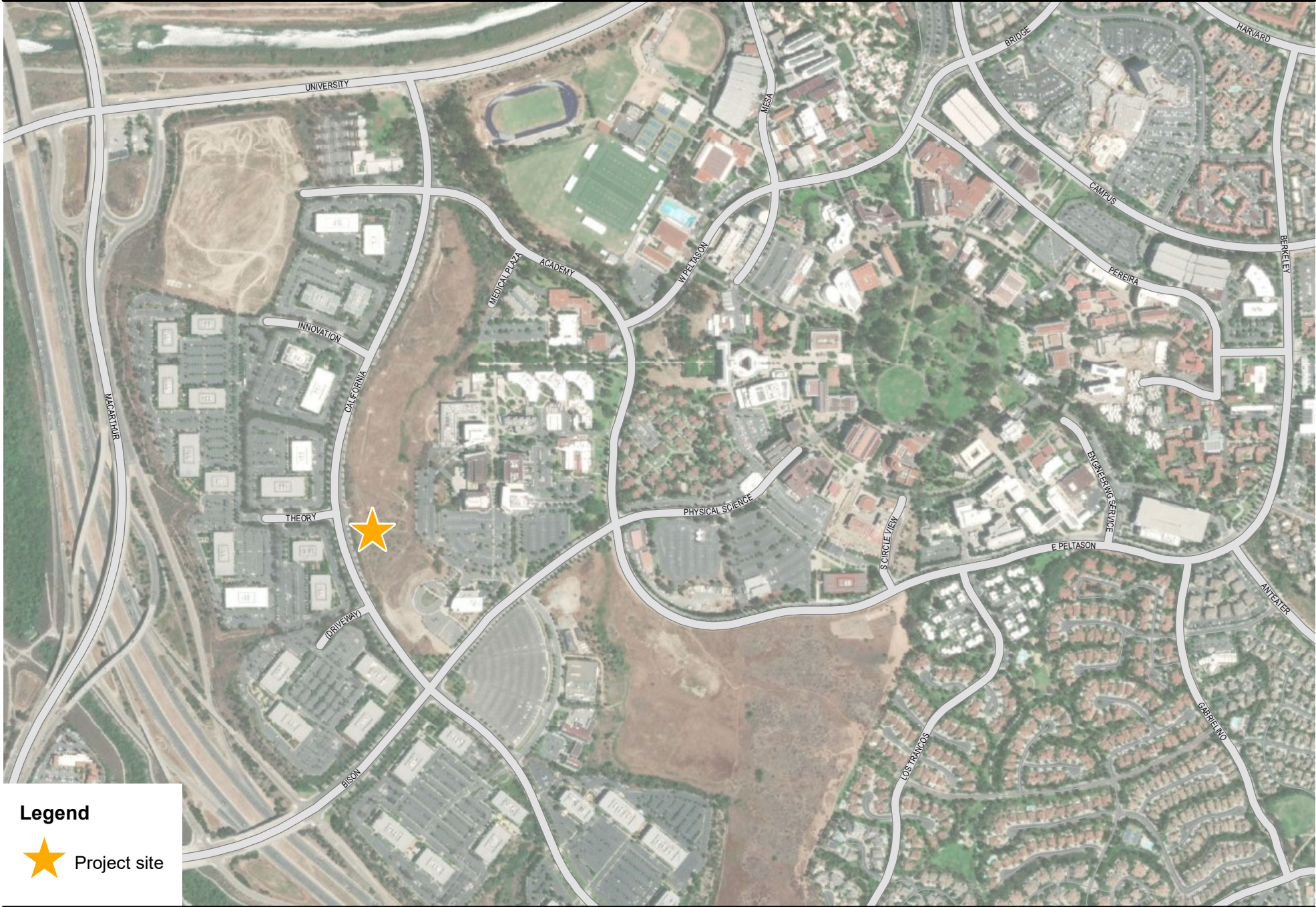


Figure 1-1
Project Location
1.2

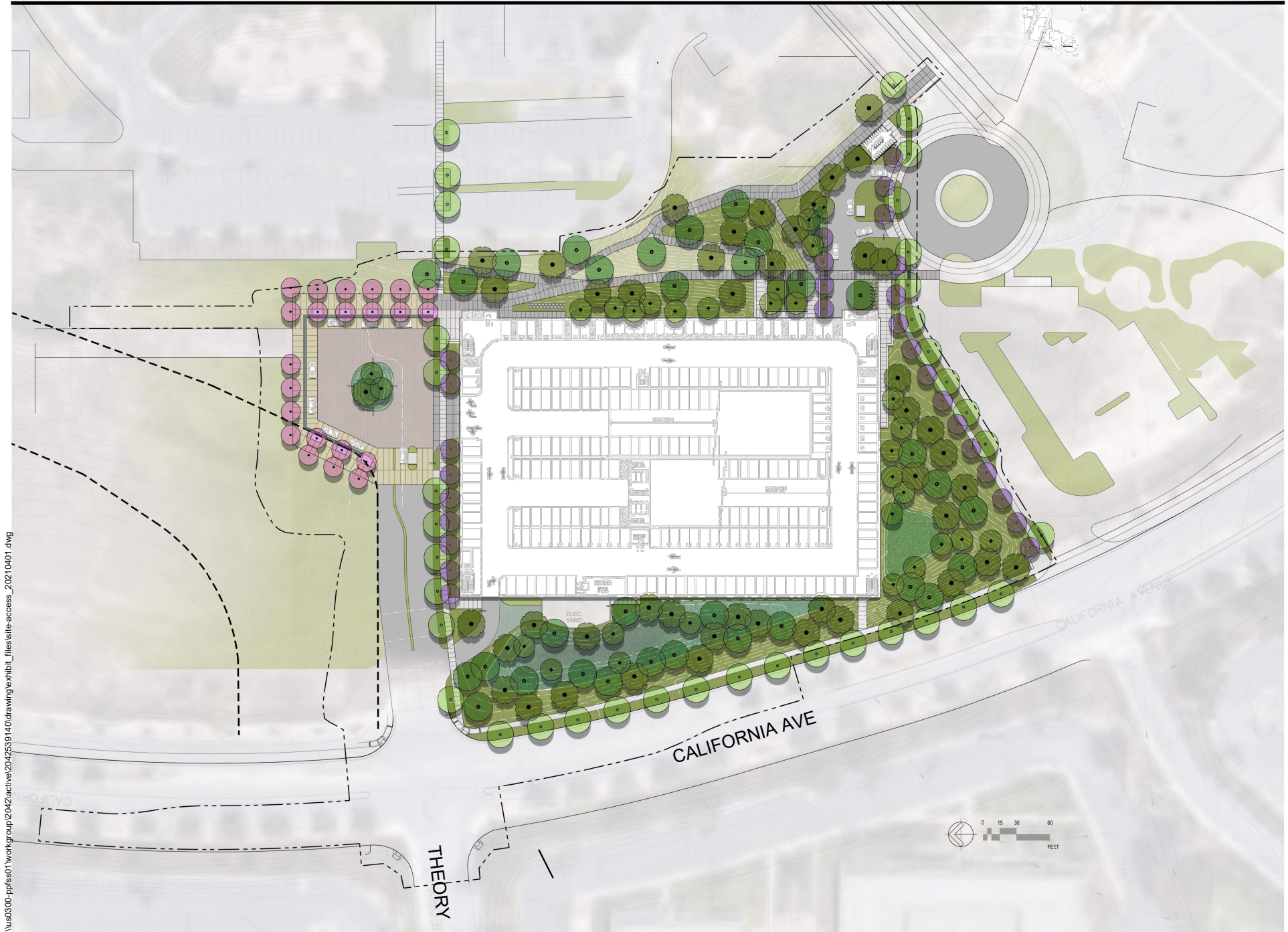


Figure 1-2

Proposed Project Site Plan

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1.2 PROJECT ACCESS

Access to the Project can be made by vehicle, by bicycle, and by walking primarily via California Avenue and Theory, or through the COHS area. Vehicles entering at Theory would have the option to use the 'staff-only' entrance immediately to the right or proceed straight to a general entrance into the parking structure. A second lane would also be available that would allow vehicles to turn into a drop-off and loading zone before exiting at the Theory and California Avenue intersection.

Sidewalks are provided on California Avenue, which will provide pedestrian access. A system of pedestrian walkways, including a pedestrian bridge, will be constructed to connect the parking structure with the campus. Bicycles would be able to use these facilities.

A secondary access would be available via vehicular roadways from within the UCI Health Sciences Quad. The Project's site access is illustrated in **Figure 1-3**.

1.3 EXISTING ROADWAY SYSTEM

The UCI campus is located in the southwest portion of the City of Irvine. The roadways near the Project site include Theory, California Avenue, Academy Way to the north and Bison Avenue to the south.

Theory is a short cul-de-sac that primarily provides access to the research and industrial center. The roadway begins at California Avenue and terminates at a driveway into a parking lot. The roadway is a two-lane undivided roadway.

California Avenue is designated as a Primary Highway in the City of Irvine General Plan Circulation Element 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 45 mph from University Drive to Bison Avenue and 35 mph from Bison Avenue to Health Science Road. On-street parking is not allowed, and a striped bike lane is provided.

Academy Way is a two-lane undivided roadway that extends from California Avenue and turns into West Peltason Drive. The posted speed limit is 35 mph and a striped bike lane is provided on both sides of the roadway. There are no existing sidewalks and on-street parking is not allowed.

Bison Avenue near the UCI campus is a four-lane divided roadway with a posted speed limit of 45 mph. West of California Avenue it is designated as a Primary Highway in the City of Irvine General Plan Circulation Element. On-street class II bike lanes are provided on both sides of the roadway and on-street parking is not allowed.



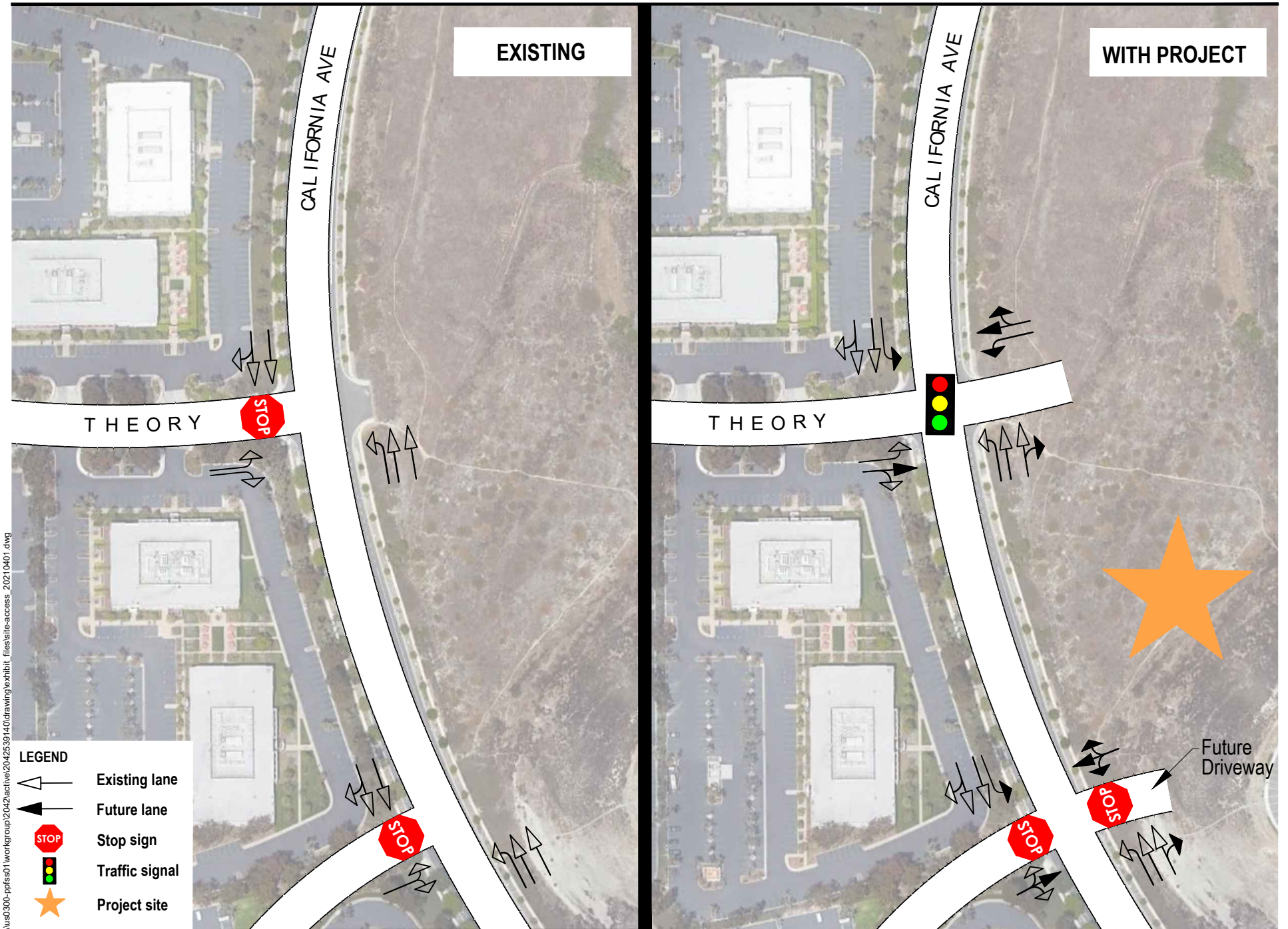


Figure 1-3

Site Access - California Ave at Theory

1.4 ACTIVE TRANSPORTATION AND EXISTING TRANSIT

Active transportation is well supported in the Project vicinity, with on-street bicycle lanes provided on both sides of California Avenue, which connect with on-campus facilities as well as the wider City of Irvine bicycle infrastructure network. A detailed description of cycling facilities is provided in Section 3.2.

The Project is located near OCTA bus stops. OCTA provides services to the wider regional network, including Tustin Metrolink Station. Less than a half mile is a stop for the Anteater Express shuttle services. Anteater Express services provide access to destinations both on and off the UCI campus. Further details on transit connections to the Project are provided in Section 3.1.3.



2.0 TRANSPORTATION IMPACT ANALYSIS METHODOLOGY

Updated CEQA guidelines have gone into effect statewide that include sections created by Senate Bill 743 (SB 743). The University of California has adopted the new CEQA guidelines making VMT the metric for evaluating transportation impacts.

2.1 SIGNIFICANCE THRESHOLDS

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 instead use VMT. OPR's Technical Advisory provides guidance on evaluating transportation impacts is the guidance on which this analysis is based on.

Prior to undertaking a full VMT analysis, OPR's Technical Advisory 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". The Project was evaluated using the screening criteria recommended in both OPR's Technical Advisory and the City of Irvine's VMT Guidelines. The screening criteria used in this analysis is shown in **Table 2-2**.

OPR's Technical Advisory recommended significance thresholds for identifying transportation impacts are generally categorized by residential development, office development, retail development, land use plans and transportation projects. The Project would construct a parking structure which does not fall into the general categories listed above. OPR's Technical Advisory and the City of Irvine's VMT Guidelines does not provide recommendations for evaluating unique projects such as a parking structure, therefore in addition to the screening criteria, a qualitative analysis has been conducted.

The Project's ability to achieve the VMT metric's statutory goals related to the development of multimodal transportation networks, a diversity of land uses, RTP/SCS Consistency, and the reduction of greenhouse gas emissions is also evaluated.

This analysis utilizes the significant criteria shown in **Table 2-2**.



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Table 2-1 VMT Significance Criteria

Category	Criteria/Screening	Threshold
1. Screening Thresholds	<p>OPR's Technical Advisory and the City of Irvine's VMT Guidelines provides screening thresholds for land use projects. These screening thresholds include:</p> <ol style="list-style-type: none"> 1. Trip generation screening – Small projects can be screen out from completing a full VMT analysis. 2. Map-based screening – Projects located in areas with low VMT can be screened out from completing a full VMT analysis. 3. Proximity to transit – Projects within 0.5 mile of a major transit stop or stops along a high-quality transit corridor reduce VMT and therefore can be screened out from completing a full VMT analysis. Four other criteria must be met regarding Floor Area Ratio, parking, affordable housing units, and consistency with the applicable SCS. 4. Locally-serving retail – Retail that is 50,000 square feet or smaller are generally considered locally serving and can be screened out from completing a full VMT analysis. 5. Affordable residential development – 100% affordable housing in infill locations can be screened out from completing a full VMT analysis. <p>Evaluate the Project using the screening thresholds.</p>	<ol style="list-style-type: none"> 1. Per OPR Technical Advisory, if the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact. City of Irvine uses a threshold of 250 trips/day. 2. Per OPR Technical Advisory, if the Project is in a low VMT area, the Project is assumed to have a less than significant impact. The City of Irvine does not use the map-based screening criteria. 3. Per OPR Technical Advisory, If the Project is within 0.5 mile of a high-quality transit stop/corridor, and meet the other requirements, the Project is assumed to have less than significant impact. The City of Irvine has identified two Transit Priority Areas (TPA) in the City. 4. Per OPR Technical Advisory, if the retail component is less than 50,000 then the retail is assumed to have a less than significant impact. The City of Irvine considers retail of 100,000 or smaller as locally serving. 5. Per OPR Technical Advisory and the City of Irvine, if the Project consists of 100% affordable units and located in infill, then the Project is assumed to have less than significant impact.
2. Multi-modal transportation	<p>Providing alternative modes of transportation that has high accessibility and connectivity reduces VMT, single occupancy vehicles (SOV), and VMT per capita. Identify existing pedestrian, bicycle and transit facilities that provide alternative modes of transportation in place of a SOV.</p> <p>Evaluate the accessibility and connectivity of pedestrian, bicyclist, and transit facilities around the Project site.</p>	<p>If the Project restricts access or alters a route, this may indicate a significant impact.</p>
3. Diversity of land uses	<p>Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT.</p> <p>Evaluate the surrounding uses of the Project and the interaction between land use and transportation.</p>	<p>If the Project is complementary and consistent with the existing land use patterns, then the Project is assumed to have a less than significant impact.</p>
4. RTP/SCS Consistency	<p>The purpose of the RTP/SCS is to evaluate regional land use patterns and transportation systems to achieve the State's target GHG emissions reduction goals.</p> <p>Evaluate if the Project is consistent with the RTP/SCS. The Project's cumulative effects are determined through consistency with the RTP/SCS.</p>	<p>If the Project is consistent with the RTP/SCS, then the Project would have less than significant cumulative impact. If the Project is inconsistent then the inconsistency should be evaluated for a significant impact on transportation.</p>
5. Reduction of greenhouse gas emissions	<p>Identify existing TDM measures that increase vehicle efficiency, reduce amount of vehicle travel, improve human health, reduce vehicle crashes, improve air quality, improve physical and mental health, and encourage use of transit.</p> <p>Evaluate if the Project would eliminate or reduce the existing TDM measures.</p>	<p>If the Project is not anticipated to eliminate or reduce any existing TDM measures, the Project is assumed to have a less than significant impact.</p>



3.0 TRANSPORTATION IMPACT ANALYSIS

3.1 SCREENING EVALUATION

Lead agencies may presume a project has a less than significant impact on VMT using a screening criteria that considers the Project's project size, location in a low VMT area, transit availability and provision of affordable housing.

3.1.1 Trip Generation Screening

OPR's Technical Advisory recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than significant transportation impact. The City of Irvine Guidelines utilizes a threshold of 250 trips per day.

In general, parking lots and parking structures do not generate traffic on their own. The traffic that utilizes parking lots and structures is drawn to the land uses associated with the parking lot/structure. In this case, the Project would provide parking primarily for the UCI COHS campus area but may also be used by students, staff, faculty, and visitors for other campus destinations. Specifically, the Project is adjacent to the Health Sciences and Biomedical Research Center in UCI's West Campus; however, the Project may be used to visit various areas throughout the campus. If the Project is not constructed, students, staff, faculty, and visitors would utilize other parking locations. In general, the Project would not increase or decrease the number of trips visiting the campus. Rather, by constructing a parking structure that provides high accessibility to alternative modes of transportation (i.e., adjacent pedestrian and bicycle paths and transit stops) to travel around the campus, VMT would be reduced by reducing the amount of driving on-campus.

Since the proposed Project would not generate traffic on its own, the Project's impact can be presumed to be less than significant.

3.1.2 Map-Based Screening

OPR's Technical Advisory recommends projects located in areas with low VMT per capita can be presumed to have less than significant impact to VMT. The City of Irvine does not use a map-based resource. Therefore, this screening threshold has not been used for the proposed Project.

3.1.3 Proximity to High Quality Transit

OPR's Technical Advisory suggests that a project can be presumed to have a less than significant impact on VMT if the project is within a half-mile of an "existing major transit stop or an existing stop along a high-quality transit corridor". A major transit stop is defined as "the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods". A high-quality transit corridor is defined as an existing corridor with fixed route bus



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service with service intervals no longer than 15 minutes during peak commute hours. Based on the definition of a high-quality transit corridor, the Project is located within a half mile of a high-quality transit corridor and can be presumed to have a less than significant impact on VMT.

Anteater Express is UCI's transit system that provides transportation to various areas on and off the UCI Campus. Anteater Express is an attractive mode of transportation because of the short distance stops and fare. UCI also provides enhanced services that increases the ease of using the shuttle service such as the on-line Live Bus Tracking system that give real time data of the buses in service. An application is also available for download that allow users to view the shuttle's location.

UCI runs Anteater Express services in the vicinity of the Project. An Anteater Express stop is located less than a half mile from the Project on West Peltason Drive just west of Bison Avenue, providing access to the Anteater Express M Line. The shuttle stop is located at a bus turnout on the north side of the roadway (westbound on West Peltason Drive). Headways for the M Line are 7 minutes during the morning, 10 minutes during the afternoon to 7:00pm, and 25 minutes after 7:00pm. Therefore, the Anteater Express M line would be considered a high-quality transit corridor since service intervals are no longer than 15 minutes during peak on-campus commute hours (see **Figure 3-1** for map).

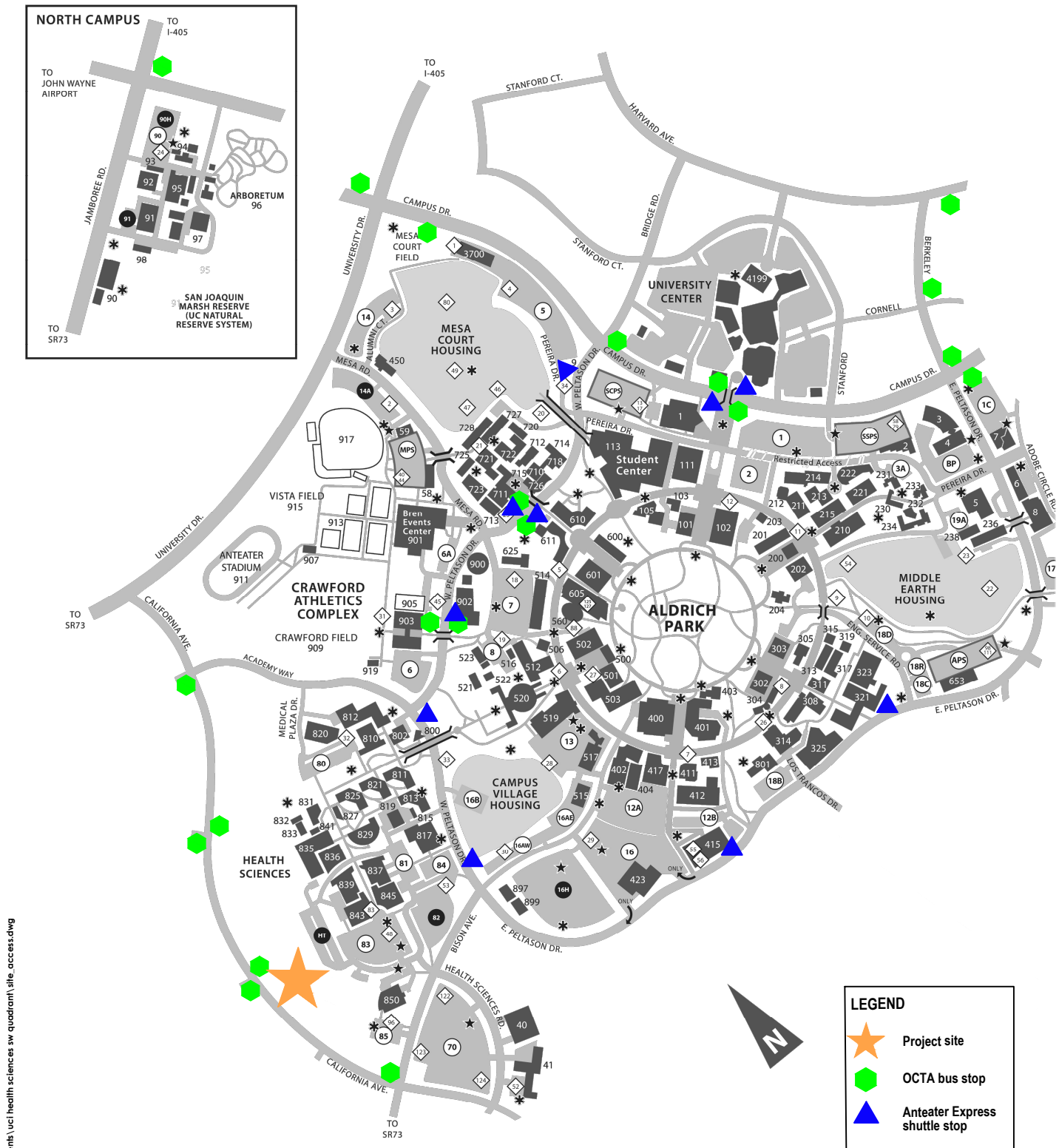
Parking behavior for a University, such as UCI, differs from parking structures for a typical residential development or office building development in that most users of the parking structure park once and use alternative modes of transportation to get in and around the campus, provided that alternative modes of transportation are accessible. When students, faculty and staff visit the campus, it is typical that the visitor parks in a parking lot or structure for an extended period. A person may walk, bike, or use the shuttle to get to their destination on-campus. Rather than returning to their vehicle to drive to their next on-campus destination, a person would likely walk, bike, or use the shuttle. This type of trip-making pattern reduces VMT in comparison to using a personal vehicle to get to each destination. The accessibility of having a shuttle stop with headways of 7 to 10 minutes throughout the day encourages transit usage and reduces single occupancy vehicle trips.

In addition, four supplementary criteria would need to be met under this screening category. When considering floor area ratio for a development, parking structures are typically excluded¹. The amount of spaces proposed for the Project does not include more parking than required by the UCI campus. The Project is consistent with the RTP/SCS (see discussion in Section 3.4). Lastly, the project does not replace affordable residential units.

Since the Project is located within a half mile of a stop along a high-quality transit corridor, the Project's impact can be presumed to be less than significant.

¹ Chapter 2.7: Modernization of Transportation Analysis for Transit-Oriented Infill Project, 2019 CEQA Statute & Guidelines, Association of Environmental Professionals, 2019.





source: <https://parking.uci.edu/maps/documents/2020-UCI-CampusCoreMap.pdf>



Figure 3-1

Anteater Express Shuttle and OCTA Bus Stops

3.1.4 Affordable Housing

OPR's Technical Advisory and the City of Irvine's Guidelines state that affordable housing projects located in infill locations can be assumed to have a less than significant impact. The proposed Project does not apply to this screening threshold.

3.2 MULTIMODAL TRANSPORTATION NETWORKS ANALYSIS

A qualitative analysis has been conducted to evaluate the Project's compliance with the VMT statutory goals.

A goal of utilizing the VMT metric is to facilitate the "development of multimodal transportation networks". A multimodal transportation network provides opportunities for people to safely get to their destinations by means other than a single occupancy vehicle. Multimodal networks are a component of a "Complete Street" that address the needs of pedestrians, bicyclists, transit riders and motorists. OPR's Technical Advisory notes that the increase in transit ridership "should not be considered an adverse impact", noting that while the increase in ridership may slow transit service, it adds accessibility, destinations and proximity. When choices in transportation are available, single occupancy vehicle VMT is reduced. Projects that block access, remove, or interfere with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

The Project is accessible by Class II bicycle lanes on California Avenue. There are also bicycle lanes on the nearby roadways such as Bison Avenue and Academy Way. The bicycle lanes connect to the wider bicycle network in and around the UCI campus. The accessibility of bicycle facilities would encourage visitors to park their vehicle in the parking structure and bike to get to multiple destinations around the campus. As shown in **Figure 3-2**, the around the campus are bike accessible roadways, dedicated bike paths, and pedestrian/bike shared paths. There are also numerous bike rack locations throughout the campus.

The bike accessible roadways shown in **Figure 3-2** include facilities that are part of the City of Irvine's bicycle network. The City of Irvine's 2015 Active Transportation Plan shows that the existing bicycle facilities around the UCI campus, except for Campus Drive, are low stress facilities, meaning the level of stress a bicyclist feels while using the facilities are low. The low level of stress creates a more pleasurable and appealing ride that would encourage students to ride their bike to get around campus.

UCI has a robust bicycle program that promotes bicycle transportation. In addition to bicycle infrastructure, UCI has BikeUCI Ambassadors, a Bicycle Advisory Group, and Bicycle Education and Enforcement (B.E.E.P). In addition, UCI is a gold level "Bicycle Friendly University" and offers bicycle facilities, education and amenities such as bike registration, parking racks, bike festival, low cost bike sales, self-service bike repair stands and air pumping stations, and bike shops.

As previously discussed in Section 3.1.3, there are transit stops within a half mile of the project site that provides an alternative mode of travel to get around the campus.



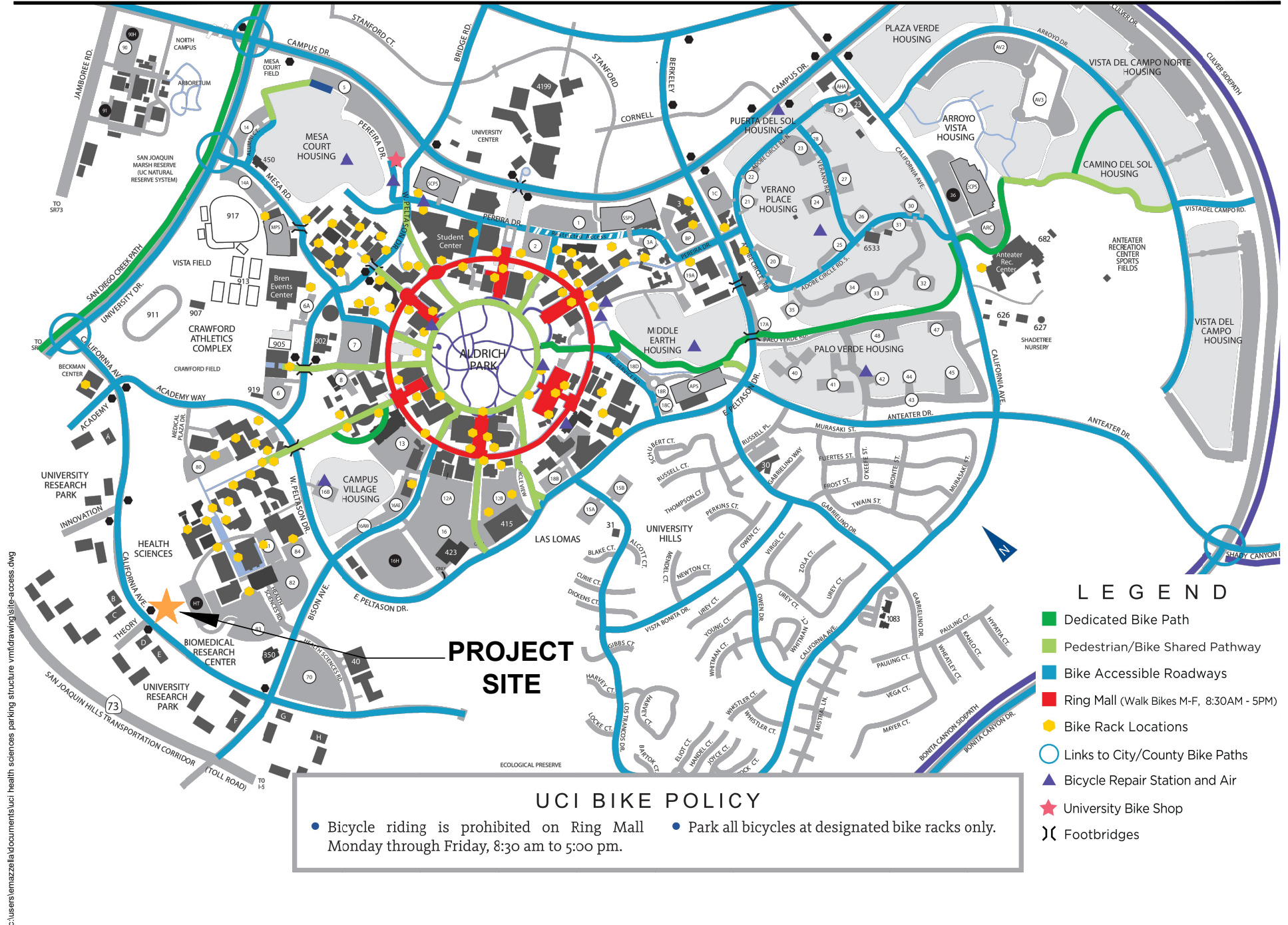


Figure 3-2
Bicycle Facilities

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The development of the Project would not remove any existing pedestrian or bicycle facilities, or shuttle/bus stops. Rather, the Project would enhance such facilities through the site development design process. Pedestrian walkways will be provided which will link sidewalks on California Avenue to the Health Sciences campus, providing pedestrian access to the UCI campus. Since the Project is enhancing the multimodal transportation network, the Project would have less than significant impact on VMT based on the multimodal transportation threshold.

3.3 DIVERSITY OF LAND USES

The Project has also been evaluated with consideration to diversity of land uses. OPR's Technical Advisory notes that new land use projects alone will not reduce VMT, however "interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT".

The 2007 LRDP identified general land use developments to support future campus growth, including parking growth. Development of the LRDP and the resulting mix of land use contained in the 2007 LRDP follow planning principles that reflect the desired character for the campus. The principles are as follows²:

1. Accommodate the physical resources needed to support strategic academic goals
2. Provide access while maintaining environmental quality
3. Build a cohesive academic community
4. Build and maintain quality residential neighborhoods
5. Establish centers of activity to promote campus life
6. Maintain human scale
7. Maintain planning discipline to optimize valuable land resources
8. Manage transportation needs proactively
9. Unify the campus with linkages
10. Preserve and enhance open space corridors to balance campus development
11. Develop high-quality edges with neighboring communities
12. Promote sustainable development practices

Application of such principles has created a campus with a diversity of land uses and a complimentary transportation network that has VMT reducing outcomes. This is reflected in the 2017 student survey that indicated 79 percent of students are using sustainable transportation methods such as walking, biking, transit, carpooling, or vanpooling. If a future project is contained within the LRDP or is consistent with the land use patterns of the LRDP, then the project would have less than significant impact on VMT.

The Project is consistent with the 2007 LRDP, meaning this Project was strategically planned to balance the uses of the campus. Therefore, since the Project is consistent with the LRDP, and the LRDP was developed with sustainable development practices that balance land use, the environment and transportation, the Project would have less than significant impact on VMT based on the diversity of land use screening threshold.

² 2007 Long Range Development Plan, A Framework to Guide Physical Development at the University of California, Irvine, Through 2025-2026, November 2007.



3.4 REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGIES CONSISTENCY

The Project has also been evaluated with consideration to consistency with RTP/SCS. Generally, a Project's cumulative effects are determined through consistency with the RTP/SCS. Projects that are consistent with the RTP/SCS would have less than significant cumulative impact on VMT.

The UCI campus is located within the SCAG MPO region. An update to the RTP/SCS was undertaken in 2019/2020 for the 2020-2045 RTP/SCS, also known as Connect SoCal. In May 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only, and the full adoption occurred on September 3, 2020.

According to the SCAG website, for the Connect SoCal effort SCAG utilized a "Bottom-Up Local Input and Envisioning Process" where feedback is solicited from local jurisdictions on localized information such as base land use and anticipated socio-economic growth (populations, employment, household). This information is typically a component of the City's General Plan.

The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive update in 2000. Since then, the City has been growing and is now in the process of Phase 2 of their comprehensive General Plan Update. The City of Irvine and UCI have a long-standing history of cooperation regarding campus planning, and future growth and coordination has been made between UCI's LRDP and the City's General Plan. Therefore, growth assumed in UCI's LRDP is reflected in the City's General Plan and this type of information is supplied to SCAG during their Bottom-Up Local Input and Envisioning process. The Project is fully accounted for in the growth allocated by the 2007 LRDP.

Therefore, since the Project was accounted for in the approved 2007 LRDP, the Project would be consistent with the latest RTP/SCS, Connect SoCal, and would have a less than significant cumulative impact on transportation based on this consistency criteria.

3.5 TDM STRATEGIES FOR THE REDUCTION OF GREENHOUSE GAS EMISSIONS ANALYSIS

A goal of utilizing the VMT metric for evaluation of transportation impacts is to reduce GHG levels. TDM measures are important and effective tools to reduce GHG, increasing vehicle efficiency and reducing the amount of VMT. UCI proactively utilizes TDM measures through UCI's Sustainable Transportation Program, which complies with the UC's Sustainable Transportation Policy Goals, and the Project has been developed with these policy goals.

3.5.1 UCI Sustainable Transportation Program

UCI proactively utilizes TDM measures. UCI's Sustainable Transportation Program utilizes various TDM measures and was created with the goal to "reduce the total number of vehicle trips made to the campus by faculty, staff and students and reduce commute emissions". Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.11 (based on



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2019 SCAQMD survey), the highest of any employer greater than 3,000 in the Orange, Los Angeles, and Riverside County SCAQMD. UCI's annual investment in TDM measures is approximately \$5 million.

TDM measures result in a significant reduction of VMT. UCI's Transportation and Distribution Services offers a number of sustainable commuting options as listed below:

- carpool matching through WAZEpool (an on-demand carpool matching service),
- carpool incentive program for employees and graduate students (free parking for carpools),
- ride-share through Zimride (a private ride-sharing network for UCI),
- OC Vanpools (also known as "super carpools" subsidized in part by OCTA and operated through a third-party provider),
- Guaranteed Ride Home Program,
- "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes,
- 20% rebate on commuter Metrolink and Amtrak train passes,
- convenient cost-effective options to reduce monthly transportation expenses for University students and employees,
- UCI – OC University Bus Program (provides unlimited access to the OCTA bus system),
- Zipcar car sharing program with 16 cars and over 6,000 on campus members (the University's carshare),
- UCI Zotwheels bike ridesharing service (currently offline due to expansion),
- Anteater Express (UCI's campus shuttle service with live bus tracking), in 2019 UCI shuttle system ridership was 2.2 million passengers at a cost of \$2.8 million,
- UCI Medical Campus shuttle route (provides rides to UCI Medical Hospital located outside of the campus), and
- bicycle program highlights include BikeUCI Ambassadors, the most comprehensive peer-to-peer outreach program for biking in the country; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.

The TDM strategies listed above are consistent with CAPCOA's comprehensive list of TDM mitigation measures that reduce GHG emissions. The Sustainability Tracking, Assessment & Rating System (STARS) website summarizes the results of a survey of UCI students and employees conducted in 2017. The purpose of the survey was to evaluate student and employee commute habits. The survey concludes that 33 percent of employee survey respondents commute with only the driver in the vehicle (single occupancy vehicle), 18 percent vanpool or carpool, 4 percent take the campus shuttle or public transportation, less than one percent use a motorcycle or scooter, 5 percent telecommute, and 40 percent walk, bicycle, or use other non-motorized means. Overall, this shows that approximately 67 percent of employees use more sustainable commuting options. This can be attributed to the several TDM measures listed above.

The Project would not eliminate any existing TDM measures, but rather, the availability of the campus shuttle service, bikeshare, and car share offered through UCI's Sustainable Transportation Program reduces auto dependency for students, faculty, and staff, thereby reducing on-campus VMT. Therefore,



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the Project would have less than significant impact on VMT since the Project is not anticipated to eliminate or reduce any existing TDM measures offered by UCI's Transportation and Distribution Service (discussed above).

3.5.2 UC Sustainable Transportation Policy

UCI's Sustainable Transportation Program is used to achieve the UC's Sustainable Transportation Policy Goals. Specific to commute trips, the UC Sustainable Transportation Policy is as follows:

- By 2025, each location shall strive to reduce its percentage of employees and students commuting by single-occupancy vehicles (SOV) by 10 percent relative to its 2015 SOV commute rates. By 2050, each location shall strive to have no more than 40 percent of its employees and not more than 30 percent of all employees and students commuting to the location by SOV.
- By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles by zero-emission vehicles (ZEV). By 2050, each location shall strive to have at least 30 percent of commuter vehicles by ZEV.

The progress of each UC campus towards the goals stated above is continuously monitored. The policy goals above are a part of UCI's LRDP EIR mitigation measures and have been implemented through the UCI Sustainable Transportation Program and are continuously monitored for progress to achieve the goals by 2025 and 2050. The current TDM programs that are in place have reduced SOV commute and the Project would not eliminate or reduce any existing TDM programs.



Conclusion
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4.0 CONCLUSION

The Project would construct a parking structure located in UCI's COHS campus area. Screening criteria from OPR's Technical Advisory and the City of Irvine VMT Guidelines were used to determine if the Project could be presumed to have a less than significant impact on transportation.

The Project can be presumed to have a less than significant impact on transportation based on the trip generation screening criteria since the Project would not generate traffic on its own. In general, parking lots and parking garages do not generate traffic since the traffic that utilizes parking lots and structures is drawn to the land uses associated with the parking lot/structure. In this case, the Project would provide parking primarily for the UCI COHS campus area but may also be used by students, staff, faculty, and visitors for other campus destinations. If the Project is not constructed, these students, staff, faculty, and visitors would utilize other parking facilities. In general, the Project would not increase or decrease the trips visiting the campus. Rather, by constructing a parking structure that provides high accessibility to alternative modes of transportation to travel around the campus, VMT would be reduced by reducing the amount of driving on-campus.

The Project can also be presumed to have a less than significant impact on transportation based on the proximity to high-quality transit screening criteria since the Project is located less than a half-mile away from a stop on a high-quality corridor. An Anteater Express stop is located on West Peltason Drive just west of Bison Avenue, providing access to the Anteater Express M Line with headways between 7 to 10 minutes throughout the day before 7:00pm. Accessibility to the high-quality corridor would encourage visitors to park once and utilize the shuttle service to get in and around campus, reducing VMT.

The following summarizes the findings of an additional qualitative analysis conducted for the Project.

The development of the Project would not remove any existing pedestrian or bicycle facilities, or shuttle/bus stops. Therefore, the Project would have less than significant impact on transportation based on the multimodal transportation threshold.

The Project is consistent with the approved 2007 LRDP. The LRDP was developed with sustainable development practices that balance land use, the environment, and transportation. Therefore, the Project would have less than significant impact on transportation based on the diversity of land use threshold.

The Project was accounted for in the approved 2007 LRDP and is therefore consistent with the latest RTP/SCS and would have a less than significant cumulative impact on transportation based on this consistency criteria.

The Project would not eliminate any existing TDM measures, but rather, the availability of the campus shuttle service, bikeshare, and car share offered through UCI's Sustainable Transportation Program reduces auto dependency for students, faculty, and staff, thereby reducing on-campus VMT. Therefore, the Project would have less than significant impact on transportation.



References

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5.0 REFERENCES

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